

Hanford Site Waste Management Units Report

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788



P.O. Box 1600
Richland, Washington 99352

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J. P. Shearer
CH2M HILL Plateau Remediation Company

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 **CH2MHILL**
Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352

APPROVED

By Shauna E. Adams at 9:06 am, Feb 29, 2012

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Date

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TABLE OF CONTENTS

INTRODUCTION	1
OPERABLE UNIT:	
100-BC-1.....	3
100-BC-2.....	90
100-DR-1.....	142
100-DR-2.....	289
100-FR-1.....	327
100-FR-2.....	456
100-HR-1.....	481
100-HR-2.....	557
100-IU-1.....	578
100-IU-2.....	581
100-IU-3.....	630
100-IU-4.....	634
100-IU-5.....	635
100-IU-6.....	636
100-KR-1.....	682
100-KR-2.....	697
100-NR-1.....	774
200-BC-1.....	856
200-CB-1.....	877
200-CP-1.....	886
200-CR-1.....	896
200-CU-1.....	901
200-CW-1.....	906
200-CW-3.....	916
200-CW-5.....	932
200-DV-1.....	936
200-EA-1.....	966
200-IS-1.....	1035
200-OA-1.....	1082
200-PW-1.....	1130
200-PW-3.....	1135
200-PW-6.....	1139
200-SW-1.....	1142
200-SW-2.....	1144

200-WA-1	1159
300-FF-1	1239
300-FF-2	1267
1100-EM-1	1386
1100-EM-2	1391
1100-EM-3	1395
1100-IU-1	1398
WMA A/AX	1402
WMA B/BX/BY	1418
WMA C	1463
WMA S/SX	1483
WMA T	1505
WMA TX/TY	1518
WMA U	1540
Not Applicable	1560
TBD	2208

INTRODUCTION

SCOPE AND PURPOSE

The Hanford Site Waste Management Units Report (HSWMUR) has been created to meet the requirements of the Tri-Party Agreement (TPA) Action Plan, Section 3.5, which states: “The Hanford Site Waste Management Units Report shall be generated, in a format agreed upon by the Parties, as a calendar year report and issued annually by the DOE by the end of February of each year, and posted electronically for regulator and public access. This report shall reflect all changes made in waste management unit status during the previous year.”

This February 2012 version of the HSWMUR contains a comprehensive inventory of the 3389 sites and 540 subsites in the Waste Information Data System (WIDS). The information for each site contains a description of each unit and the waste it contains, where applicable. The WIDS database provides additional information concerning the sites contained in this report and is maintained with daily changes to these sites.

DEFINITIONS

The HSWMUR shows the classification and reclassification designations for each site. These designations are based on definitions in TPA procedure TPA-MP-14. Simplified definitions are provided below. Full definitions can be found in the procedure which is available at the following URL: <http://www.hanford.gov/files.cfm/TPA-MP14.pdf>.

Classification designations are as follows:

- Accepted – The site has been evaluated and found to be a waste management unit. For sites added to WIDS since February 2, 2007, the approval date for TPA-MP-14 Rev. 1, this evaluation has also been approved by the appropriate regulatory agency. Sites added prior to February 2, 2007 were classified as Accepted based only on a contractor review.
- Accepted (Proposed) – The site has been evaluated and tentatively identified as being a waste management unit, but this evaluation has not yet been approved by the appropriate regulatory agency.
- Rejected – The site has been evaluated and found not to be a waste management unit. This evaluation has been approved by the appropriate regulatory agency.
- Rejected (Proposed) – The site has been evaluated and tentatively identified as not being a waste management unit, but this evaluation has not yet been approved by the appropriate regulatory agency.
- Discovery - The site has not yet had the evaluation completed.

Reclassification designations are as follows:

- None – The site has not been reclassified.

- Rejected – The site does not require remediation based on qualitative information such as a review of historical records, photographs, drawings, walkdowns, ground penetrating radar scans, radiation surveys, and shallow test pits.
- No Action – The site does not require remediation based on an assessment of quantitative data (e.g. analytical samples) collected for the site.
- Closed Out – The site meets applicable cleanup standards or closure requirements.
- Interim Closed Out – The site meets cleanup standards specified in an Interim Action Record of Decision, but a Final Record of Decision has not been issued.
- RCRA Postclosure – The site is a TSD unit that has been closed with waste in place and postclosure care, including monitoring and institutional controls, is being implemented
- Consolidated – The site will be dispositioned as part of another WIDS site.
- Deleted from NPL – The site is deleted from the National Priorities List or included in a final action published in the Federal Register.

ORGANIZATION

The waste management units at the Hanford Site are grouped into operable units (OUs) or waste management areas (WMAs). The groupings may be based on geographic location, types of waste received, and/or the ability to achieve economies of scale during remediation. Sites flagged as TBD (To Be Determined) haven't been assigned to an OU or WMA. Sites flagged as Not Applicable do not fit the criteria to be assigned to an OU or WMA.

The HSWMUR organization is based on the waste site grouping within the operable units and waste management areas.

100-BC-1

Code: 100-B-2 **Classification:** Accepted

Names: 100-B-2; 181-B Backwash Trench; Backwash Trench; Miscellaneous Stream #73; Undocumented Liquid Waste Site **Reclassification:** No Action (11/18/2004)

Type: Trench **Start Date:** 1/1/1975

Status: Inactive **End Date:**

Description: The site is a trench that was constructed to receive backwash filter backflush from the 181-B Pumphouse. The trench was fed by a single 30 centimeter (12 inch) pipeline that originated at the backwash filter. The pipe is approximately 0.9 meters (3 feet) below grade and enters the trench from the west. Before construction of the trench, the backflush water was returned directly to the Columbia River.

Location: The site was located east of the 181-B pumphouse and outside the exclusion area perimeter fence.

Related Sites/ Structures: The site is related to the 181-B Pumphouse.

Waste Type: Water

Waste Description: The site received river screen backwash water effluent.

Code: 100-B-3 **Classification:** Accepted

Names: 100-B-3; Hot Thimble Burial Ground; Undocumented Solid Waste Site **Reclassification:** No Action (4/2/2003)

Type: Burial Ground **Start Date:** 1/1/1952

Status: Inactive **End Date:**

Description: The site has been remediated and reclassified.

Location: The site was located south of the 105-B Reactor and west of the southwest corner of the 115-B Building.

Waste Type: Equipment

Waste Description: A highly contaminated vertical thimble was removed from the 105-B Reactor Building in 1952 and temporarily buried in a trench. The thimble was later removed and taken to another burial ground. Radioactive contaminants may remain in the trench.

Closure Info: The 100-B-3 Hot Thimble Burial Ground requires no further action to meet the cleanup standards specified in the Interim Action Record of Decision for the 100-BC-1 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The calculation brief was based on a review of historical data and facility information, no sampling was necessary to confirm the status of this site because: original documentation explained that the vertical thimble was buried in 1952 and removed prior to 1956. Also that the contamination remaining in the excavation when the thimble was removed were short-lived radionuclides, all with half-lives of less than 5.27 years. After 10 half-lives have elapsed, a radionuclide is considered to have decayed away. A geophysical survey over a larger area showed no evidence of a remaining buried thimble or the conclusive location of an old burial site. Thus, while a possible location for the burial site can be estimated from old photographs,

the actual location is unknown. Test pit results, even if the correct location was sampled, would prove inconclusive since the thimble has been removed and the short-lived radionuclides have decayed.

The calculation brief demonstrated that, based on a preponderance of the information, the 100-B-3 Buried Thimble Site no longer exists. No concentrations of the potential contaminants of concern for this site could remain above the RAGS established in the approved ROD and Remedial Design Report/Remedial Action Work Plan for the 100 Area, RDR/RAWP due to decay of the short-lived radionuclides. These results also indicate that the site will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that the site poses no threat to groundwater or the Columbia River.

Code:	100-B-5	Classification:	Accepted
Names:	100-B-5; 105-B Effluent Vent Trench; 116-B-9; Effluent Vent Disposal Trench	Reclassification:	Interim Closed Out (9/11/2003)
Type:	Trench	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1956
Description:	The site has been remediated and closed out. The site was the result of leakage that occurred at a junction box [probably at the 0.61-meter (2-foot) vent pipe], where the 1.4-meter (54-inch) 100-B Reactor cross tie pipeline effluent joined the 1.7-meter (66-inch) 100-C Reactor pipeline effluent, resulting in contamination of the area (Dorian and Richards).		
Location:	The site was believed to be located east of the 105-B Reactor Building, west of the 100-C Reactor effluent pipeline, north of the 100-B Reactor effluent cross tie pipeline, and north of the junction box where the east-west 100-B effluent pipeline joined the north-south 100-C effluent pipeline. The site location was identified as site number 23 on site drawing H-1-4049.		
Process Description:	The junction box (part of site 100-C-6, 100-C Reactor Cooling Water Effluent Underground Pipelines, but pertinent to this site) was a concrete structure that was 5.6 meters (18.5 feet) long by 5.6 meters (18.5 feet) wide by 8.2 meters (27 feet) deep. The outer walls of the structure were 0.46 meters (1.5 feet) thick. Two sides of the structure were double-walled providing the structure with two chambers. The 1.4-meter (54-inch) 100-B Reactor cross tie pipeline (invert) entered from the west through a double concrete wall, while the 1.7-meter (66-inch) 100-C Reactor pipeline (invert) entered the structure from the south through a single concrete wall. A single 1.7-meter (66-inch) pipeline exited the structure to the north through the double walled portion of the structure. The interior of the structure was accessible via metal ladder rungs. The original structure had a 0.61-meter (2-foot) vent pipe. The vent pipe was located approximately 2.35 meters (7.7 feet) southwest of the southwest corner of the junction box. The vent was above grade 1.4 meters (4.6 feet) and had a valve on the top. A new 0.31-meter (12-inch) vent pipe was added later. The vent pipe was located approximately 2.3 meters (7.5 feet) south and 1.8 meters (6 feet) east of the southwest corner of the junction box. The vent was above grade approximately 1 meter (3.3 feet) (pipe + valve handle) and had a valve handle on the top. The effluent flowed out of the junction box via the 1.7-meter (66-inch) pipeline and downhill (gravity flow since there was no pump station at 100-B) to the retention basins. On the 100-C effluent pipeline north of the junction box about 80 meters (262 feet) was an inspection manhole. The manhole (riser) was marked "Confined Space 063" and "Fixed Contamination Area FCA-B-0003".		
Related Sites/ Structures:	Associated sites include the 100-C-6 and 100-B-8 Reactor Cooling Water Effluent Underground Pipelines.		
Waste Type:	Process Effluent		
Waste	The waste was process effluent contaminated soil. Sample numbers (Dorian and Richards) and		

Description: depths were: B - 4.6, 6.1, 8.4 meters (15, 20, 27.5 feet); C - 3.05 meters (10 feet); D - 4.6, 6.1, 8.4 meters (15, 20, 27.5 feet); E - 4.6, 5.3, 7.6 meters (15, 17.5, 25 feet); F - 4.6, 6.1, 8.4 meters (15, 20, 27.5 feet); H - 6.1 meters (20 feet). Samples were analyzed for plutonium-238, plutonium-239/240, strontium-90, hydrogen-3, europium-152, cobalt-60, europium-154, cesium-234, cesium-137, europium-155, and uranium.

Closure Info: Remedial action objectives (RAOs) and goals (RAGs) for the site were documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100 HR-1, 100 HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP). Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

For the respective points of compliance, remedial action goals (RAGs) were established to identify contaminants of concern (COCs). Waste site COCs identified through process knowledge for the 105-B and 105-C Reactor cooling water effluent pipelines are listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP). Additional pipeline COCs identified during remediation include lead, mercury, total chromium, and hexavalent chromium. Because the site was associated with leaks from the cooling water effluent pipelines, the site COCs and the pipeline COCs are the same. The COCs for the site consisted of the following: americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, lead, mercury, total chromium, hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 4,450 meters squared (47,900 square feet) in area with a maximum depth of 8.5 meters (27.9 feet) below ground surface. Approximately 16,320 metric tons (17,950 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. In addition to the 100-B-5 site, the portions of the 100 B-8 and 100-C-6 Reactor cooling water effluent pipelines beneath the site were remediated with the 100-B-5 site. Cleanup verification of the rest of the adjacent large pipeline sites (100-C-6 and 100-B-8) will be included in the CVPs for those sites.

The CVP has demonstrated that remedial action at the site has met the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicated that the material from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site do not pose a threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The site has been verified to be remediated in accordance with the ROD and may be backfilled.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 100-B-8

Classification: Accepted

Names: 100-B-8; 100-B Reactor Cooling Water Effluent Underground Pipelines **Reclassification:** Interim Closed Out (4/20/2004)

Type: Radioactive Process Sewer **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1968

Description: The site encompassed the underground 100-B Reactor cooling water effluent pipelines. These included the effluent pipelines that transported 118-B-8 (105-B Reactor) cooling water from the reactor core to the 116-B-11 (107-B) Retention Basin, and from the basin to the 116-B-7 (1904-B) outfall structure. This waste site included all associated expansion and valve boxes and excluded the retention basin, outfall structure, and those effluent pipelines that were within the confines of the 105-B Reactor Building or that run from the outfall structure to the bottom of the river. It also excludes all reactor influent pipelines that are upstream (untreated and treated water pipelines) of the 105-B Reactor Building.

Location: The site included of all the underground reactor effluent lines running from the 105-B Reactor Building to the Columbia River. This includes segments between the reactor building and the retention basin, and between the basin and the outfall structure. It excludes the reactor building (and a 7.6 meter [25 foot] buffer zone for the B Reactor Museum), retention basin, and outfall structure, each of which is treated as a unique waste site. Also included are the cross-tie underground lines (one north and one south) that connect the 100-B Reactor effluent system to the 100-C Reactor effluent system (100-C-6).

Process Description: Effluent water passed from the reactor rear face and gravity flowed through the underground effluent pipelines, junction boxes and diversion boxes to the retention basins where it was held up for a short period of time to allow thermal and radiological cooling before being released through the outfall structure to the Columbia River. During periods of reactor fuel cladding ruptures, some effluent was diverted to an open trench.

Related Sites/Structures: Related structures include the 116-B-11 (107-B) Retention Basin, the 116-B-7 (1904-B) Outfall, the 105-B Reactor, the 100-C-6 Effluent Pipelines, and the 100-B-15 River Pipelines.

Waste Type: Process Effluent

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil. Reactor cooling water became radioactively contaminated as it passed through the reactor core. Activation products created in the water included calcium-41, chromium-51, and zinc-65. Activation products from the reactor core that were picked up and transported by the cooling water included tritium, carbon-14, cobalt-60, nickel-63, and europium-152/154/155. Fuel element fission products, such as strontium-90, and cesium-137, as well as transuranics such as plutonium-239/240 were introduced into cooling water due to fuel cladding failures. Concentrations of radionuclides in cooling water during normal reactor operations were approximately 0.2 microcuries/liter. Concentrations of radionuclides have built up in rust flakes and scale on the inner surfaces of the pipelines and in sludge in the diversion and junction boxes. Average beta-gamma concentrations for the effluent pipeline scale and junction/diversion boxes were 83,000 and 120,000 picocuries/liter, respectively. Average plutonium-239/240 concentrations were 66 picocuries/gram for the effluent pipeline scale and 720 picocuries/gram for the sludge at the bottom of the diversion and junction boxes. Direct readings of the bottom of the effluent pipelines averaged approximately 40,000 counts/minute with a Geiger-Mueller probe. Additional chemicals were added to the effluent for purposes of water treatment. These included aluminum sulfate (alum), with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.

This Site has the Following SubSites:

Code: 100-B-8:1

Names: 100-B-8:1; 100-B Area South Effluent Pipelines

Code: 100-B-8:2
Names: 100-B-8:2; 100-B Area North Effluent Pipelines

Code: 100-B-8:1 **Classification:** Accepted
Names: 100-B-8:1; 100-B Area South Effluent Pipelines **Reclassification:** Interim Closed Out (4/20/2004)
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: Cleanup Verification Package 2003-00022 (CVP) has documented completion of remedial action for the 100-B-8:1 subsite. The CVP demonstrated that remedial action at the 100-B/C south pipelines site had achieved remedial action objectives (RAOs) and goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The site included the underground 105-B Reactor effluent pipelines running from within 7.5 meters (25 feet) of the reactor building north to B Avenue, including all associated expansion joints and valve boxes. Also included are the cross-tie underground lines that connected the 105-B Reactor effluent system to the 105-C Reactor effluent pipeline system. Sites that are excluded from the CVP are the associated retention basin and outfall structure, which was treated as unique waste sites. The 105-B Reactor effluent pipeline subsites (100-B-8:2) are located north of B Avenue and were addressed in a separate CVP.

Location: Subsite 100-B-8:1 includes the underground effluent pipelines surrounding the 105-B Reactor (excluding a 7.6 meter [25 foot] buffer zone around the reactor foundation), and running north from the reactor to B Avenue, including all associated expansion joints and valve boxes.

Waste Type: Not Specified

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

Closure Info: 100-B-8:1 and 100-C-6:1 were addressed as a group. The information below documents information for the group of sites.

Cleanup Verification Package 2003-00022 (CVP) has documented completion of remedial action for the 100-B-8:1 subsite and the 100-C-6:1 subsite. Also included are the cross-tie underground lines that connected the 105-B Reactor effluent system to the 105-C Reactor effluent pipeline system. The CVP demonstrated that remedial action at the 100-B/C south pipelines site had achieved remedial action objectives (RAOs) and goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action objectives and goals for the 100-B/C south pipelines site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. For the 100-B/C south pipelines site, these goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Waste site contaminants of concern (COCs) identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP). The original COCs

identified in the sampling and analysis plan for this site consisted of americium-241, cesium 137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium 239/240, strontium-90, and uranium-238.

Based on the results of sampling during 100-B/C pipeline and outfall remediation, lead, mercury, total chromium, and hexavalent chromium were added to the original COC list as contaminants of potential concern. Since in-process sample analyses returned detected results for all four analytes, they were retained and evaluated as COCs throughout the CVP. The final COC list for this site, therefore, consisted of the following: americium-241, plutonium-239/240, cesium-137, strontium-90, cobalt-60, uranium-238, europium-152, lead, europium-154, mercury, europium-155, total chromium, plutonium-238, hexavalent chromium.

Cleanup verification samples including QA/QC samples consisted of 50 shallow zone samples, 11 deep zone samples, 56 overburden samples. The final verification samples were collected between November 10, 2003, and concluded on November 19, 2004, and were analyzed for the established COCs. The numerous sample numbers were listed in appendix A of CVP-2003-00022 and also in the HEIS database.
100-B-8:1 and 100-C-6:1

At the completion of remedial action, the excavation was approximately 48,260 meters squared (519,466 square feet) in area. Approximately 244,656 metric tons (269,742 tons) of material, including soil, debris, and piping were removed from the 100-B/C south pipelines site and disposed of at the Environmental Restoration Disposal Facility.

The remaining soils at these sites have been sampled, analyzed, and modeled, while contaminated material has been excavated and disposed at ERDF. These results also indicated that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The site was verified to be remediated in accordance with the ROD and may be backfilled.

The SubSite is Part Of:

Code: 100-B-8

Names: 100-B-8; 100-B Reactor Cooling Water Effluent Underground Pipelines

Code: 100-B-8:2

Classification: Accepted

Names: 100-B-8:2; 100-B Area North Effluent Pipelines

Reclassification: Interim Closed Out (2/17/2004)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Cleanup Verification Package 2003-00019 (CVP) documented completion of remedial action for the 100-B/C Effluent Pipeline subsites located north of B Avenue (100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4) (collectively referred to as the 100-B/C north pipelines site). The 100-B-8:2 subsite portion includes the 105-B Reactor effluent pipelines from B Avenue north to the 116-B-11 Trench (labeled as pipelines 3 and 4 in Figures 2 and 3 of the CVP), the pipelines from the 116-B-11 Retention Basin to the 116-B-7 Outfall (located just north of pipelines 3 and 4 terminations, Figures 2 and 3 of the CVP), and the east-west connecting pipeline from 100-B-8:2 to the diversion box for the 100-C-6 pipelines, which was just south of the 116-C-5 Retention Basin (labeled as pipeline 11 in Figures 2 and 3). It also includes the pipeline

connecting this diversion box to the 116-C-5 Retention Basin (labeled as pipeline 25 in Figures 2 and 3) and the northernmost section of pipe 11 (Figures 2 and 3) that drained into the 116-C-5 Retention Basin; these pipelines were removed and backfilled but not entirely sampled as part of the 116-C-5 remedial action (BHI 1997).

Cleanup verification for pipes 11 and 25 were conducted as part of CVP-2003-00019. Drawings identifying previous sampling locations were used to ensure that pipe 11 and pipe 25 corridors were excavated to below clean backfill elevations prior to verification sampling.

Location: These pipelines were north of the 105-B Reactor, north of B Avenue to the outfall structure.

Waste Type: Not Specified

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

Closure Info: 100-B-8:2, 100-C-6:2, 100-C-6:3 and 100-C-6:4 were addressed as a group. The information below documents information for the group of sites.

Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs).

Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs identified in the sampling and analysis plan for this site consisted of americium-241, cesium 137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium 239/240, strontium-90, and uranium-238.

Based on verification sampling results from the 100-B/C outfalls site, total chromium, hexavalent chromium, lead, and mercury were added to the original COC list as contaminants of potential concern (COPC). Since verification sample analyses returned detected results for all four analytes, they were retained and evaluated as COCs.

Cleanup verification samples including QA/QC samples consisted of 193 shallow zone samples, 104 deep zone samples, 260 overburden samples, and 72 discovery area samples. The final verification samples were collected between August 12, 2002, and concluded on July 24, 2003, and were analyzed for the established contaminants of concern. The sample numbers are too numerous to list and as of March 2004 have not been reported to HEIS, however they are available in appendix A of CVP-2003-00019 .

At the completion of remedial action, the excavation was approximately 135,000 meters squared (443,000 square feet) in area with an average depth of approximately 7.5 meters (25 feet). Approximately 244,656 metric tons (269,742 tons) of material including soil, debris, and piping were removed from the 100 B/C north pipelines site and disposed at the Environmental Restoration Disposal Facility.

The CVP demonstrated that remedial action at the 100-B/C north pipelines site had achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1995), and in the RDR/RAWP (DOE RL 2002). The remaining soils at these sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-B-8:2, 100-C-6:2, 100 C-6:3, and 100-C-6:4 sites that contained COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF.

These results also indicate that residual concentrations in the shallow zone and discovery areas will support future land uses that can be represented (or bounded) by a rural-residential

scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The SubSite is Part Of:

Code: 100-B-8

Names: 100-B-8; 100-B Reactor Cooling Water Effluent Underground Pipelines

Code: 100-B-10

Classification: Accepted

Names: 100-B-10; 107-B Basin Leak and Warm Springs

Reclassification: No Action (4/11/2002)

Type: Unplanned Release

Start Date: 1/1/1949

Status: Inactive

End Date:

Description: The site is an unknown location along the Columbia River shoreline. It was reported in February 1949 as a warm springs below the 116-B-11 Retention Basin, and was attributed to leaks in the wall of the north basin. This spring no longer exists and the precise location is unknown. The groundwater that fed the spring is a separate Operable Unit (100-BC-5).

Location: The springs were observed along the Columbia River below the 100-B Area Retention Basin (116-B-11).

Process Description: In 1991 in preparation for a spring sampling study, the entire shoreline of the River in the 100 Areas was searched for springs. Three were found at the 100-BC Area, all upstream (about 700 meters [2,300 feet] of the estimated location of this spring. No springs were found below the 116-B-11 Retention Basin. The reported spring is assumed to have stopped flowing after the basins were shut down.

Related Sites/ Structures: The springs were attributed to leaks in the walls of the north basin at 107-B (116-B-11).

Waste Type: Water

Waste Description: A sample of the water showed beta activity of 4E-03 microcuries/liter.

Code: 100-B-11

Classification: Accepted

Names: 100-B-11; 115-B Tank; 115-B/C Caisson Site; 115-B/C Caisson Valve Pit; 115-BC Drywell; 115-BC Sump

Reclassification: No Action (7/15/2004)

Type: Storage Tank

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1969

Description: The site has been demolished and is no longer discernible from the surrounding area. The site was a steel pipe structure (caisson) about 1.2 meters (4 feet) in diameter and 1.5 meters (5 feet) deep with a bottom and a steel plate placed over the top. The site was self contained without any incoming or outgoing piping. This caisson was identified during a pre-demolition walk-through of the 115-B/C Gas Recirculation Building.

Location: The site was located just east of the 115-B/C Building Dryer Room #1 and approximately 60 meters (197 feet) south-southeast of the 105-B Reactor Building.

Release Description: The releases to the caisson are unknown. Sample results taken of soil from underneath and near the sides of the caisson were below Washington Administrative Code (WAC) limits for

chromium.

Related Sites/ Structures: The site was probably related to the 115-B/C Gas Recirculation Facility (132-B-5) that was demolished in 1989. The caisson was contaminated with sodium dichromate. Sodium dichromate was not normally used at the 115 B/C Gas Recirculation Facility.

Waste Type: Soil

Waste Description: Originally, the caisson contained a yellowish-colored soil which was sampled for pH and EP toxic metals. Sample results indicated a pH of 8 and 72,500 milligrams/liter of chromium. Additional samples were taken (after caisson removal) from soil directly underneath and around the outside of the caisson. Results from these samples showed chromium levels ranging from 0.08 milligrams/liter to 9.14 milligrams/liter. The caisson contained approximately 0.37 cubic meters (13 cubic feet) of chromate contaminated soil.

Closure Info: Confirmatory sample results taken September 2003 demonstrated that the site achieved remedial action objectives and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units, commonly called the Remaining Sites Record of Decision (EPA 1999). These results show that residual concentrations will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations supported unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone, therefore, no deep zone institutional controls are required.

Code: 100-B-12 **Classification:** Accepted

Names: 100-B-12; Filter Box Radiological Materials Area (RMA) **Reclassification:** Interim Closed Out (5/31/2001)

Type: Storage **Start Date:**

Status: Inactive **End Date:**

Description: The location is a gravel field with sparse, weedy vegetation that matches the rest of the fenced 100-BC area. The site was a Radiological Materials area (RMA) with four metal boxes containing filters, that rested on shoring that sat on the bare soil. An additional six filter frames, marked as having fixed contamination, rested directly on the soil.

Location: The site is in the northwest corner of the 100-BC Area, at the approximate coordinates of 565000E and 144800N.

Waste Type: Equipment

Waste Description: The radiological contamination is fixed on the filter frames.

Closure Info: This site has been closed out. The filter boxes were removed, and the site was surveyed and downposted.

Code: 100-B-14 **Classification:** Accepted

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines **Reclassification:** Interim Closed Out (3/1/2007)

Type: Process Sewer **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1969

Description: The waste site encompassed pre-reactor underground process and sanitary pipelines and sewers, and was divided into seven subsites for decision-making purposes based on functional use and geographical location. The subsites included: 1) Main Process Sewer Collection Pipelines, 2) Sanitary Sewer Pipelines, 3) West Process Sewer Feeder Pipelines from 182-B and 183-B, 4) Cooling Water Pipelines and Tunnels from 190-B, 5) Sodium Dichromate and Sodium Silicate Pipelines, 6) Process Sewer Feeder Pipeline from 184-B and 184-B Ash Slurry Line, and 7) Process Sewer Feeder Pipelines from 185-B and 190-B.

Location: These pipelines were mostly north and west of the 105-B Reactor and north of the 183-B Filter House. Most joined to empty into the 116-B-7 Outfall. Others emptied into the 126-B-1 Power House Ash Pit, and the 1607-B2 and 1607-B7 Septic Systems. The sodium dichromate pipeline connected the 108-B Laboratory and the 190-B building, and the treated reactor cooling water ran from the 190-B Facility to the 105-B Reactor.

Process Description: These pipelines carried a variety of non-radioactive waste fluids, product (sodium dichromate), treated cooling water (pre-reactor), and sewage.

Related Sites/ Structures: Buildings associated with these pipelines included the 105-B Reactor, 190-B Facility, 108-B Laboratory, 182-B and 183-B Filter Buildings, 184-B Power House, 115-B Filter House, and 1700-Series support buildings.

Waste Type: Equipment

Waste Description: The waste site consisted of abandoned process and sanitary sewer pipelines, and residual chemicals remaining on the pipes. Chemical additives to the reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, the free chlorine residual was approximately 0.2 milligrams/liter, and sodium dichromate was added at a rate of about 2 milligrams/liter. One length of the product piping held undiluted sodium dichromate: the pipe from the 185-B/190-B to the 108-B Building (per drawing M2913, Sheet 5). This pipeline was in use only for a few years, until the sodium dichromate was added to the cooling water at the 185-B Building. (Note: Reference: WHC-SD-EN-TI-169 is for 100-F, and applies equally to 100-B).

This Site has the Following SubSites:

Code: 100-B-14:1

Names: 100-B-14:1; Main Process Sewer Collection Pipelines

Code: 100-B-14:2

Names: 100-B-14:2; Sanitary Sewer Pipelines

Code: 100-B-14:3

Names: 100-B-14:3; West Process Sewer Feeder Pipelines from 182-B and 183-B

Code: 100-B-14:4

Names: 100-B-14:4; Cooling Water Pipelines and Tunnels from 190-B

Code: 100-B-14:5

Names: 100-B-14:5; Sodium Dichromate and Sodium Silicate Pipelines

Code: 100-B-14:6

Names: 100-B-14:6; Process Sewer Feeder Pipeline from 184-B and 184-B Ash Slurry Line

Code: 100-B-14:7

Names: 100-B-14:7; Process Sewer Feeder Pipelines from 185-B and 190-B

Code: 100-B-14:1

Classification: Accepted

Names:	100-B-14:1; Main Process Sewer Collection Pipelines	Reclassification:	Interim Closed Out (2/22/2007)
Type:	Process Sewer	Start Date:	
Status:	Inactive	End Date:	
Description:	The main process line site consists of 1270 m (4166 ft) of pipe ranging from 0.3 m (12 in.) diameter vitrified-clay pipe to 1.82 m (72 in) diameter reinforced concrete pipe (RCP).		
Location:	The subsite consisted of the reinforced concrete process sewer main that formerly serviced the 105-B Reactor Building; the 108-B Chemical Pumphouse and Tritium Separation Facility; and 100-B water treatment facilities then discharged to the 116-B-7 Outfall Structure. Vitrified clay feeder pipelines associated with the 108-B facility were also included in the subsite.		
Waste Type:	Not Specified		
Waste Description:	The waste site consists of abandoned process and sanitary sewer pipelines, and residual chemicals remaining on the pipes.		
Closure Info:	Remedial action and evaluation of the 100-B-14:1 subsite has been documented in the Remaining Sites Verification Package (RSVP) (RSVP-2004-005). The subsite has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD).		

Remediation of the subsite was performed from January 2005 through April 2006 as part of the 100-B/C Area Remaining Pipes and Sewers remediation. In general, remediation of the pipelines consisted of the excavation and stockpiling (on-site) of overburden soils presumed to contain no residual contamination above cleanup levels; removal of soils around and approximately 0.3 meters (1 foot) below the pipelines; and disposal of the pipeline and suspect potentially contaminated soil at the Environmental Restoration Disposal Facility (ERDF).

Excavation at the upgradient (southeastern) end of the pipeline near the former 108-B facility was restricted within the shallow zone (less than 4.6 meters [15 feet] below ground surface [bgs]), and extended into the deep zone further downgradient, near the influent of the feeder line associated with the 105-B Reactor Building. The maximum depth of excavation was approximately 7.6 meters (25 feet) bgs, near the outfall of the pipeline at the northern end of the site. Due to co-location and concurrent remediation of differing functional pipeline groups, excavated and disposed material quantities could not be explicitly separated for the subsite. Following a determination that cleanup criteria had been attained, the excavation was backfilled with stockpiled overburden and borrow material. Railroad rails discovered and stockpiled during excavation of the site were also backfilled in the western portion of the excavation.

The Contaminants of Potential Concern (COPCs) for confirmatory sampling at the subsite were identified based on existing analytical data and process knowledge of the facilities serviced by the sewer system. The COPC list included metals, hexavalent chromium, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and alpha-, beta-, and gamma-emitting radionuclides. Additional isotope-specific analysis was also performed for one confirmatory sample based on the results of initial radionuclide analyses.

The results of confirmatory sampling were used to determine the contaminants of concern (COCs) for verification sampling. Site COCs included carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, and hexavalent chromium. Tritium was also included as a COC for the deep zone only because the process sewer formerly serviced the 108-B Tritium Separation Facility and this radionuclide was detected in a confirmatory sample

collected from the pipeline, but was mistakenly not included in analyses performed for underlying soils.

Initial cleanup verification sampling was conducted concurrently with variance sampling from May 30 to June 19, 2006. Additional verification sampling for carbon-14 in stockpiled overburden material was conducted from September 19 to 29, 2006. All verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as required per the Sampling and Analysis Plan (SAP). Based on process knowledge and the results of the confirmatory sampling activity for the subsite, this pipeline received radioactive waste stream discharges. Accordingly, the radioactive liquid waste effluent sites cleanup and closeout approach was implemented for the site, as described in the SAP.

Subsite Verification sample data were provided by the laboratories in 23 sample delivery groups (SDGs). The samples were listed by SDG in Table 8 of the RSVP. The SDGs K0388 and K0584 were submitted for third-party validation. No major deficiencies were identified in the analytical data set, all of which is acceptable for decision-making purposes. Samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency (EPA), and the results were compared against the cleanup criteria specified in the RDR/RAWP. The results were stored in the Washington Closure Hanford Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS).

Based on statistical evaluation of the resulting verification sampling data, the residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD.

The results of verification sampling illustrated that residual contaminant concentrations does not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. The acceptability of unrestricted exposure to deep zone portions of this site has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling/excavation are necessary.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-14:2

Classification: Accepted

Names: 100-B-14:2; Sanitary Sewer Pipelines

Reclassification: Interim Closed Out (3/21/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite includes septic sewer pipelines servicing several buildings and areas:

The 115-B Gas Recirculation sanitary sewer site consists of approximately 311 meters (1020 feet) of 20 centimeter (8 inch) vitrified clay sewer pipe;

The 190-B Pumphouse was serviced by 10, 15, and 20 centimeter (4, 6 and 8 inch) vitrified clay sewer pipes of various lengths;

The 183-B Water Treatment facility was serviced by a 200 meter (660 feet) long, 20 centimeter (8 inch) vitrified clay sewer pipe;

The 1700-B Series Support Buildings and 108-B Building were serviced by 15 and 20

centimeter (6 and 8 inch) vitrified clay pipes of various lengths.

Location: The pipelines in this subsite are located in four areas: east of the 183-B Clearwells; north and east of the 190-B Pumphouse; leaving the 115-B Gas Recirculation Facility and extending to the north on the east side of the 105-B Reactor; and at the 108-B Building and 1700-B Series support buildings about 150 meters (500 feet) north of the 105-B Reactor. The segments are mapped in the WCH Geographic Information System (GIS) database.

Waste Type: Not Specified

Waste Description: the waste is the sanitary sewer pipelines, pipeline contents, pipeline debris, and surrounding soils

Closure Info: 1607-B2 and 100-B-14:2 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP) 2006-055 for 1607-B2 and 100-B-14:2 has documented that the current site conditions supported a reclassification to interim closed out. Evaluations and verification sampling results for the RSVP demonstrated that the sites have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Remediation of the 100-B-14:2 and 1607-B2 waste sites was performed in stages from January 2005 through June 2006 as part of the 100-B/C Area Remaining Pipes and Sewers remediation project. All excavation was restricted within the shallow zone (less than 4.6 meters [15 feet] bgs), with an average depth of approximately 2.5 meters [8 feet] bgs, and a maximum depth of approximately 4 meters [13 feet] bgs at the septic tank. Excavation at the northern portion of the site continued to greater depth due to concurrent remediation of the underlying 100-B-14:1 process sewer. Excavated and disposed material quantities could not be explicitly separated for each site due to co-location and concurrent remediation of differing functional pipeline groups.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-14:3

Classification: Accepted

Names: 100-B-14:3; West Process Sewer Feeder Pipelines from 182-B and 183-B

Reclassification: No Action (6/4/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite consisted of the process sewer pipelines that exited from the 182-B reservoir and 183-B water treatment facilities. These process sewer lines were collected into a single 1.67 meter (5.5-foot) reinforced concrete box sewer that fed into the main process sewer collection line serving the 185-B/190-B Pumphouse, 105-B Reactor, and the 108-B Tritium Separation Facility. The basis for separating this subsite from the main process sewer line was that these lines carried effluent from facilities known to be potential sources of radioactive and chemical contaminants.

Location: These pipelines are located north of the 182-B and 183-B facilities, as well as between the 182-B and 183-B buildings, and east of the 183-B Clearwells. The individual pipeline segments are mapped in the WCH Geographic Information System (GIS) database.

Waste Type: Not Specified

Waste Description: The waste includes the pipelines and the contaminated scale contained within them.

Closure Info: A focused sampling approach was selected for this site, biased toward worst-case sample locations and locations that were accessible. Results of the sampling event were used to make decisions for reclassification of the site in accordance with the Waste Site Reclassification Guideline TPA-MP-14 (RL-TPA-90-0001).

Confirmatory sampling was conducted in October 2003. The sampling approach consisted of collecting three samples of pipe scale material from each of three manholes and one soil sample from below one manhole/pipe. The maximum detected results from the scale and soil samples were used to support waste site reclassification. A summary of the evaluation of the scale and soil sample results were compared against the applicable remedial action goals (RAGs).

The sample results demonstrated that the subsite has achieved the remedial action objectives and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly called the Remaining Sites Record of Decision). These results indicated that scale in the pipelines and associated residual soil concentrations support future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of vadose zone soil and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. Because all results attained the direct exposure remedial action goals (RAGs), deep zone institutional controls are not required.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-14:4

Classification: Accepted

Names: 100-B-14:4; Cooling Water Pipelines and Tunnels from 190-B

Reclassification: No Action (9/16/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite included the pipes and tunnels from the 190-B Building to the road east of the 105-B Reactor. There were twin tunnels at each reactor. The tunnel dimensions varied, but were about 3.3 m wide by 3.6 m high (10 ft by 12 ft). They covered a distance of about 140.2 m (460 ft) from the pumphouses to the reactor. Each tunnel from the 190-C pumphouse held one 20.3 cm (8 in) steam line and three 61 cm (24 in) water pipes. Each tunnel from the 190-B pumphouse and annex held twelve 30.5 cm (12 in), and two 45.7 cm (18 in) pipelines for cooling water to the 105-B Reactor. The pipes from the edge of the road to the reactor should be included in 118-B-8, as they cannot be removed until the reactor is addressed.

Location: This subsite includes the pipes and tunnels from the 190-B Building to the road east of the 105-B Reactor, and from the edge of the road to the reactor.

Waste Type: Not Specified

Waste Description: The waste includes the pipelines, and their contents (scale, sediment).

Closure Info: The Cooling Water Pipe Tunnels Site meets the Remedial Action Objectives specified in the

Remaining Sites ROD, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The pipelines were removed and the tunnels collapsed in 1993 during deactivation and decommissioning of the 190-B pump house. There is no history of radiological contamination associated with the 100-B Reactor cooling water tunnels and no radiological contamination was detected during decommissioning of the tunnels. There were no known process incidents at 105-B Reactor that would have introduced radiological contamination from the reactor into the tunnels. Additionally, since the 105-B cooling water tunnels had the same source of water as the 105-C cooling water tunnels, the 105-B tunnels were analogous to the 105-C tunnels.

Historical sampling indicated that no unacceptable levels of residual hexavalent chromium existed in the 105-C tunnels. The pipelines were removed and the remaining concrete at the site was analogous to concrete in the 105-C cooling water tunnels. The 105-C tunnels have been determined to meet the cleanup criteria, therefore the site also meets the cleanup criteria and the remaining contaminant levels were protective of groundwater and the Columbia River. All samples were less than the criteria of 2.0 mg/kg for protection of groundwater and Columbia River.

The SubSite is Part Of:**Code:** 100-B-14**Names:** 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines**Code:** 100-B-14:5**Classification:** Accepted**Names:** 100-B-14:5; Sodium Dichromate and Sodium Silicate Pipelines**Reclassification:** No Action (6/3/2004)**Type:** Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The subsite consisted of the sodium dichromate and sodium silicate product pipelines that transferred product from 108-B Building to 185/190-B facilities.**Location:** These pipes exit the northwest side of the 108-B Facility and connected to the north side of the 185-B Facility. The pipes make three 90-degree corners in a step like fashion with north-south and east-west sections. Exact depth below grade is unknown, but is believed to be within 3 m (10 ft) of the surface.**Waste Type:** Not Specified**Waste Description:** The waste includes the pipelines, and their contents (scale, sediment).**Closure Info:** Confirmatory sampling was conducted in October 2003. The original sampling approach consisted of collecting one sample of pipe scale and one soil sample from below each pipe at two sampling locations. Since no scale or sediment was found in the piping at the selected locations, two alternative soil locations along the piping were sampled. The maximum detected results from soil samples were used to support waste site reclassification.

The sample results demonstrated that the subsite has achieved the remedial action objectives and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly called the Remaining Sites Record of Decision). These results show that any residual soil concentrations support future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results demonstrated that

residual concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and that contaminate levels remaining in the soil were protective of groundwater and the Columbia River. The site does not have a deep zone, therefore, institutional controls are not required.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-14:6

Classification: Accepted

Names: 100-B-14:6; Process Sewer Feeder Pipeline from 184-B and 184-B Ash Slurry Line

Reclassification: No Action (6/4/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite included the process sewer pipelines from the 184-B Powerhouse, flowing north to the ash pit, and flowing east to the main trunk line (100-B-14:1) on both the north and south sides of the powerhouse. The underground piping for the 184-B Powerhouse included sanitary (clean) waterlines, a sanitary sewer line and process sewer lines. These pipelines consist of: Sanitary waterline pipelines: These pipelines consist of sanitary water pipelines, filtered water pipelines, and raw and condensor water pipelines. Proceeding from west to east along the south side of the building the pipelines include: 1607-B-3 Sanitary Sewer Pipeline: This piping is a 20.3 cm (8 in) diameter vitrified clay pipe that exited the northwest corner of the 184-B Powerhouse to the 1607-B-3 Septic Tank. 184-B Powerhouse Ash Pipeline: This pipeline is an 20.3 cm (8 in) diameter ashcolite pipe that was used to discharge coal ash that was mixed with raw water and sluiced from the 184-B Powerhouse to the 126 B Ash Pit. 184-B Process Sewer Pipelines: There are four locations where process sewer pipelines exit the 184-B Powerhouse and eventually discharge into the main 100-B-14 Process Sewer Pipeline connecting to the 116-B-7 Outfall. There is also a pipeline that discharges from the powerhouse blow-off tank into the 184-B Process Sewer Pipelines. These pipelines required confirmatory sampling and included: Two pipelines, a 15.2 cm (6 in) diameter vitrified clay pipe and a 20.3 cm (8 in) diameter vitrified clay pipe, both on the left south side of the building, that discharged into a 30.5 cm (12 in) diameter vitrified clay pipe and eventually into the main process sewer line. A 30.5 cm (12 in) diameter steel pipe near the center south side of the building that discharged into a 130.5 cm (2 in) diameter vitrified clay pipe and eventually into the main process sewer line. A 38.1 cm (15 in) diameter vitrified clay pipe on the north side of the building that discharged directly into the main process sewer pipeline.

Location: Process Sewer Pipelines exited the 184-B Power House and eventually discharged into the main 100-B-14 process sewer pipeline connecting to the 116-B-7 outfall.

Waste Type: Not Specified

Waste Description: The waste was the remaining pipelines and any potentially contaminated soil.

Closure Info: Confirmatory sampling was conducted in September and October 2003. The maximum detected results from the scale and soil samples were used to support waste site reclassification.

The Waste Site Evaluation for 184-B Powerhouse Pipelines sample results demonstrated that the site has achieved the remedial action objectives and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington, commonly called the

Remaining Sites Record of Decision. These results indicated that scale and associated residual soil concentrations support future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentration supports unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-14:7

Classification: Accepted

Names: 100-B-14:7; Process Sewer Feeder Pipelines from 185-B and 190-B **Reclassification:** No Action (6/3/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consisted of the pipelines that were used to control the temperature of process water used in association with the 185-B Deaeration Building and the 190-B Pumphouse. The pipelines were from the south side of the 185-B and 190-B facilities and ended at the sump on the southeast corner of 190-B. The subsite included the sump. The sump was a 14.3 m by 10.4 m by 4.6 m deep (47 ft by 34 ft by 15 ft deep) reinforced concrete reservoir, and was open to the environment. An 80 m (260 ft) long, 61 cm (24 in) diameter cast-iron pipe exited the south side of the 185-B Building and fed the sump. A 10 m (30 ft) long, 76 cm (30 in) diameter cast-iron pipe that exited the south side of the 190-B Pumphouse joined this pipe. The pipe entered the sump on the south side near the west corner at approximately 3 m (9 ft) below ground surface (coordinates N 144444.427; E 565173.872).

Location: These pipelines and sump are on the south side of the 185-B and 190-B facilities.

Waste Type: Not Specified

Waste Description: the waste is the pipelines, and their contents, and the 190-B sump.

Closure Info: Confirmatory sampling was conducted during October 2003. The contaminants of potential concern (COPCs) were identified based on existing analytical data, historical process information, and historical uses and practices associated with the 185 B/190-B sump and pipeline facilities. The COPCs included inductively coupled plasma (ICP) metals, mercury, and hexavalent chromium. At the location where a 46-centimeter (18-inch) pipe entered the sump, some suspect fibrous insulating material was observed. This fibrous material was sampled for asbestos analysis. The absence of radionuclide contamination was confirmed using gamma energy analysis (GEA) and gross alpha and gross beta analyses. On this basis, no radionuclide COPCs were identified for this site.

The Remaining Sites Verification Package (RSVP-2004-011) demonstrated that the site had achieved the remedial action objectives and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, commonly called the Remaining Sites Record of Decision. These results document that pipe scale and associated residual soil concentrations supported future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual concentrations supported unrestricted future use of

shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and contaminant levels remaining were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-B-14

Names: 100-B-14; 100-B Area Process and Sanitary Sewer Underground Pipelines

Code: 100-B-15

Classification: Accepted

Names: 100-B-15; 100BC River Effluent Pipelines;
100BC River Lines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This site includes the 100-B/C Area river effluent pipelines (river lines) that extend from each of the three outfalls into the main channel of the Columbia River.

Location: The river lines are located in the Columbia River, adjacent to the 100BC area. The lines extend north into the main channel of the river from three outfall structures located near the river shore.

Process Description: The river effluent pipeline from 116-B-7 (1904-B1) provided for the discharge of reactor cooling water and the B Area process sewers until 1955. After that time, it provided only for the discharge of B Area process sewers, and reactor cooling water was rerouted through a new, higher capacity 132-B-6 (1904-B2) pipeline. In 1952 the 1904-C pipelines (and the 132-C-2 outfall) discharged reactor cooling water for the new C Reactor and C Area process sewers. In the event any of the pipelines became plugged or had to be removed from service during operation, the effluent overflowed the effected outfall and entered the river via an attached spillway.

Related Sites/ Structures: The site is associated with the 116-B-7 (1904-B1 outfall), 132-B-6 (the 1904-B2 outfall), and 132-C-2 (the 1904-C outfall); the 100-B Reactor Cooling Water Effluent Underground Pipelines (100-B-8), the 100 B Area Process and Sanitary Sewer Underground Pipelines (100-B-14), the 100-C Reactor Cooling Water Effluent Underground Pipelines (100-C-6), and the 100-C Area Process and Sanitary Sewer Underground Pipelines (100-C-9); the 107-B Retention Basin (116 B-11), the 107-B Liquid Waste Disposal Trench (116-B-1), the 107-C Retention Basins (116-C-5), and the 107-C Liquid Waste Disposal Trench; and 100-B-24 (the 1904-B1 Spillway), 100-B-25 (the 1904-B2 Spillway), 100-B-26 (and the 1904 C Spillway).

Waste Type: Process Effluent

Waste Description: The waste includes the pipelines and the contaminated scale contained within them.

Contaminants of concern/potential concern are based on those for the outfalls themselves. They include americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, tritium, uranium-234, uranium-235, uranium-238, hexavalent chromium, total chromium, mercury, and lead.

Code: 100-B-16

Classification: Accepted

Names: 100-B-16; Utility Poles and Fixtures Debris Pile

Reclassification: Interim Closed Out (6/29/2005)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out.

Location:	(328 feet) west of Beaver Ave. The southern debris pile was directly south of Bell Ave. 90 meters (295 feet) and 95 meters (311 feet) west of Beaver Ave. Both areas were northwest of the 105-B Reactor.
Process Description:	The site consisted of four surface debris piles. Two piles were situated north of Bell Ave, the other two were directly south and across Bell Ave. The surface debris materials were composed of telephone poles (most of which were grouped together) and associated utility debris in piles adjacent to the telephone poles. Associated debris included unsheathed wire ropes, metal light poles, aluminum utility framing, rubber-insulated wires, ceramic insulators, broken light bulbs, light fixtures, lead bolts, and other wood pieces (including pressure-treated lumber).
Waste Type:	Misc. Trash and Debris
Waste Description:	The waste includes creosote-treated wood poles and cross beams, lead-tipped bolts and other debris. A few small boxes were seen that could be transformers. The possible transformers do not seem to be leaking any oil. Other debris included particle board, conduit, light fixtures, wire, insulators, junction boxes, chain link fencing and incandescent light bulbs.
Closure Info:	Remedial action activities for the site began November 11, 2004 until November 19, 2004. During remediation of the site all of the debris piles were removed. The material was collected, sorted, and disposed of at Environmental Restoration Disposal Facility. Following remediation, verification sampling was conducted on January 25, 2005.

Analytical results of the verification samples (J02FN3) collected in sample location 4 exceeded the asbestos criteria; consequently, additional remediation was warranted for this site. After additional remediation on March 7, 2005, a verification sample (J03034) was collected for asbestos analysis. Based on the samples and site visits, it was determined that the most effective approach would be to forego confirmatory sampling and remediate the debris piles.

Following remediation, verification sampling was conducted on January 25, 2005, and an additional sample was collected on March 7, 2005. A focused sampling approach was used and consisted of the collection of soil samples to a depth of 0.15 meters (6 inches) beneath the locations of the remediated debris piles.

The contaminants of potential concern (COPCs) for the site were identified based on the types of material present in the debris piles, which had been removed prior to sampling.

COPCs included semivolatile organic compounds, silver, arsenic, barium, cadmium, chromium (total), mercury, lead, selenium, polychlorinated biphenyls, and asbestos. Analytical results of soil samples for the site were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

In accordance with this evaluation, the sampling results supported a reclassification of this site to interim closed out. The current site soil conditions achieved the remedial action objectives and the corresponding remedial action goals established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). These results also show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 100-B-18	Classification: Accepted
Names: 100-B-18; 184-B Powerhouse Debris Pile	Reclassification: Interim Closed Out (11/30/2007)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consisted of a debris pile containing miscellaneous demolition waste from the decommissioning activities of the 184-B Building and the 184-B Power House.

Location: The 184-B surface debris pile was located northwest of the 184-B Power House. The coordinates at the center of the debris site were E 564449.562, N 144962.219.

Process Description: The 105-B Reactor operated between 1944 and 1968, and the 105-C Reactor operated between 1952 and 1969. Constructed in 1944, the coal-fired 184-B Power House provided steam and emergency electrical power for the secondary coolant system located at 181-B. The 184-B Power House also supplied office heat and other heating needs for 100 B/C Area facilities through overhead steam lines that looped through the 100 B/C Area. A small turbine generator in 184-B also supplied emergency electrical power for area building lights and motors. Soon after the 105-B and 105-C Reactors were deactivated in 1969, the 184 B Building and other ancillary facilities were gradually phased out. The 184-B Building was closed in the mid 1970s, and parts of the 184 B Power House and all of the equipment were removed in 1979. Demolition and removal of all above ground structures including the stack was complete in 1983, leaving the foundation slabs, footprints, tunnels, pits, and other associated concrete structures at or near grade level. During 1988, the foundation and the other below-grade features, including the salt dissolving pits, were demolished to at least 0.9 meters (3 feet) below grade, backfilled with rubble, and buried in situ. Four 184-B Process Sewer Pipelines exited the 184-B Power House and eventually discharged into the main 100-B-14 process sewer pipeline connecting to the 116-B-7 outfall.

Related Sites/ Structures: Some of the waste (especially corrugated ACM) at this site was similar to waste found at WIDS site 100-B-17, which was approximately 165 meters (541 feet) due north.

Waste Type: Misc. Trash and Debris

Waste Description: Suspect asbestos-containing materials such as siding, roofing, lagging, and wrapping were interspersed in the debris pile.

Closure Info: The Remaining Sites Verification Package for the 100-B-18, 184-B Powerhouse Debris Pile (Attachment to Waste Site Reclassification Form 2007-020), documents that the waste site verification sampling results support reclassification of the site to Interim Closed Out. The current site condition has met the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD).

Remediation of the site was begun on June 26, 2007, and July 16, 2007. Because the majority of the material to be disposed was inert demolition debris (e.g., concrete blocks and asphalt rubble), the Environmental Protection Agency (EPA) and the Department of Energy, Richland Operations Office (DOE-RL) agreed that site remediation would be accomplished by selective removal of suspect hazardous items (specifically, light ballasts and tar/mastic material) and potentially impacted . No cleanup action for the non-friable asbestos-containing material (ACM) was required because it did not present a potential release to the environment.

Remediation activities included the removal of 70 BCM (bank cubic meter) of tar/mastic material along with underlying soils. Although expected, no light ballasts were found during remediation. The numerous intact and broken fluorescent light tubes located at the site (approximately 50) were picked up and disposed. No other hazardous debris or stained soil

requiring remediation was identified at the site. The asphalt was not removed because it had been used for structural and construction purposes, therefore, it was excluded from consideration as a dangerous waste based on the Washington Administrative Code (WAC) 173-303-071(3)(e), it is listed as an inert waste in WAC 173-350-990(2)(b), and does not present a significant risk to human health or the environment

Verification sampling was performed concurrently with the remediation in June and July of 2007. The sampling approach was agreed to by the EPA and the DOE-RL. One focused sample, composed of 25 random aliquots and a duplicate, was collected of the soils underlying the removed tar/mastic debris. Ten focused samples were collected of the soils underlying the fluorescent light tubes. These samples were used to demonstrate that site remediation was complete and that the underlying soil met the remedial action objectives.

The analytical results for the verification samples indicated no elevated residual concentrations exceeding cleanup criteria, except antimony, barium, lead, mercury, zinc, and aroclor-1260. These constituents exceeded their respective groundwater and/or river protection remedial action goals, however, the results of vertical migration modeling predicted that none of these constituents would migrate to groundwater (and, thus, the Columbia River) within 1,000 years, and their residual concentrations were, therefore, protective of groundwater and the Columbia River. The verification sample analytical data have been stored in the ENRE project-specific database prior to being submitted for inclusion in the HEIS database. The data were also summarized in Appendix A of the RSVP-2007-020.

Because the majority of the material was inert demolition debris (e.g., concrete blocks and asphalt rubble), site remediation was accomplished by selective removal of suspect hazardous items (specifically, light ballasts and tar/mastic material) and potentially impacted soils. The asbestos-containing materials present at the site were in a non-friable form and did not present a potential release to the environment; therefore, no cleanup action was required.

Excavation was performed in June 2007 with removal of additional light tubes in July 2007. Seventy BCM (bank cubic meter) of tar/mastic material along with surrounding contaminated soils were disposal at the Environmental Restoration Disposal Facility (ERDF). Light ballasts were expected at the site, however, none were found. The numerous intact and broken fluorescent light tubes located at the site (approximately 50) were picked up and disposed. Inert debris material was left in-place at the site. No other hazardous debris or stained soil requiring remediation was identified at the site.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep-zone soils; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 100-B-19	Classification: Accepted
Names: 100-B-19; 100B/C Chemical Contaminated Surface Soil Areas; 100-B/C Stained Soil Sites	Reclassification: Interim Closed Out (1/13/2010)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: Prior to remediation the 100-B-19 waste site consisted of six stained soil locations that were dispersed within the 100-B/C Area. They were created after a WCH 2004 orphan sites field visit	

of the 100-B/C Area. Three of the locations (SS-100BC-001, SS-100BC-002, and SS-100BC-003) contained reddish-to purple-colored coarse-grained garnet material on the surface. The other three locations (SS-100BC-004, SS-100BC-005, and SS-100BC-006) had yellow-stained surface soil that was ultimately determined to originate from sulfuric acid. An agreement was made among the Environmental Protection Agency (EPA), the U.S. Department of Energy, Richland Operations Office (DOE-RL), and the Environmental Restoration Contractor Team on May 5, 2005, that a general cleanup action to remove the garnet-like material and yellow-stained soils would occur at each of the six locations. Additionally, one multi-aliquot sample would be collected of the underlying soils at each of the six locations.

Location: Using handheld GIS equipment, coordinates were provided in Washington State Plane. (SS-100BC-001): Potential garnet material was found on the surface at coordinates E 566706.139, N 145169.459 in the northeast corner of the 100-B/C Area. (SS-100BC-002): Potential garnet grit-blasting material was visible on the soil surface at coordinates E 564420.28, N 144545.33 about 150 meters (475 feet) west of the southwest corner of the 182-B Reservoir in the 100-B/C Area. (SS-100BC-003): Potential garnet grit-blasting material was visible on soil surface at E 565968.41, N 144,046.68 about 32 meters (105 feet) northeast of the north boundary of the 128-C-1 WIDS waste site, which is east of the 105-C Reactor. (SS-100BC-004): This surface stained soil area was on the north side of the railroad tracks at E 564802.438, N 144346.781 (centroid). The north area was connected (by a clay pipe culvert under railroad tracks) to a soil stained area on the south side of the railroad tracks at E 564803.312, N 144327.703 (centroid). The pipe culvert was located between the head houses for the 183-B and 183-C Water Treatment Plants. The pipe culvert was about 175 meters (575 feet) west of the northwest corner of the 151-B Substation yard. The combined area was about 28 square meters (296 square feet). (SS-100BC-005): This surface stained soil area at E 564803.062, N 144144.156 (centroid) is located 135 meters (443 feet) north and 40 meters (131 feet) east of the 183-C Head House (center). The east-west centerline of the stained surface area runs parallel and about 6.6 meters (22 feet) north of the east-west paved road (center) between the 183-C Water Plant and the 151 B Substation. The total stained area is about 58 square meters (619 square feet). The area between the two locations (i.e., the culvert) is not included in the total area. If soil analyses for potential contaminants of concern for either or both areas indicate cleanup is required, then the culvert area should be included in the cleanup action. (SS-100BC-006): There is stained soil in a hole is about 0.7 meters (2 feet) in diameter and about 1.5 meters (5 feet) deep located at E 564804.06, N 144374.71. It is about 7.5 meters (25 feet) north of the east-west paved road (center) that runs between the 183-B Water Plant and the 151-B Substation.

Process Description: Garnet grit was commonly used in grit-blasting operations to clean the surface of metal components of rust, paint, or contamination. The garnet is not a hazardous substance, but there is a potential for contamination from the surface material that was cleaned by grit blasting. Analogous waste site information is available for WIDS site 100-K-29, a garnet grit blasting surface soil site in the 100-K Area that was remediated under the Remaining Sites Record of Decision. Yellow stains on soil in this area may be due to spills of concentrated sodium dichromate solution (hexavalent chromium) and/or concentrated sulfuric acid used at the water treatment plants for reactor coolant water cleaning and for corrosion control. These chemicals were received in railroad tank cars and in tanker trucks for off-loading to storage tanks at the 183-B, 185-B, 190-B, 183-C, and 190-C water plant facilities. Chemical spills and leaks to the surrounding soil are known to have occurred during loading and unloading operations and during equipment maintenance at the 100-K Area and similar problems likely occurred at the 100-B/C water plant facilities. Analogous hexavalent chromium waste sites include the 100-C-7 hexavalent chromium waste site for the sodium dichromate equipment area in the 183-C Filter House and surrounding soil. Hexavalent chromium on concrete, steel, and soil was successfully remediated for the 190 C Pump House and Water Tunnels (BHI 1997). Analogous concentrated sulfuric acid waste sites that have been remediated include the 100 K Area sulfuric acid storage tank sites (WIDS waste sites 100-K-30, 100-K-31, 100-K-32, and 100 K-33) associated with the water treatment plant for the 100-K Area. The contaminants of concern for

concentrated sulfuric acid are lead and mercury that were present as impurities in the acid.

Waste Type: Chemical Release

Waste Description: The waste is contaminated (stained) soil. Contaminants of potential concern (COPCs) include hexavalent chromium, lead, and mercury for yellow stained sites.

Closure Info: The Remaining Sites Verification Package (RSVP), RSVP-2009-051, for the 100-B-19 site has documented that the verification sampling results support a reclassification of the site to Interim Closed Out. The site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

An agreement was made between the EPA, DOE-RL, and the Environmental Restoration Contractor Team on May 5, 2005, that a general cleanup action to remove the garnet-like material and yellow-stained soils would occur at each of the six 100-B-19 locations. Therefore, confirmatory sampling was not required. The site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2009) as a waste site for remediation, treatment, and disposal.

Initial remediation of the 100-B-19 waste site was performed between June and October 2007. In total, approximately 11,390 metric tons (12,550 US tons) of material was excavated and disposed at the Environmental Restoration Disposal Facility (ERDF) from all locations in the entire waste site. All waste soils were directly loaded out, except at location SS-100BC-004, as discussed below. All remediation was guided by visual inspection, and, where applicable, X-ray fluorescence (XRF) field measurements.

Further remediation resulting in removal of approximately 1,150 metric tons (1,270 US tons) at locations SS-100BC-002 and SS-100BC-004 was performed in 2009. Remediation at location SS-100BC-002 was performed from February to May. Additional material removal revealed a more extensive subsurface lens of garnet mixed with soil, as was previously observed at locations SS-100BC-001 and SS-100BC-003. All visible garnet material was removed over an area of approximately 450 m² (4,800 ft²) to a maximum depth of approximately 1 m (3 ft) below original grade. Remediation was guided by visual inspection, and, where applicable, X-ray fluorescence field measurements. Approximately 650 bank cubic yards (500 bank cubic meters) of soil mixed with garnet grit was excavated and staged north of the site. Loadout of the material was completed in July 2009. A total of 12,540 metric tons (13,820 tons) of material from the six stained soil locations were disposed at ERDF.

The contaminants of concern (COCs) and contaminants of potential concern (COPCs) were identified based on process knowledge, in-process sample results, and sample results from other garnet grit-blasting and sulfuric acid waste sites in the 100-K Area. The COCs/COPCs include the expanded list of inductively coupled plasma metals (arsenic, antimony, barium, beryllium, boron, cadmium, total chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc), mercury, and hexavalent chromium.

Verification soil samples were collected in February 2008 from all remediation locations; the data showed exceedances of the direct exposure RAGs for arsenic at the SS-100BC-002 excavation and hexavalent chromium at the SS-100BC-004 staging pile footprint. Additional remediation resulting in removal of approximately 1,150 metric tons (1,270 US tons) at locations SS-100BC-002 and SS-100BC-004 was performed in 2009. Both statistical and judgmental sampling were performed to verify the completeness of remediation, and analytical

results for each of eight decision units were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. While a small portion of this waste site was excavated into the deep zone, the site is classified as interim closed based on shallow zone criteria; therefore, no deep zone institutional controls are required.

Code:	100-B-20	Classification:	Accepted
Names:	100-B-20; 1716-B Maintenance Garage Underground Tank	Reclassification:	Interim Closed Out (9/27/2006)
Type:	Maintenance Shop	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. The site consisted of an underground gas and/or oil tanks near the garage. The garage was used for maintenance of 100-B area vehicles. The facility and tanks have been removed.		
Location:	The site was located approximately 300 meters (984 feet) northwest of the 105-B Reactor Building on the south side of B Avenue.		
Process Description:	The 1716-B Maintenance Shop was built in 1944 and provided automotive repair and light vehicle maintenance and lubrication service for 100-B/C Area vehicles until deactivation of B Reactor in 1968. Drawing H-1-10983 identified the building as a Bus Garage. Whalen noted the "lubrication of vehicles was accomplished from a grease pit dug in a high-bay area of the garage". Drawing HW-71669 references Drawing H-1-5055, Lube. Pit Lte. Electrical, which shows that 1716-D and 1716-F had lubrication pits, but there was no reference to one at 1716-B. The "L"-shaped 12.2 meter by 16.3 meter (40 foot by 53.5 foot), single-story, wood frame building, which measured approximately 167.2 square meters (1,800 square feet), contained one large rectangular room (high bay) and a small adjoining room (office). Drawing W-71300 shows two service bays that were large enough to accommodate buses. In 1979, the building was declared surplus, the equipment was excessed, and the entire facility was removed by a salvage operator. Removal of the gas and oil tanks nor the associated piping were mentioned.		
Waste Type:	Soil		
Waste Description:	While the records indicate that the underground gasoline tank was removed and no contamination was found in soil samples, no documentation of when the oil storage tank was removed could be found. Additional potential contamination sources include the former grease pit, lubricating fluids, battery acid in the high bay area, and asbestos shake siding.		
	Contaminants of potential concern (COPCs) would include total petroleum hydrocarbons (TPH) and polychlorinated biphenyls (PCBs).		
Closure Info:	The remedial confirmatory sampling results as documented in the Remaining Sites Verification Package (RSVP-2006-019) support a reclassification of this site to interim closed out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).		

The site was evaluated through field observations and focused sampling and analysis to determine if hazardous contaminants were present at the site. One test trench in the most likely location of the underground storage tank (UST) was excavated in sample area 1. The UST was discovered within the excavation trench at an approximate depth of 1.7 to 1.8 meters (5.5 to 6.0 feet) and consisted of two separate compartments, each of which contained waste material. The larger compartment had an approximate capacity of 946 to 1136 Liters (250 to 300 gallons) and contained 189 to 227 Liters (50 to 60 gallon) of sludge. The smaller compartment had an approximate capacity of 379 to 568 Liters (100 to 150 gallons) and contained 19 to 38 Liters (5 to 10 gallons) of a soil/water/diesel mixture.

The contaminants of potential concern (COPCs) for the waste site were identified based on existing historical information for the site and process knowledge of the 1716-B Maintenance Garage. The COPCs were associated with the petroleum storage during operation of the 454.2-Liters (120-gallon) UST, including arsenic, barium, cadmium, total chromium, lead, selenium, silver, mercury, total petroleum hydrocarbons (TPHs), semivolatile organic compounds, and polychlorinated biphenyls (PCBs). Although not included in the list of COPCs, antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, vanadium, and zinc concentrations were evaluated by performing the expanded inductively coupled plasma (ICP) metals analyses. There were no radionuclides COPCs for this site.

Confirmatory sampling of the site was conducted on January 18 and 19, 2006. The objectives of the confirmatory sampling activities were to locate the UST, and assess the site soils for any unplanned releases from the tank to the environment. No reference was made in the RSVP regarding the associated pipelines that had been left in place.

The UST was unable to be sampled in place and was removed to gain access to the internal contents. A composite sample was collected from the material in the two compartments and analyzed for waste characterization purposes. According to remedial field notes the tank contents were removed, and the empty tank and waste contents were placed into a B-25 box. In addition to the tank removal, approximately 0.3 meters (1 foot) of soil was excavated from the location underlying the UST and placed into a second B-25 box. The contents of the B-25 boxes will be managed and disposed of separately in accordance with the Washington State Department of Ecology "Dangerous Waste Regulations" (Washington Administrative Code [WAC] 173-303) and as according to CERCLA requirements, the waste will be disposed at the Environmental Restoration Disposal Facility.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration project specific database prior to submitting for inclusion in the Hanford Environmental Information System and were presented in Appendix A of the RSVP.

The sampling results illustrated that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters(15 feet)] and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

The depth of the oil tank was approximately 1.8 meters (6.0 feet) and the soils collected underlying the tank were at a depth of 2.1 meters (6.9 feet). The sample results at the boundaries of the excavation indicated that the remedial action objectives for the site have been met. No further excavation is required. As such, this site does not have a deep zone; therefore, no deep zone institutional controls were required.

Names: 100-B-21; 100-B/C Miscellaneous Pipelines **Reclassification:** Interim Closed Out (2/9/2010)

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a variety of underground pipelines that were uncovered during removal of the 100-B/C Reactor effluent pipelines and soils. The pipelines did not belong to previously-established waste sites, they have been grouped together based on the type of pipeline and potential closeout pathways for each.

Location: Locations were described in terms of easting (E), northing (N), and elevation (meters). Elevations are NAVD88.

Process Description: The pipelines in this waste site were uncovered during the removal of effluent pipelines and soils. As pipeline removal progressed, an effort was made to photograph, accurately locate (at least the exposed end), and in some cases perform limited chemical and radiological investigations of the pipelines. A number of the pipelines were not identified in drawings. Some of the pipelines were included in other waste sites, thus, gaps exist in the numbering of the pipelines included in this waste site. (DS = Discovery Structure, 100BC = Area, and 002 = next available number). Numbers (by themselves) (e.g., 26) were assigned to pipelines by the excavation subcontractor. Large-diameter pipeline generally means pipeline greater than 50.8 centimeters (20 inches).

Waste Type: Process Effluent

Waste Description: Contaminants of Potential Concern are listed only for sites known to have contaminants.

(DS-100BC-002) Contaminants of potential concern are asbestos, semivolatile organic analytes, phenanthrene, fluoranthene, pyrene, benzo (a, b, and k) anthracene, chrysene, mercury, and lead.
 (DS-100BC-016) The potential contaminants of concern are asbestos, lead, and arsenic.
 (DS-100BC-019) The potential contaminants of concern are americium-241, and asbestos.
 (DS-100BC-022) The potential contaminants of concern include asbestos.

This Site has the Following SubSites:

Code: 100-B-21:1

Names: 100-B-21:1; Steel Pipeline Segment

Code: 100-B-21:2

Names: 100-B-21:2; Asbestos/Tar Wrapped Pipeline

Code: 100-B-21:3

Names: 100-B-21:3; Asbestos Wrapped Steel Pipeline

Code: 100-B-21:4

Names: 100-B-21:4; Pipeline from the 105-C Reactor East to 116-C-2B Sump

Code: 100-B-21:1 **Classification:** Accepted

Names: 100-B-21:1; Steel Pipeline Segment **Reclassification:** No Action (2/14/2006)

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: Discovery pipelines that could not be associated with a previously-established waste site were grouped together into the 100-B-21 waste site based on the type of pipeline and potential closeout pathways for each. Two of these pipeline segments, (DS-IOOBC-016 and DS-100BC-022), were designated as subsite 100-B-21:1. The Remaining Sites Verification Package (RSVP) 2005-052 has demonstrated that the pipeline segments have met the objectives for

reclassification to "no action". The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

The evaluation of these pipelines included site histories, analytical data, process knowledge, and field observations based on field screening, and laboratory data.

The DS-100BC-016 pipeline segment consisted of a 20-centimeter (8-inch) diameter, east-west-running steel pipe found during excavation of waste site 100-C-6, the 100-C Reactor effluent underground pipelines. The pipe had an asbestos-containing tar-based spiral wrap. Where the pipeline crossed the excavation of the 100-C-6 pipelines, the pipeline segment was removed. The pipeline was left in place at coordinates, E 565473, N 144463, and elevation 145.194.

The DS-100BC-022 pipeline segment consisted of a 2.5-centimeter (1-inch) diameter pipeline discovered during the remediation of the 100-C-3 site. The pipeline was documented in an area to the southeast of the 105-C Reactor near the former location of the 119-C sample building. The pipeline connected to a larger 10.2-centimeter (4-inch) pipeline south of where the smaller section of pipeline was discovered. The larger pipeline was a water supply line, and no contaminants of potential concern were identified beyond the asbestos commonly found in the wrapping on this type of pipe. The small pipeline was considered analogous to the larger pipeline.

Location: The pipeline crosses along the east edge of 100-C-3. Coordinates are E 565396, N143951. The elevation is about 1.5 m (5 ft) below grade.

Waste Type: Not Specified

Waste Description: The waste is piping and potentially contaminated soil.

Closure Info: DS-100BC-016 : Approximately 50 meters (164 feet) of the pipeline was disposed at the Environmental Restoration Disposal Facility. The potential contaminants of concern were asbestos, lead, and arsenic. On 9/24/2003, samples J00YH1 (Chemistry) and J00YJ0 (Field Screening) were collected. The pipeline analytical data results detected total chromium (26.4-mg/kg)-and-lead-(48.4 mg/kg)-above-background-levels-and-confirmed-asbestos (4-8% chrysotile) in the pipe wrap. The total chromium and lead results were above background, but below direct exposure levels. RESidual RADioactivity (RESRAD) analysis illustrated that total chromium and lead will not reach groundwater or the river within 1,000 years, and, therefore, they are considered protective of groundwater and the river. The risk associated with asbestos was that of direct exposure to friable asbestos fibers. Because the asbestos on this pipe was suspended in a tar-based compound, it was considered nonfriable. The segment, therefore, does not require further remediation and was recommended for a no action decision.

DS-100BC-022 : A sample of the pipe wrap was taken and tested for asbestos. The analytical result confirmed 3% to 8% chrysotile in the tar wrap on the pipe. Again, the asbestos is in a nonfriable form and does not represent a risk warranting CERCLA action. The pipeline segment, therefore, does not require further remediation and is recommended for a no action decision.

Soil cleanup levels were established in the interim action ROD based on a limited ecological risk assessment. A baseline risk assessment for the river corridor portion of Hanford began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final ROD for the site.

The SubSite is Part Of:

Code: 100-B-21
Names: 100-B-21; 100-B/C Miscellaneous Pipelines

Code: 100-B-21:2 **Classification:** Accepted
Names: 100-B-21:2; Asbestos/Tar Wrapped Pipeline **Reclassification:** Interim Closed Out (6/16/2008)
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The Remaining Sites Verification Package 2008-003 documents that the 100-B-21:2 subsite meets the objectives for Interim Closed Out as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites Rod).

The 100-B-21 :2 waste site consists of the discovery pipeline originally designated DS-IOOBC-002. When discovered, this pipeline was described as 2.5 cm (1-in.) diameter asbestos-wrapped metal pipe protruding 1.5 m (5 ft) horizontally from the bank of the Columbia River. The history of the 100-B-21:2 pipeline, prior to its discovery in 2003, is unknown. The pipeline did not appear on the historical construction drawings. The location and orientation of the pipeline suggested that it was associated with the 116-B-11 Retention Basin and discharged to the river embankment. It was smaller than most drain lines, suggesting it was a pressurized water pipe, though the exact purpose remained unknown. The northern end of the 100-B-21:2 pipeline, originally discovered at N145362, E565307, was located west of the 116-B-7 outfall structure and north of the 100-BC perimeter road. During remediation the pipeline was determined to extend due south, under the 100-BC perimeter road to the edge of 116-B-11 Retention Basin excavation boundary.

Location: The pipeline is north of the 100-B/C perimeter road and north of the former location of 116-B-11 Retention Basin. The location was measured at 30.5 m (100 ft) east of the 116-B-7 flume east edge and 34 m (111 ft) north of the road. The pipeline was sampled at coordinates E 565307, N 145362, and elevation 132.086 m.

Waste Type: Not Specified

Waste Description: The waste is a small diameter pipeline and potentially contaminated soil.

Closure Info: Remedial activities were conducted from June through September 2003 and included field screening, sampling, and geophysical investigations. An additional geophysical survey in March 2007 of the 100-B-21:2 pipeline segment was performed using ground penetrating radar with results similar to those found in 2003. The geophysical interpretation identified the pipeline and noted low amplitude anomalies (thought to be large boulders) in the subsurface. The pipeline, soil in contact with the pipe, and soil 0.3 meters (1 foot) below the pipeline were removed and disposed of at ERDF. A total of approximately 91 metric tons (100 US tons) of material was disposed at ERDF. No anomalies were discovered during the remedial action.

The COCs and COPCs as listed in The Work Instruction for Verification Sampling of the 100-B-21:2, Discovery Pipeline DS-IOOBC-002 included : europium-154, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, hexavalent chromium, acenaphthene, anthracene, Bis(2-ethylhexyl)phthalate, carbaxole, dibenzofuran, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene. A characterization sampling event (J00YF7, J00YH7) occurred on September 3, 2003. The pipeline was severed 1.9 meters (6.2 feet) from its end, uplifted, and the scale dumped into a plastic bag. No elevated readings were discovered by an HPT who took direct readings of the scale.

The sampling results showed that residual soil concentrations supported future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use and are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-B-21

Names: 100-B-21; 100-B/C Miscellaneous Pipelines

Code: 100-B-21:3

Classification: Accepted

Names: 100-B-21:3; Asbestos Wrapped Steel Pipeline

Reclassification: Interim Closed Out (5/7/2009)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package for the 100-B-21:3 (RSVP-2008-052) subsite has documented that the current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

Discovered in 2003, the DS-100BC-019 pipeline was described as a 20 cm (8-in.) diameter steel pipe with an asbestos-containing, tar-based spiral pipeline wrap and mechanical joints. This pipeline protruded from a sidewall of a railroad track bed cut, located just south of the 116-B-15 Percolation Pit, and ran in a north-south direction.

In June 2007, during remedial activities, it was discovered that the DS-100BC-019 pipeline and DS-100BC-016 pipeline were connected; therefore, the DS-100BC-016 pipeline was incorporated into the 100-B-21:3 subsite and both pipeline segments were removed. The DS-100BC-016 pipeline, mapped at Washington State Plane coordinates N 14463, E 565473, had been investigated separately and reclassified as No Action in the 100-B-21:1 subsite.

Location: The site is directly south of the 116-B-15 waste site;
DS-100BC-019 located at Washington State Plane coordinates N 144494, E 565528;
DS-100BC-016 located at Washington State Plane coordinates N 14463, E 565473.

Waste Type: Not Specified

Waste Description: The waste is piping and potentially contaminated soil.

Closure Info: In March 2007, geophysical surveys were performed over the site using ground-penetrating radar (GPR). A linear anomaly that was interpreted to be the target pipeline was oriented north-south and continued to the southern edge of the investigation area where it was obscured by a highly reflective horizon. It was uncertain whether the pipeline continued past the southern boundary of the survey area; however, during remedial activities it was verified that the pipeline extended past the boundary. In September 2007, GPR was used to trace the pipeline from the last exposed point in the excavation; the line was interpreted to bend to the west and extended approximately 60 m (200 ft) to the location of the DS-100BC-016 pipeline.

In June 2007, during remedial activities, it was discovered that the DS-100BC-019 pipeline and DS-100BC-016 pipeline were connected; therefore, the DS-100BC-016 pipeline was

incorporated into the 100-B-21:3 subsite and both pipeline segments were removed. The DS-100BC-016 pipeline, mapped at Washington State Plane coordinates N 14463, E 565473, had been investigated separately and reclassified as No Action in the 100-B-21:1 subsite.

The contaminants of potential concern (COPCs) for the subsite were identified in the Work Instruction for Verification Sampling of the 100-B-21:3, DS-100BC-019 Discovery Pipeline Waste Site and were listed in Table 1 of the RSVP. Asbestos and semivolatile organic compounds were included as COPCs based on positive sample results for asbestos and benzo(a)pyrene. The 100-B-21, 100-B/C Miscellaneous Pipelines Remove, Treat, and Dispose Report used process knowledge from other underground pipeline waste sites to include arsenic, barium, cadmium, chromium (total), hexavalent chromium, lead, mercury, selenium, and silver as COPCs. Gamma energy analysis (GEA) was requested due to the unknown nature of the pipelines. Although not considered COPCs, the expanded list of inductively coupled plasma (ICP) metals was also analyzed.

In October 2008, 10 verification soil samples and 1 field duplicate were collected from the excavated area. Three soil samples and one field duplicate were collected from the overburden stockpiles and staging pile area. These samples were analyzed for the COPCs.

Overburden soils were removed from above the pipeline and placed into two stockpile areas. A total of approximately 850 metric tons (940 US tons) of material was disposed at the Environmental Restoration Disposal Facility and consisted of the DS-100BC-019 and DS-100BC-016 pipelines, soil in contact with the pipelines, and soil 0.3 m (1 ft) below the pipeline. Photographs of remedial activities were presented in Appendix A of the RSVP.

A reclassification of Interim Closed Out for the subsite is supported based on site history, process knowledge, field observations, and laboratory data. Residual concentrations at the site support future unrestricted remaining sites land uses that can be represented (or bounded) by a rural-residential scenario and are considered protective of human health, groundwater, and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

The SubSite is Part Of:

Code: 100-B-21

Names: 100-B-21; 100-B/C Miscellaneous Pipelines

Code: 100-B-21:4

Classification: Accepted

Names: 100-B-21:4; Pipeline from the 105-C Reactor East to 116-C-2B Sump

Reclassification: Interim Closed Out (2/9/2010)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package, RSVP-2009-041, has documented that the subsite has met the remedial action objectives (RAOs) and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP)) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD).

The 100-B-21:4 subsite was located in the 100-BC-1 Operable Unit of the Hanford Site, and was previously classified as the DS-100BC-044 discovery pipeline segment. The 20-cm (8-in.) stainless steel, radioactive chemical waste pipeline was at a depth of 6.1 m (20 ft) below ground surface (bgs). The pipeline ran from the northwestern corner of the 105-C Reactor Building,

under the 105-C Metal Examination Facility (MEF), and discharged into the 116-C-2B Pluto Crib Pump Station. Although there is documentation of a smaller pipeline exiting the MEF and connecting to the DS-100BC-44 pipeline, this smaller pipeline or residual connection joints were not found during remediation, and they are assumed to have never been present. Drain lines from the MEF to the 116-C-2B sump and other facilities are believed to have been removed during decontamination and decommissioning activities at the 105-C Reactor Building or during field remediation of the 100-C-6:1 process effluent pipelines.

Location: The pipeline ran from the northwestern corner of the 105-C Reactor Building, under the 105-C Metal Examination Facility, and discharged into the 116-C-2B Pluto Crib Pump Station.

Waste Type: Not Specified

Waste Description: The waste is piping and potentially contaminated soil.

Closure Info: Remedial action at the waste site was performed in April 2009. The site was excavated to a depth of 7.5 m (25 ft), generating approximately 7,095 bank cubic meters (BCM) (9,280 bank cubic yards [BCY]) of overburden material stockpiled for evaluation for use as clean backfill. The excavation encountered and disposed of approximately 64 m (210 ft) of 20-cm (8-in.) stainless steel pipeline encased in concrete, and approximately 400 BCM (523 BCY) of debris and soil were sent for disposal at the Environmental Restoration Disposal Facility (ERDF).

The contaminants of potential concern (COPCs) for verification sampling of the waste site were identified based on existing historical information, in-process sampling results, and the contaminants of concern (COCs) for the 116-C-2A, B, and C sites. These COPCs included americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, total chromium, lead, and mercury. Although not considered COPCs, antimony, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were analyzed as constituents of the expanded inductively coupled plasma (ICP) metals list.

The acceptability of direct contact with residual deep zone contamination has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required

The SubSite is Part Of:

Code: 100-B-21

Names: 100-B-21; 100-B/C Miscellaneous Pipelines

Code: 100-B-22

Classification: Accepted

Names: 100-B-22; 100-B Water Treatment Facilities, Pipelines, and Surrounding Soils

Reclassification: Interim Closed Out (3/22/2010)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site consists of the 100-B water treatment facilities, pipelines and associated soils. To facilitate remedial requirements and regulatory documentation, the site has been divided into subsites. Subsite 1 consists of the underground transfer piping that interconnected the 100-B Area Water Treatment Facilities and associated soils. Subsite 2 consists of the water treatment facility structures (183-B Filter House, 185-B Deaeration Building, 195-B Process Pump House).

Location: The water treatment facilities occupied an area approximately 275 meters (900 feet) wide by 365 meters (1200 feet) long and were 91 meters (300 feet) directly west of the 105-B Reactor

Building. The location of each facility follows: The 183-B Filter Plant structures were located along the centerline N144511 and between E564776 and E564846. The headhouse was located at E564781, N144511. The 12 flocculation basins were located at E564790, N144511. The 12 sedimentation basins were located at E564809, N144511. The filter building was located at E564839, N144511. Storage tanks were located at E565112, N144511. The process pump house was located at E565144, N144511.

Release Description: One dichromate release was noted as "a large spill in September 1966" (Gerber 1993), but was believed to have occurred on the north side of the 183-C Headhouse (discussion with J. J. Sharpe, September 2004). Unplanned releases are unknown.

Process Description: The 100-B Area Water Treatment Facilities were operated from 1944 until 1968, they provided large volumes of high-quality cooling water to the 105-B Reactor. The primary facilities (in the order of the treated water flow) included: 181-B River Pump House or Head House, Flocculation and Sedimentation Basins, Filter Building, 183-B Clear Water Reservoir (126-B-2) and Pump Room; the 185-B Deaeration Facility, the 190-B Process Pump House; and the 108-B Chemical Pump House (132-B-1). Water was removed from the Columbia River by pumps at the 181-B River Pump House and stored temporarily at the 182-B Reservoir. From 182-B, the water was pumped to the 183-B Filter House, where it was treated for use as process cooling water for the B Reactor. Here, chlorine was added to control algae, and sulfuric acid was added to lower the water pH to 7.5 for the coagulation and filtration process. Coagulants included alum, ferric sulfate, and Separan. Following coagulation and settling, the water passed through filters consisting of anthracite coal, sand, and gravel. After filtration, lime was added to raise the pH back to 7.8, and the water was stored temporarily in underground clearwells. The clarified water was next passed through the 185-B Deaeration Plant, where sodium dichromate was added at a rate of 2 parts per million. Until 1950 the sodium dichromate was mixed at the 108-B Chemical Pump House and sent via underground piping to storage tanks inside the 183-B Building. After 1950, sodium dichromate mixing was moved to 183-B. The actual injection points for the sodium dichromate were at the intake header for the storage tanks in the 190-B Process Pump House.

Related Sites/ Structures: 126-B-2 (183-B Clear Water Reservoir), 132-B-1 and 100-B-14 (108-B Chemical Pump House), 105-B Reactor

Waste Type: Soil
Waste Description: Fill material placed over potentially contaminated soil and demolished concrete structures.

The concrete flocculation and sedimentation basins were collapsed into themselves, and backfilled at least partially with waste material. No record has been found characterizing this waste material, nor has a record been found that any soil samples were taken.

Waste Type: Equipment
Waste Description: Best available information (Sharpe and Linville 2000, Plate 4) indicates that the underground piping connecting the 183-B Filter House and the 185-B/190-B Process Pump House is still in place. The lines are up to 600 meters (1,968 feet) long, and include reinforced concrete, cast iron, and steel pipes up to 137 centimeters (54 inches) in diameter. The paths of the lines are generally north of and parallel to an existing road, N144406; and south of and parallel to an existing road, N144631.

Waste Type: Soil
Waste Description: Contaminants of Potential Concern: Contaminants of potential concern (COPCs) include lead, mercury, hexavalent chromium, and polychlorinated biphenyls (PCBs).

Fill material was placed over potentially contaminated soil.
Sulfuric acid was added at the 183-B Head house for more than 20 years. Much of the sulfuric

acid was known to be contaminated with significant amounts of lead and mercury. The sulfuric acid was unloaded at the facility from two railroad car locations. It is reasonable to assume that, during the early hectic years of operation, some unplanned and unreported spills may have occurred. No record has been found that the soil in the area of the headhouse was sampled and tested for lead and mercury prior to backfilling.

Waste Type: Soil

Waste Description: Two 75,700 liter (20,000 gallon) acid storage tanks, believed to contain concentrated sulfuric acid, were located 12.2 meters (40 feet) south of the south end of the 185-B Deaeration Plant. Acid was unloaded from railroad cars near this location and acid was transferred from these tanks into the Deaeration Plant. The sulfuric acid was contaminated with significant concentrations of lead and mercury. It is prudent to assume unplanned and unreported leaks and spills of this acid may have occurred during the many years of operation of this plant. No records have been found to indicate that soil samples for lead and mercury were taken from this area during or after decommissioning. The tanks were located at E565113, N144451.

Waste Type: Soil

Waste Description: Concrete is located approximately 1 meter (3 feet) below clean fill material.

Description: Decommissioning of the 185-B Deaeration Plant, 190-B Process Pump House, and associated pipe tunnels, generally allowed any portion of a structure that was 1 meter (3 feet) below grade to be left in place. Foundation concrete for both buildings, as well as the demolished parts of the tunnels, remain underground, generally within the area bounded by E565103 and E565245, and N144444 and N144584.

This Site has the Following SubSites:

Code: 100-B-22:1

Names: 100-B-22:1; Piping Between 183-B and the 185-B/195-B Building(s)

Code: 100-B-22:2

Names: 100-B-22:2; 183-B Filter House, 185-B Deaeration Building, 195-B Process Pump House and Associated Soils; Water Treatment Facilities and Surrounding Soils

Code: 100-B-22:1

Classification: Accepted

Names: 100-B-22:1; Piping Between 183-B and the 185-B/195-B Building(s)

Reclassification: No Action (9/12/2006)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: Subsite 1 consists of the underground transfer piping that interconnected the 100-B Area Water Treatment Facilities and associated soils. The 100-B-22:1 Pipelines and Associated Soils waste site is limited to pipelines that interconnected the 183-B Filter House (including the 126-B-2 Clearwells), the 185-B Deaeration Plant, and the 190-B Process Pump House. All of the 100-B-22:1 pipelines are more than 0.15 m (6 in.) in diameter and were used for cooling water.

Location: The 100-B-22:1 pipelines are located in the 100-BC-1 Operable Unit in the 100-B/C Area of the Hanford Site just west of the 105-B Reactor.

Process Description: Process knowledge indicated that the pipelines were upstream of facilities where sodium dichromate was added to the process water and of the 105-B Reactor. The pipelines, therefore, would not have received discharges containing elevated levels of radionuclides or metals, including lead and hexavalent chromium. Originally, the sodium dichromate was brought into the 185-B/190-B Buildings as a concentrated solution through the sodium dichromate lines (100-B-14:5) that entered on the north side of the building. Cooling water pipelines between the 190-B Building and the 105-B Reactor were part of 100-B-14:4 waste site.

Waste Type: Not Specified

Waste Description: The waste is the underground piping and associated soils.

Closure Info: A reclassification to no action based on reviews of the site history, process knowledge, and field observations has been documented in the Remaining Sites verification Package 2005-042 (RSVP). The current site condition achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The RSVP indicated that the only additives to the process water in the pipelines came from the 183-B facility. Chemicals added at the 183-B facility included chlorine, sulfuric acid, alum, ferric sulfate, Separan? (a coagulant), and lime. Sulfuric acid used for water treatment at the Hanford site, historically had lead and mercury contamination. Where sulfuric acid was spilled or otherwise allowed to collect, lead and mercury have been found above the remedial action goals. These areas were most commonly associated with the transportation and handling of concentrated sulfuric acid. Trace contamination from the sulfuric acid that was added to adjust the pH of the water, would be dilute in the cooling water. There was no evidence to suggest that the pipelines were ever a source of human health risk due to the addition of sulfuric acid.

Examination of excavated trenches as well as historical documents and drawings indicated that all of the pipelines were more than 0.15 meters (6 inches) in diameter and were used for cooling water not for the transfer of concentrated chemical solutions. Three small-diameter pipelines, used as chemical transfer lines, were found plumbed into the 183-B and 190-B Buildings. Two of these pipelines, the sodium dichromate and the sodium silicate pipelines (100-B-14:5) connected the 108-B Building to the 185-B/190-B Buildings. The third small-diameter pipeline has been identified as the sodium dichromate line designated as the 100-B-28 waste site. Remediation of the 100-B-28 site is expected in 2007.

The basis for the no action determination precluded the need for sampling at this site, and therefore a comparison between soil data and ecological screening levels was not necessary. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which included a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

Reclassification evaluations have illustrated that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The evaluations also demonstrated that residual contaminant concentrations support unrestricted future use and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-B-22

Names: 100-B-22; 100-B Water Treatment Facilities, Pipelines, and Surrounding Soils

Code: 100-B-22:2

Classification: Accepted

Names: 100-B-22:2; 183-B Filter House, 185-B Deaeration Building, 195-B Process Pump House and Associated Soils; Water Treatment Facilities and Surrounding Soils

Reclassification: Interim Closed Out (3/22/2010)

Type: Dumping Area

Start Date:

Status: Inactive**End Date:**

Description: The 100-B-22 waste site consisted of the former 100-B water treatment facilities, including pipelines between the facilities, and potentially impacted soils. The three former water treatment facilities are the 183-B Filter Plant, the 185-B Deaeration Plant, and the 190-B Process Pumphouse. These facilities were designed to supply, treat, store, and transport cooling water to the 105-B Reactor. They have been decommissioned and demolished to approximately 1 m (3 ft) below ground surface (Griffin 1988, Marske 1994). Subsite 2 consisted of the 183-B Filter House, 185-B Deaeration Plant, and 190-B Process Pumphouse footprints and associated soils. The 183-B clearwells are excluded from this waste site, as they are addressed separately as the 126-B-2 waste site.

A reclassification to Interim Closed Out for the 100-B-22:2 subsite is supported based on site history, process knowledge, field observations, and comparison of residual contaminant concentrations against RAGs. The Remaining Sites Verification Package (RSVP-2010-004) for 100-B-22:2 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units. (Remaining Sites ROD).

Location: The 185-B/190-B Building is about 100 meters (330 feet) west of the 105-B Reactor; the 183-B Building is about 400 meters (1/4 mile) west of the Reactor.

Process Description: The 105 B Reactor was a single-pass reactor, so cooling water was not recycled after its initial use. All water had to be treated and conditioned prior to use in the reactor to prevent pipes within the reactor from corroding and to prevent constituents dissolved in the water from precipitating and eventually restricting flow through the aluminum pipelines used for cooling the core of the reactor. Cooling water was pumped from the Columbia River via the 181-B river pumphouse into the 182-B reservoir. From the reservoir, water flowed into the 183-B Treatment Plant where it was treated with chlorine, sulfuric acid, and coagulants such as alum, ferric sulfate, and Separan. After flocculation, particle settling, and filtration, the clarified water was stored in large underground clearwells. From the clearwells, water flowed to the 185-B Deaeration Plant via the 100-B-22:1 cooling water pipelines. The 185-B Deaeration Plant was never used for deaeration as originally intended. It did, however, contain two 3,785 liters (1,000-gal) storage tanks where concentrated sodium dichromate solution was stored. Originally, the sodium dichromate solution was mixed and piped in from the 108-B Building. In the early 1950s, the sodium dichromate mixing was moved into the 185-B Building. The sodium dichromate solution was added to the cooling water lines at the common wall of the 185-B and 190-B facilities. Cooling water was stored in the 190-B Process Pumphouse in four 6.62 million liters (1.75 million gallons) tanks. Water stored in the 190-B Process Pumphouse was available for use in the 105 B Reactor on an as-needed basis via piping in underground tunnels (100-B-14:4 subsite).

Waste Type: Not Specified

Waste Description: The remaining footprint of these facilities contains inert concrete debris and structural material below 1 meter (3 feet) below ground surface, along with other clean fill used to bring the site to grade. Fill material placed over potentially contaminated soil and demolished concrete structures.

Closure Info: The entry points for process chemicals into the former facilities were targeted for visual investigation and focused sampling. Based on confirmatory sampling performed in 2007 and 2009 the results of this investigation, it was determined that remediation was required only for a small drain line associated with the 183-B headhouse.

Remediation was performed in May 2009, by excavating approximately 40 bank cubic meters (50 bank cubic yards) of pipe debris and soil and disposing it at the Environmental Restoration Disposal Facility.

Contaminants of potential concern (COPCs) for the 100-B-22:2 site were determined based on process knowledge. Hexavalent chromium and total chromium were considered COPCs due to past handling and usage of sodium dichromate at the facilities. Lead, mercury, and sulfate were included as COPCs due to past usage of sulfuric acid for coagulant preparation and pH modification. The bauxite used for alum generation contained naturally occurring radionuclides at higher levels than local background; therefore, gross alpha and beta proportional counting and gamma spectroscopy were also performed for selected samples.

Decontamination of facility interiors was performed as part of decommissioning of the 183-B, 185-B, and 190-B buildings (Griffin 1988, Marske 1994). The remaining footprint of these facilities contains inert concrete debris and structural material, along with other clean fill used to bring the site to grade. Therefore, in development of a confirmatory investigation strategy with the U.S. Environmental Protection Agency (EPA) and the Department of Energy, Richland Office (DOE-RL), it was decided that entry points for process chemicals into these facilities represented the worst case for potential remaining contamination. The Work Instruction for Confirmatory Sampling of the 100-B-22:2 Water Treatment Facilities identified three such locations for excavation of test pits and sampling. The laboratory-reported data results for all constituents were stored in the WCH ENRE project-specific database prior to provision to HEIS and are also presented in Appendices B and D of the RSVP.

The SubSite is Part Of:

Code: 100-B-22

Names: 100-B-22; 100-B Water Treatment Facilities, Pipelines, and Surrounding Soils

Code: 100-B-24

Classification: Accepted

Names: 100-B-24; 1904-B1 Spillway (Flume); 100-B-15:1 Flumes from Outfall Structures 116-B-7, 132-B-6 and 132-C-2

Reclassification: No Action (9/18/2006)

Type: Outfall

Start Date:

Status: Inactive

End Date:

Description: The site has been sampled and found to meet the requirements for reclassification to "No Action". The flume has been decommissioned and backfilled. The 100-B-24 Spillway (also referred to as a flume) was constructed of concrete and led from the 116-B-7 outfall structure to the river shoreline.

Location: The site was located northwest of 116-B-11 Retention Basin and upstream of the 132-B-6 Outfall. The remaining portion of the spillway is 18 meters (60 feet) downstream of, and parallel to, the river effluent pipeline.

Process Description: The spillway was an alternate discharge point for the 116-B-7 Outfall Structure. The spillway was to be for an emergency effluent release or if the 100-B-15 river effluent pipelines were blocked, damaged, or undergoing maintenance. There was no corroborated physical or historical evidence that the spillway was ever used.

Related Sites/ Structures: The site was associated with the 100-B-15 River Effluent Pipelines and the 116-B-7 Outfall Structure.

Waste Type: Construction Debris

Waste: No evidence has been found that the flume was ever put into service. If it had been used the

Description: COPCs for the 100-B-24 spillway would be the same as those for the 116-B-7 outfall structure, which are as follows: Americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, total chromium, hexavalent chromium, lead, and mercury.

Closure Info: During site evaluation for the Remaining Sites Verification Package 2006-051, (RSVP) results of confirmatory sampling conducted on January 17, 2006 supported a reclassification of the site to no action. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, (ROD).

The contaminants of potential concern (COPCs) for the site were identified based on the contaminants of concern (COCs) and COPCs identified for the 116-B-7 Outfall and were as follows: americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, chromium (total), hexavalent chromium, lead, and mercury.

Further consideration of upstream processes resulted in the inclusion of polychlorinated biphenyls as a COPC. Although not considered COCs or COPCs, confirmatory sample analysis was performed for the expanded list of inductively coupled plasma (ICP) metals to include antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc. Results of the 1/17/06 focused confirmatory samples, collected from the concrete flume, exceeded the RAGs for soil. Because arsenic and other metals are commonly detected in concrete, studies have shown that the metals will not leach out in concentrations that are of concern to public health. their leachability from concrete has been repeatedly studied (PCA 1993) and is well documented. These studies have shown that metals will not leach out of concrete in concentrations that are of concern to public health (PCA 1995).

However, it was concluded that remedial action to remove the concrete had the possibility of destabilizing the riverbank. To avoid and minimize the impacts on the river and the local ecosystem of the release of soils and sediments into the river, it was reasonable to conclude that there was a greater risk posed to the river and the local ecosystem by a removal action than was posed by leaving it in its current state. The laboratory reported results for all analyzed constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to submitting the data for inclusion into the Hanford Environmental Information System (HEIS) and are also presented in Appendix A of the RSVP.

These results show that residual concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations supported unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)]. Because the residual arsenic and other metals in the concrete were not available to human or ecological receptors, the site met the cleanup objectives for direct exposure, groundwater protection, and river protection. The site does not have a deep zone; therefore, no deep zone institutional controls are required. In accordance with this evaluation, the confirmatory sampling results support a reclassification of the site to no action.

Code: 100-B-25	Classification: Accepted
Names: 100-B-25; 132-B-6 Outfall; 1904-B2 Spillway; 100-B-15:1 Flumes from Outfall Structures 116-B-7, 132-B-6 and 132-C-2	Reclassification: Interim Closed Out (1/13/2010)
Type: Outfall	Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and reclassified to Interim Closed Out. The site consisted of a Spillway (also referred to as a flume.) The spillway was constructed of concrete and led from the 132-B-6 outfall structure, via a heavy riprap extension on the end of the concrete spillway, to the river shoreline. During decommissioning projects in the 1980's, the spillway walls were collapsed and the structure was covered with clean soil.

Location: The site was located north of the northeast corner of the 116-B-11 (107-B Retention Basin) and downstream of 116-B-7 (the 1904-B1 Outfall).

Process Description: The spillway was an alternate discharge point for the 132-B-6 Outfall Structure. It was planned to be used only if the 100-B-15 river effluent pipelines were blocked, damaged, or undergoing maintenance. There is no corroborated historical information that the spillway was ever used.

Related Sites/ Structures: The site is associated with the 100-B-15 River Effluent Pipelines and the 132-B-6 Outfall Structure.

Waste Type: Demolition and Inert Waste

Waste Description: Possible chemical and/or radionuclide contamination (see Contaminants of Potential Concern).

No evidence has been found that the flume was ever put into service. If it had been used, the COPCs for the 100-B-25 spillway would be the same as those for the 132-B-6 outfall structure, which are as follows: Americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, total chromium, hexavalent chromium, lead, and mercury.

Closure Info: The Remaining Sites Verification Package (RSVP-2009-034) has documented that the 100-B-25 Overflow Spillway waste site has met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.

Excavation of the 132-B-6 Outfall sump in 2001 included removal of the upstream portion of the 100-B-25 spillway that was located within the excavation layback. Remedial action at the 100-B-25 waste site was performed between February 3 and March 14, 2009. Remediation encompassed the removal of a large volume of overburden that had been added in 2001, after the upper portion of the spillway was removed during the 132-B-6 Outfall remediation. The remaining spillway structure was unearthed and removed. Basalt rocks that formed the riprap on the slope to the Columbia River were removed for disposal due to elevated radiological readings.

The site was excavated to a maximum depth of approximately 5 m (16 ft) below grade, resulting in the removal of approximately 2,682 bank cubic meters (BCM) (3,504 bank cubic yards [BCY]) of material for disposal at the Environmental Restoration Disposal Facility (ERDF). Approximately 4,991 BCM (6,521 BCY) of soil (overburden) was stockpiled for evaluation as clean backfill. Material awaiting disposal in the waste staging piles was removed and disposed at ERDF in July 2009.

Verification sampling was performed from July to September 2009. The samples were collected to determine if the remedial action goals (RAGs) for the site had been met. The contaminants of potential concern (COPCs) for verification sampling included americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, chromium

(total), hexavalent chromium, lead, and mercury.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations supported unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. Site contamination extended slightly into the deep zone soils; however, the remediation footprint was evaluated against the more restrictive shallow zone criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone were not required.

Code:	100-B-26	Classification:	Accepted
Names:	100-B-26; 1904-C Spillway; 100-B-15:1 Flumes from Outfall Structures 116-B-7, 132-B-6 and 132-C-2	Reclassification:	No Action (9/18/2006)
Type:	Outfall	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been reclassified to No Action. The riprap section of the spillway remains, with the upper portion covered by clean fill. A rudimentary road crosses the otherwise exposed lower riprap section.		
Location:	The site was located just north of 116-B-11 (the 107-B Retention Basin) and downstream of 132-B-6 (the 1904-B2 Outfall). The remaining portion of the spillway was along a centerline from E 565724, N 145498, a minimum of 7 meters (23 feet) due north to E 565724, N 145505. The top half of the remaining spillway was concrete, and the bottom half was heavy riprap.		
Process Description:	The Spillway (also referred to as a flume) was constructed of concrete and led from the 132-C-2 outfall structure, via a heavy riprap extension on the end of the concrete spillway, to the river shoreline. During decommissioning projects in the 1980's, the spillway walls were collapsed and the structure was covered with clean soil. The upper portion of the spillway was removed in 2001 as part of remediation of the outfall structure, and the remainder of the spillway/riprap was backfilled with clean soil. The spillway was an alternate discharge point for the 132-C-2 Outfall Structure. It was planned to be used as an alternate for effluent only if the 100-B-15 river effluent pipelines were blocked, damaged, or undergoing maintenance. There was no historical information that the spillway was ever used.		
Related Sites/ Structures:	The site was associated with 100-B-15 (the 100-B/C River Effluent Pipelines) and 132-C-2 (the 1904-C Outfall Structure).		
Waste Type:	Construction Debris		
Waste Description:	If ever put into service, the COPCs for the 100-B-26 spillway would be the same as those for the 132-C-2 Outfall, which are as follows: Americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, total chromium, hexavalent chromium, lead, and mercury.		
Closure Info:	During site evaluation for The Remaining Sites Verification Package it was determined that site reclassification to No Action posed less risk to human health and the environment than remediation. The remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) have not been met. Confirmatory sampling results indicated that		

contaminant levels trapped in the soil beneath the riprap were more protective of groundwater and the Columbia River in their present state than they would be if released during remediation.

Confirmatory sampling of the waste site was conducted on January 17, 2006. Heavy equipment was used to excavate through the riprap, and the underlying soils were sampled. The sample results indicated that six constituents slightly exceeded remedial action goals for the protection of groundwater and the Columbia River. The residual contaminants within the spillway present little risk to human health and the environment compared to the effect remediating the spillway could have on the Columbia River and its shoreline.

The contaminants of potential concern (COPCs) for the 100-B-26 site were identified based on COPCs identified for the 132-C-2 outfall as follows: americium-241, cesium-137, cobalt 60, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, strontium-90, chromium (total), hexavalent chromium, lead, and mercury. Further consideration of upstream waste sites resulted in the inclusion of polychlorinated biphenyls (PCBs) as a COPC. Although not considered COPCs, confirmatory sample analysis was performed for the expanded list of inductively coupled plasma (ICP) metals to include antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

Samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The laboratory-reported results for all constituents have been stored in the Environmental Restoration (ENRE) project-specific database prior to submission for inclusion to the Hanford Environmental Information System (HEIS) and were included in Appendix B of the Remaining Site Verification Package, 2006-052.

The riprap section of the spillway remains, with the upper portion covered by clean fill. A rudimentary road crosses the otherwise exposed lower riprap section. The site was reclassified to no action because remediation to remove the riprap and underlying soils presented the possibility of destabilizing the riverbank and disturbing the existing ecosystem. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-B-27	Classification:	Accepted
Names:	100-B-27; Sodium Dichromate Spill	Reclassification:	Interim Closed Out (4/12/2010)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The site was an unplanned release of sodium dichromate that was discovered while removing the western staging pile associated with the cleanup of the 126-B-3 Coal Pit. Soil contamination associated with the spill consisted of a fairly narrow, near-vertical plume in the upper vadose zone (to approximately 11 m [36 ft] below ground surface [bgs]). Below this depth, the plume continued downward in a generally northeasterly direction. Soil contamination was found down to the groundwater table, located approximately 13.5 m (44 ft) bgs.		
Location:	The site was located 50 m (164 ft) due west of the former 126-B-3, Coal Pit.		
Process Description:	The source of contamination was unknown, but may have been related to a temporary receiving and storage warehouse that was located near the northern railroad spur. The warehouse was likely used for material offloading and storage from the railroad cars. Sodium dichromate was used in dry form at 100-B/C and transported via railroad until about 1955, when receipt of incoming sodium dichromate as a liquid solution began. The 100-B-27 waste site is believed to be associated with spillage and/or dumping of unknown amounts of sodium dichromate.		

Related Sites/ The site may be related to a temporary receiving and storage warehouse. The Plot Plan for 100-

Structures: B Area shows a material storage platform on the west end of the receiving warehouse. Initially, sodium dichromate was used in dry form thus, the platform was likely used for material offloading from railroad cars. A railroad spur left the main spur due north of the material handling platform and extended east 305 m (1000 ft) of track before it rejoined the main track. The site was associated with 126-B-3.

Waste Type: Chemical Release

Waste Description: The contaminant of potential concern is Cr6. Sample results for J030K6 show greater than 500 mg/kg total chromium (15,000 ug/L chromium by TCLP). Elevated chromium concentrations were also detected in waste characterization samples that were collected from segregated soil (J03CP6 and J03CP7).

The waste was soil contaminated with sodium dichromate. The suspected source of the sodium dichromate is consistent with handling and delivery of this material in bagged dry form. Sodium dichromate was delivered in dry form until about 1955 when modifications were made to use liquid sodium dichromate.

Closure Info: The Remaining Sites Verification Package (RSVP-2009-040) for the 100-B-27 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (ROD).

Initial remediation was performed from June 18 to 20, 2007, with excavation extending to approximately 4.6 m (15 ft) below ground surface (bgs) and removal of approximately 900 metric tons (1,000 U.S. tons) of contaminated material. Additional characterization showed that contamination extended to groundwater, so a decision was made to postpone remedial action until 2009.

Remediation resumed in February 2009 removing contaminated material to the groundwater table, encountered at approximately 14 m (46 ft) bgs. As remediation proceeded, rising Columbia River levels resulted in a rise in groundwater into the excavation, up to a maximum level of approximately 13.5 m (44 ft) bgs. Excavation activities were completed on June 9, 2009. A total of approximately 10,190 bank cubic meters (BCM) (13,330 bank cubic yards [BCY]) of contaminated soil and 40,180 BCM (52,550 BCY) of overburden/layback soil were excavated and disposed at the Environmental Restoration Disposal Facility.

The contaminants of potential concern (COPCs) were hexavalent chromium and total chromium, arsenic, antimony, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

Following remediation, verification sampling was performed on August 3 through 10, 2009. The complete laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to submitting to the Hanford Environmental Information System (HEIS) for archiving. They were also provided as an attachment to the 95% UCL calculation in Appendix C of the RSVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination that extended into the deep zone soils was completely removed; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	100-B-28	Classification:	Accepted
Names:	100-B-28; 183-C Headhouse to 183-B Pumphouse Sodium Dichromate Transfer Pipeline	Reclassification:	Interim Closed Out (3/22/2010)
Type:	Product Piping	Start Date:	
Status:	Inactive	End Date:	
Description:	<p>This site consisted of an underground sodium dichromate pipeline from the 183-C Head House to the 183-B Filter Plant/Pump House. The pipeline was originally a soft water supply line from the 184-B Power House to the 183-C Head House. According to the RSVP in 1962, the pipeline was modified to transfer sodium dichromate from the 183-C Headhouse to the 183-B Filter Plant. The northern end of the waste site was located approximately 430 m (1,410 ft) directly west of the 105-B Reactor, and the southern end of the pipeline was 9 m (28 ft) northwest of the former 183-C Filter Plant (Figure 1). The remaining southern portion of the pipeline is considered within the footprint of the 100-C-7:1 waste site. The portion of the former soft water line leading to the 184-B Power House was confirmed to have been isolated during modification of the pipeline and was not associated with sodium dichromate transfer.</p>		
Location:	<p>The 7.6-centimeters (3-inches) steel line for supplying soft water from the 184-B Power House to the 183-C Head House was modified per the drawing (H-1-10350) at a point due east of the 183-B Filter Plant/Pump House in about 1962. The line from the 184-B Power House was blanked and a new line was run to the 183-B Filter Plant to allow use of the southern extent of the 3-inch steel line as a sodium dichromate transfer line from the 183-C Head House to the 183-B Filter Plant.</p>		
Release Description:	<p>Concentrated sodium dichromate solution was drained from the "softwater" pipeline (1,2) that was excavated and opened during July-August 2005 at the 100-C-7 waste site (dichromate unplanned release) north of the 183-C Head House. The piping drawing (3) indicates the 7.6-cm (3-in) softwater line was modified in 1962 to serve as a sodium dichromate solution transfer line from the 183-C Head House to the 183-B Filter Plant. The sodium dichromate solution was collected and disposed. The spilled material was contained within the existing 100-C-7 waste site (a sodium dichromate unplanned release waste site).</p>		
Process Description:	<p>Sodium dichromate solids and concentrated solutions were received, stored, and mixed with the reactor cooling water as a corrosion inhibitor for the reactor fuel and piping. Initially, granular sodium dichromate was mixed with water to prepare a 15 Weight Percent solution that was metered into the volute of the primary pumps in the 190-B Pump House to provide a 2 part per million (ppm) concentration of sodium dichromate in the reactor cooling water. Later, the solid sodium dichromate feedstock was replaced with a concentrated (70% by weight) sodium dichromate solution that was metered into the cooling water to produce the 2 ppm concentration of sodium dichromate. The southern section of the soft water line was isolated from the 184-B Power House supply line at a point east of the 183-B Filter Plant and the northern section was blanked. A new pipeline segment was installed to connect the southern section of the pipeline to the 183-B Filter Plant.</p>		
Related Sites/ Structures:	183-C Head House; 183-C Filter Building/Pump Facility; 184-B Power House		
Waste Type:	Abandoned Chemicals		
Waste Description:	<p>Concentrated sodium dichromate solution was drained from the converted softwater pipeline (1-3) excavated and opened at the 100-C-7 waste site (dichromate unplanned release) north of the 183-C Head House. The 7.6-cm (3-in) softwater line was modified in 1962 to serve as a sodium dichromate solution transfer line from the 183-C Head House to the 183-B Filter Plant</p>		
Closure Info:	The Remaining Sites Verification Package (RSVP-2009-057) has documented that the 100-B-		

CLOSURE IIIU.

28, 183-C Headhouse to 183-B Pumphouse Sodium Dichromate Transfer Pipeline site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) for Interim Closed Out as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). The 100-B-28 waste site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, (EPA 2009) as a waste site for remediation, treatment, and disposal.

Remedial action at the site was performed from February to April 2009. Remediation included removing and staging overburden material; hot tapping, draining, and collecting the pipeline liquid; size-reducing and removing the pipeline; and removing and staging contaminated material for disposal at the Environmental Restoration Disposal Facility (ERDF). Two sections of pipeline beneath active utility lines were grouted in-place to flush residual sodium dichromate liquid. The potential for pipe leakages beneath these sections could not be addressed while the utilities remain active. Therefore, in agreement with DOE-RL and EPA, these two sections will be administratively removed from the site and placed in a new waste site created to collect components from various waste sites that cannot be remediated while utilities remain active.

The grout-filling campaign for the two sections of pipeline that were left in place was initiated on April 13, 2009, and completed on April 14, 2009. The grout was pumped into the northern section of the 100-B-28 pipeline. This section of pipeline, approximately 26 m (85 ft) in length, was located beneath an active pipeline supplying water for fire suppression. During grout addition, approximately 76 L (20 gal) of sodium dichromate liquid was displaced, collected, and drummed. The second section of pipeline, approximately 26 m (85 ft) long, ran beneath the export water line located at the southern end of the excavation. Approximately 38 L (10 gal) of sodium dichromate liquid was displaced during grout addition and disposed in the same manner as described previously.

During the excavation of the southern portion of the site, discolored soil was encountered at the base of the 7.6-cm (3-in.) pipeline. The worst of the discolored material soil was sampled (J18N79) for ICP metals and TCLP metals. Data results showed TCLP values for chromium at 130 mg/L. The material was LDR, requiring treatment for disposal at ERDF. Sampling was not performed on the less-impacted soils; however, it was conceded the material would qualify as LDR material. Approximately 40 BCM (52 BCY) of material required treatment. During removal of contaminated soil and a concrete encasement surrounding the grout-filled pipeline, a 6.1-m (20-ft) section sheared off the end. This section was placed into an ERDF container with the rest of the pipeline designated for flood grouting.

The contaminants of potential concern (COPCs) for the site were determined based on available process information and field observations during remediation. The primary contamination at this site was related to sodium dichromate; therefore, the COPCs are hexavalent chromium and total chromium. Although not considered COPCs, analyses for the constituents of the expanded ICP metals list were also performed. This included analysis for arsenic, antimony, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

One focused sample location included PAHs as the only COPCs due to the presence of benzo(a)pyrene and indeno(1,2,3-cd)pyrene detected in an in-process sample collected during remediation from the french drain location.

Following remediation, verification sampling was performed between August 24 and August 26, 2009. Based on evaluation of the final verification sampling results, the residual

contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code:	100-B-32	Classification:	Accepted
Names:	100-B-32; SCA #1; Soil Contamination Area Associated with Legacy Waste	Reclassification:	Interim Closed Out (1/13/2010)
Type:	Unplanned Release	Start Date:	1/1/2005
Status:	Inactive	End Date:	1/1/2009

Description: The site had been a Surface Contamination Area (SCA) found on the haul route from the 118-B-1 Burial Ground to the container transfer area. The area was previously posted as an SCA due to multiple locations of elevated radiological activity identified by LARADS. Field instrumentation indicated a location with approximately 3.4 million dpm/100 square centimeters beta/gamma activity at this spot. The hot spot measured approximately 25 square centimeters. The contamination at this location was matrixed with the asphalt and is believed to be a legacy of past practices and operations. Down-posting efforts following completion of remediation and closure activities in the area confirmed an area of significantly elevated radiological activity at the location listed. No other areas of significant elevated activity were identified along the posted haul route at the locations previously identified based on 2005 LARADS data.

Location: The site is located in 100-B/C Area, south of the 182-B Reservoir, just west of the intersection of Burnett Avenue and Bow Street, and on the southern portion of the roadway surface. The approximate Washington State Plane coordinates are E564738, N144362.

Related Sites/ Structures: 100-B-32 is associated with 118-B-1 Burial Ground.

Waste Type: Soil

Waste Description: The waste is contaminated soil and asphalt. The contaminants of potential concern are radiological contaminants. The source of this material is unknown.

Closure Info: The Remaining Sites Verification Package for the 100-B-32 Soil Contamination Area Associated with Legacy Waste, SCA #1, RSVP-2009-053, has documented that site verification sampling results support a reclassification to Interim Closed Out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 1004U-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Remedial action activities were performed on July 28, 2009. Verification sampling was done on August 10, 2009. The Contaminants of Potential Concern (COPC) for the site were identified as beta/gamma emitters based on field detection instrumentation. The measured gross alpha and beta activity was consistent with background; therefore no further analysis was requested.

The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford

Environmental Information System (HEIS). A detailed sample summary was provided in Appendix A of the RSVP.

The waste site has been evaluated in accordance with the Remaining Sites ROD (EPA 1999) and the RDR/RAWP. Verification sampling was performed and the analytical results indicate that the residual concentrations of COPCs at this site meet the Remedial Action Objectives (RAOs) for direct exposure, groundwater protection and river protection. Site contamination did not extend into the deep zone soils; therefore no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 100-B-33 **Classification:** Accepted

Names: 100-B-33; SCA #2; Soil Contamination Area 2 **Reclassification:** Interim Closed Out (1/13/2010)
Associated with Legacy Waste

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a Surface Contaminated Area (SCA). The site was discovered during GPERS surface soil surveys of the north-east quadrant of the 100-BC Area in July - August 2007. The readings found showed an elevated area averaging 15,000 cpm over a 150 square meter area with a max reading of 93,000 cpm.

Location: The site is located in the north-east quadrant of the 100-B/C Area, north of the railroad tracks and east of the former 100-C-9 pipeline. The approximate Washington State Plane coordinates are E565557.125, N144949.672.

Waste Type: Soil

Waste Description: The waste is contaminated soil. The contaminants of potential concern are radiological contaminants. The source of this material is unknown.

Closure Info: Remedial action was performed from May to August 2009. Remediation consisted of removing soils with elevated radiological activity identified with field instrumentation. In total, approximately 310 bank cubic meters (410 bank cubic yards) of contaminated soil was excavated and staged on site before being disposed at the Environmental Restoration Disposal Facility.

The contaminants of potential concern (COPCs) for the site were determined using historical sampling data from adjacent structures (e.g., 116-C-5 Retention Basins) and the results of characterization samples J18N05 and J18N06. The COPCs for the site included: lead, mercury, chromium (total), carbon-14, cesium-137, cobalt-60, europium-152, nickel-63, plutonium-238, plutonium-239/240, strontium-90, tritium, uranium-233/234, uranium-235, and uranium-238. Although not considered COPCs, arsenic, antimony, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were also evaluated by performing analyses for the expanded inductively coupled plasma metals list.

Following remediation, verification sampling was conducted in September 2009. The results indicated that the waste removal action achieved compliance with the remedial action objectives (RAOs) and remedial action goals (RAGs) for the site. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to inclusion into the Hanford Environmental Information System. The sampling results data were presented in Appendix A of the RSVP. The verification sampling results support a reclassification of this site to Interim Closed Out. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 116-B-1 **Classification:** Accepted

Names: 116-B-1; Process Effluent Trench; 107-B Liquid Waste Disposal Trench **Reclassification:** Interim Closed Out (12/8/1999)

Type: Trench **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1968

Description: The site has been remediated and closed out. The 116-B-1 Liquid Waste Disposal Trench was dug to receive effluent routed from 116-B-11 (107-B Retention Basin). The unit ran from southwest to northeast. The site included the 40.6 centimeter (16 inch) diameter steel piping from 116-B-11. Historical documents described the trench as a french drain or an excavation that was partly or completely filled with coarse gravel and had dimensions of 61 meters (200 feet) long by 9.1 meters (30 feet) wide by 4.6 meters (15 feet) deep. A geophysical investigation of 116-B-1 performed in November and December 1996 showed the trench was almost twice as long as indicated by historical information (see Dimensions). The Ground Penetrating Radar (GPR) survey identified a pipeline, labeled #10 in the survey report, entering the trench at its southwest end. No other pipelines were evident. A significant volume of buried debris was present in the northeastern half of the trench.

Location: The site was located east of the 107-B Retention Basin.

Related Sites/Structures: The site was associated with the 107-B Retention Basin and the 107-C Retention Basin.

Waste Type: Misc. Trash and Debris

Waste Description: Geophysical investigation identified a high concentration of subsurface debris in the northeastern half of the trench.

Waste Type: Process Effluent

Waste Description: The site received effluent from the 107-B Retention Basin at times of high activity due to fuel element failures. The fission products of 54 fuel ruptures were routed to this site.

Closure Info: The site has been excavated; the excavation floor was about 1,863 square meters (20,056 square feet or 0.46 acres) at a depth of 4.6 meters (15 feet). About 43,033 metric tons (47,436 tons) of material was disposed of in the Environmental Restoration Disposal Facility (ERDF).

The maximum dose rate (all pathways) predicted from the RESRAD dose assessment model is 5 mrem/year in 1999, and decreases to 0.014 mrem/year in 1,000 years, based on samples taken from the excavation walls and floor. Hexavalent chromium is the only non-radionuclide carcinogenic contaminant of concern; the risk value was three orders of magnitude below the individual and cumulative risk limits.

Code: 116-B-2 **Classification:** Accepted

Names: 116-B-2; B-Storage Basin Crib; 105-B Storage Basin Trench **Reclassification:** Interim Closed Out (2/24/2000)

Type: Trench **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1946

Description: This site was remediated and closed out on February 24, 2000. It is no longer marked or posted. The trench was used one time to receive approximately 4E+06 liters (1.1E+06 gallons) of storage basin water that became contaminated when a fuel rod was accidentally cut in half. The trench was backfilled after use with clean dirt.

Location: The 116-B-2 site was located near the center of the 100-B Area, approximately 865 meters (2,838 feet) from the Columbia River and 76 meters (250 feet) northeast of 105-B Storage Basin.

Process: The trench was only used once in 1946 to receive contaminated basin water after a fuel element

Description: was accidentally cut in half in the 105-B Fuel Storage Basin.

Waste Type: Water

Waste Description: This unit was dug and used once after a fuel element was accidentally cut in half in the 105-B Storage Basin. Basin water was discharged to this unit in an attempt to remove radionuclides from the fuel storage basin cooling water for contamination control.

Closure Info: The site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the ROD (EPA 1995) and are summarized in the CVP along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 1998) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 1998).

Excavation of the 116-B-2 site began on February 17, 1999, by removing the overburden materials and underlying contaminated soil. Based on field screening, materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. After completion of the initial excavation to design limits, several contaminated areas (i.e., plumes) were discovered. Each of the plumes was excavated and the new surfaces were screened for contamination. On May 20, 1999, the excavation had reached the final limit at El. 138.4 meters (454.2 feet). Cleanup verification sampling began on May 21, 1999, and was finished on June 24, 1999.

At the completion of the remedial action, the excavation floor area was approximately 459 square meters (4,940 square feet) at a depth of approximately 4.9 meters (16 feet), and approximately 9,393 metric tons (10,354 tons) of material from the site had been disposed of at ERDF.

As of February 2000, the excavation will be backfilled with clean fill materials to the reference grade of El. 143.3 meters (470.2 feet). Clean backfill may be taken from the clean overburden pile and other sources of clean material that have been verified clean in accordance with the SAP (DOE-RL 1998) and that are appropriate for use as backfill.

From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include the following: cesium-137, europium-152, europium-154, strontium-90, uranium-238, uranium-233/234, and hexavalent chromium (Cr+6).

The cleanup verification package (CVP) demonstrated that remedial action at the 116-B-2 site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP. Materials that contained COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils have been sampled, analyzed, and modeled to show that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. This scenario, described in Section 4.2 of the CVP, assumes multiple exposure pathways (e.g., ingestion, inhalation, direct exposure) for shallow zone soils. (The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 meters (5 feet)] are required.) The verification package also demonstrated that residual COC concentrations pose no threat to groundwater or the Columbia River. Thus, the 116-B-2 site has been verified to be remediated and may be backfilled.

Code: 116-B-3	Classification: Accepted
Names: 116-B-3; 105-B Pluto Crib	Reclassification: Interim Closed Out (2/24/2000)
Type: Crib	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1952

Description: The 116-B-3 Pluto Crib has been remediated and was closed out on February 24, 2000. It is no longer marked or posted. This unit was a wooden crib shored with railroad ties, filled with gravel and covered to grade with clean soil. A concrete marker indicates the position of the crib. Clukey (1954) indicates that the crib is a french drain, otherwise defined as a "tile or pipe buried vertically, sometimes gravel-filled". After its use, the crib was reportedly unearthed and shored with wooden ties.

Location: This unit was located within the 105-B Area exclusion fence, about 30 meters (100 feet) east of the 105-B Building and about 847 meters (2,780 feet) from the 100-year flood level of the Columbia River.

Process Description: This pluto crib received 105-B cooling water wastes that had been contaminated by cladding ruptures of fuel elements. Cooling water diversion occurred when a fuel element rupture was detected within a process tube. The water was diverted from the affected process tube through a valve on the rear of the reactor face known as a "pluto valve" and through rubber hose to the crib. The wooden crib was buried so that its upper surface was approximately at grade. A hatch on the upper surface was opened to receive the rubber hose and the crib was allowed to flood.

Waste Type: Water

Waste Description: The site received effluent from reactor tubes containing ruptured fuel elements.

Closure Info: The cleanup verification package (CVP-1999-00013) has documented that the 116-B-3 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision (ROD) (EPA 1995) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL 1998).

The remedial action excavation was conducted at this site beginning on February 17, 1999 and ending March 11, 1999. At the completion of the remedial action, the area of the excavation was approximately 112 square meters (1,209 square feet) at a maximum depth of approximately 4.6 meters (15 feet). Approximately 244 metric tons (269 tons) of material from the site were disposed at the ERDF. As of February 2000, the excavation is to be backfilled with clean fill materials to the reference grade of El. 143 meters (469 feet).

From process knowledge and identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-1998), contaminants of concern (COCs) included cesium-137, strontium-90, uranium-233/234, and hexavalent chromium.

The remaining soils have been sampled, analyzed, and modeled to show that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 meters (15 feet)] are required.) The verification package also demonstrated that residual COPC concentrations pose no threat to groundwater or the Columbia River. Thus, the 116-B-3 site has been verified to be remediated and may be backfilled.

square meters (11,433 square feet) at a depth of approximately 4.6 meters (15 feet), and approximately 8,700 metric tons (9,590 tons) of material from the site had been disposed at ERDF.

From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include cobalt-60, cesium-137, europium-152, europium-154, europium-155, and plutonium-239/240.

The cleanup verification package (CVP) demonstrated that remedial action at the 116-B-4 site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE-RL 1998). The remaining soils have been sampled, analyzed, and modeled to show that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 meters (5 feet)] are required.

Code:	116-B-5	Classification:	Accepted
Names:	116-B-5; 116-B-5 Crib; 116-B-5 Trench; 108-B Crib	Reclassification:	Interim Closed Out (1/14/1997)
Type:	Crib	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1968
Description:	The crib structure and its contents have been removed. The crib was constructed of concrete timbers and consisted of 12 rectangular cells in a single row. Each cell was partially filled with sandy gravel and had a separate concrete lid. For cleanup purposes, the cells were identified using the letters "A" through "L", with cell A being the southernmost cell.		
Location:	The crib was located approximately 46 meters (150 feet) north of the 108-B Building site (132-B-1) and east of the 108-B Ventilation Exhaust Stack Burial Ground (132-B-3).		
Waste Type:	Process Effluent		
Waste Description:	The site received liquid tritium wastes from the 108 Building. Only wastes of less than 1 microcuries/cubic centimeter were discharged to this unit.		
Closure Info:	In June 1995, the site was excavated as part of the 100-B/C Demonstration Project. Remedial action was accomplished by excavating approximately 300 cubic meters (10,600 cubic feet) of soil from the crib and demolishing the concrete crib structure, leaving an open excavation approximately 34 meters (112 feet) by 8 meters (26 feet) to a 5 meter (16 feet) depth. The soils within and surrounding the crib were sampled and analyzed. The soils from cells C and D containing levels of tritium above cleanup standards were taken to the Environmental Restoration Disposal Facility (ERDF). All other soils sampled were within cleanup standards.		

There were 137 samples taken during remediation activities. The samples are identified as follows: 116-B5-007, 116-B5-008, 116-B5A-10, 116-B5A-12.5, 116-B5A-14.5, 116-B5B-10, 116-B5B-12.5, 116-B5B-14.5, 116-B5C-6, 116-B5D-10, 116-B5D-12.5, 116-B5D-15, 116-B5E-10, 116-B5E-12.5, 116-B5E-15, 116-B5F-10, 116-B5F-12.5, 116-B5F-15, 116-B5G-10, 116-B5G-12.5, 116-B5G-15, 116-B5H-10, 116-B5H-12.5, 116-B5H-15, 116-B5I-10, 116-B5I-12.5, 116-B5I-15, 116-B5I-D, A_BTM, A_PILE, B_BTM, B0G7C2 through B0G7C9, B0G7C7ND, B0G7D0 through B0G7D9, B0G7F0 through B0G7F9, B0G7G0 through B0G7G3, B0G7G6 through B0G7G9, B0G7H0 through B0G7H9, B0G7J0 through B0G7J9, B0G7K0 through B0G7K9, B0G7L0 through B0G7L9, B0G7M0 through B0G7M5, B0G7N1 through B0G7N9, B0G7P1, B0G8Z4, B0G8Z5, CELL8TOP, CELLAPS1, CELLAPS2, CELLBPS1, H95023 through H95027, PIPELCA, and PIPELCB. A summary table showing

the samples results is published in the 100-B/C Demonstration Project Final Report (BHI-00752).

A "100 NPL Agreement/Change Control Form" documenting the close out of the 116-B-5 Crib was submitted on January 8, 1997 and signed by the Environmental Protection Agency Project Manager on January 14, 1997. The form also authorized the backfilling of the waste site.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	116-B-6A	Classification:	Accepted
Names:	116-B-6A; 111-B Crib No. 1; 116-B-6-1	Reclassification:	Interim Closed Out (5/17/2000)
Type:	Crib	Start Date:	1/1/1951
Status:	Inactive	End Date:	1/1/1968

Description: This site has been remediated and closed out.

Location: The site was located immediately north of the 111-B Building Site.

Process Description: The 116-B-6A Crib received radioactive liquid wastes from equipment decontamination performed in the 111-B Building, as well as from the decontamination of fuel element spacers.

Waste Type: Process Effluent

Waste Description: The unit received radioactive liquid wastes from equipment decontamination performed in the 111-B Building, as well as from the decontamination of fuel element spacers performed at the 111-B Building Decontamination Station.

Closure Info: 116-B-6A and 116-B-16 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package for the 116-B-6A Crib and 116-B-16 Fuel Examination Tank, because of their close proximity to each other and similar contaminants of concern (COCs), were excavated as one remedial action site and are hereinafter referred to as the 116-B-6A/116-B-16 site.

At the completion of the remedial action, the total excavation was approximately 603.5 meters squared (6,496 square feet or 0.15 acres) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 5,072 metric tons (5,591 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. The excavation will be backfilled in the near future (written June 6, 2000) with appropriate materials to the reference grade El. 146 meters (479 feet).

Results of the sampling, laboratory analyses, and data evaluations for the 116-B-6A/116-B16 site indicate that all remedial action objectives and goals for direct exposure, protection of ground water, and protection of the Columbia River have been met. However, this site close out includes a deed restriction against drilling or digging into the deep zone soils (below 4.6 m [15 ft] depth).

Code:	116-B-6B	Classification:	Accepted
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Names: 116-B-6B; 111-B Crib No. 2; 116-B-6-2 **Reclassification:** Interim Closed Out (2/24/2000)

Type: Crib **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1953

Description: This site has been remediated and closed out. The site was commonly known as the 116-B-6B Crib, although it has also been known as 111-B Crib No. 2 and as 116-B-6-2.

Location: The site is located approximately 9.2 meters (30 feet) southeast of the former 111-B Building site.

Process Description: The unlined crib received radioactive wastes from equipment decontamination performed in the 111-B decontamination station, as well as liquid wastes from the decontamination of fuel element spacers.

Related Sites/ Structures: The site was associated with the 111-B Building.

Waste Type: Process Effluent

Waste Description: The site received radioactive wastes from equipment decontamination performed in the 111-B Building as well as liquid wastes from fuel element spacer decontamination.

Closure Info: The Cleanup Verification Package (CVP-99-00017) demonstrates that remedial action at the 116-B-6B site has achieved the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the Interim Action ROD (ROD) (EPA 1995) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 1998).

The waste site contaminant of concern (COC) identified from process knowledge and listed in the sampling and analysis plan (SAP) is lead. Volatile organic compounds (VOC) were included as contaminants of potential concern; however, no VOCs were detected in the field. Therefore, VOCs were not addressed in the cleanup verification analyses for this site.

Excavation of the 116-B-6B site began on March 11, 1999, by removing the materials and underlying contaminated soil. Based on field screening, materials identified as potentially clean were placed in stockpiles for potential use as backfill. On March 12, 1999, the excavation reached the design limits at El. 144.28 meters (473 feet) and cleanup verification sampling was initiated.

At the completion of the remedial action, the excavation floor was approximately 25 square meters (270 square feet) at a depth of 3 meters (9.8 feet). A total of approximately 263 metric tons (259 tons) of material were disposed at the Environmental Restoration Disposal Facility (ERDF). The excavation was to be backfilled with clean fill materials to the reference grade of El. 147.3 meters (483 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-B-7 **Classification:** Accepted

Names: 116-B-7; 1904-B1; 1904-B-1 Outfall Structure **Reclassification:** Interim Closed Out (7/25/2002)

Type:	Outfall	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1972
Description:	The site has been remediated and closed out. The outfall was excavated, sampled and backfilled to match the surrounding grade.		
Location:	The site was located at the top of the river bank, northwest of 116-B-11 (107-B Retention Basin), upstream of 132-B-6 (1904-B2 Outfall).		
Process Description:	Outfalls were open, reinforced concrete structures that directed the water through either the river discharge pipelines or through spillways. The spillways were concrete flumes used when the river pipelines were blocked, damaged or undergoing maintenance. Cooling water released from the reactor went to a retention basin located between the reactor building and the river. Water retention permitted thermal cooling and decay of short-lived radioisotopes prior to river discharge. As reactor production increased, the hold-up period decreased. The basins also served to hold up flow of effluent with high radioactive isotope concentrations resulting from fuel element failure. This effluent was isolated and diverted, either by gravity or pumping, to an open pond area or crib. The pond or crib filtered the effluent through the ground. The cooling water discharged into the upper chamber of the concrete outfall structure, flowed through a bar grillwork and fell about 20 feet to the lower chamber of the outfall structure. The cooling water then overflowed from the lower chamber into the discharge pipe to the river.		
Related Sites/ Structures:	The site received effluent from the 100B process effluent lines (100-B-8), the 100B process sewer lines (100-B-14), and discharged effluent via the 100BC river effluent pipelines (100-B-15) and flumes (100-B-15:1).		
Waste Type:	Process Effluent		
Waste Description:	The outfall was originally used for both process sewer and reactor cooling water disposal until 1954 when it was used exclusively for process sewer disposal.		
Closure Info:	116-B-7, 132-B-6 and 132-C-2 were addressed as a group. The information below documents information for the group of sites.		

The cleanup verification package (CVP-2002-00003) for the sites, also referred to as B/C Outfall, has demonstrated that remedial action has met the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the approved interim action Interim Action Record of Decision (ROD) (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17 Rev. 3).

Remedial action at the B/C Outfall site began on June 4, 2001. Excavation of the three outfall sites involved removing the overburden materials and debris, the contaminated structure, and underlying contaminated soil.

The COCs and COPCs for this site consist of the following: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, and strontium-90. Sampling and analysis during remediation indicated that additional COPCs should be identified. The additional COPCs are as follows: total chromium, hexavalent chromium, lead, mercury. Total chromium, hexavalent chromium, lead, and mercury were detected in cleanup verification samples and were therefore evaluated as COCs for the B/C Outfall site.

Cleanup verification sampling for the deep and shallow zones was done on January 14 and 15, 2002. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the SAP.

The sampling results indicate that residual concentrations in the shallow zone will support

future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Institutional control (IC) information has been revised for 116-B-7, 132-B-6, and 132-C-2 as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including these, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that Ics actually were required. The Ics for this site have been revised accordingly.

Code:	116-B-9	Classification:	Accepted
Names:	116-B-9; 104-B-2 French Drain	Reclassification:	Interim Closed Out (2/24/2000)
Type:	French Drain	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1954
Description:	The site has been remediated and closed out. The site is a french drain that was related to the 104-B-2 Tritium Laboratory (118-B-9). The site includes the feed pipeline that originated at the 104-B Building. The drain was not originally apparent from the surface. Ground Penetrating Radar (GPR) revealed an anomaly consistent with a french drain. Photo images #2 and #3 show the french drain.		
Location:	The site is located approximately 30 meters (100 feet) east of the 104-B-2 Storage Building (104-B2 Tritium Laboratory), northwest of the 108-B Tritium Separation Facility (132-B-1), and just inside the reactor exclusion area fence.		
Process Description:	The 104-B-2 building was associated with the P-10 project that involved tritium production. The 104-B-2 Building was used to store casks containing irradiated lithium targets for tritium production and product tritium. The facility contained an inspection laboratory and an annex on the east end that contained air sampling equipment.		
Related Sites/ Structures:	The site was associated with the 104-B-2 Building.		
Waste Type:	Process Effluent		
Waste Description:	The site received waste water from the P-10 Storage Building drain. Since the P-10 project involved tritium production, tritium may be a potential contaminant. The drain is not currently posted as being contaminated. An evaluation to determine potential contaminants for the 100 Area SAP resulted in four COPCs: coal-60, cesium-137, europium-152, and strontium-90.		
Closure Info:	Site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 1998) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 1998).		

From process knowledge, there are no waste site contaminants of concern (COCs) identified in the SAP (DOE-RL 1998a). However, several contaminants of potential concern (COPCs) have been identified. These COPCs are cobalt-60, cesium-137, europium-152, and strontium-90.

Excavation of the 116-B-9 site began on March 10, 1999, by removing the overburden

materials and underlying contaminated soil. Based on field screening, materials identified as potentially clean were placed in stockpiles for potential use as backfill. On March 11, 1999, the excavation had reached the design limit at El. 139 meters (455.8 feet). Cleanup verification sampling began on March 15, 1999, and was finished on April 23, 1999.

At the completion of the remedial action and removal of the engineered structure, the excavation area was approximately 51.5 square meters (554 square feet or 0.013 acres) at a depth of approximately 2.44 meters (8.0 feet). The excavation will be backfilled in the near future (as of February 2000) with clean fill materials to the reference grade of El. 141.1 meters (462.8 feet). Clean backfill may be taken from the clean overburden pile and other sources of clean material that have been surveyed in accordance with the SAP (DOE-RL 1998) and that are appropriate for use as backfill.

The CVP demonstrates that remedial action at the 116-B-9 site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and the RDR/RAWP (DOE-RL 1998). Materials that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils have been sampled, analyzed, and modeled to show that residual COC concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. This scenario, described in the Cleanup Verification Package (CVP), assumes multiple exposure pathways (e.g., ingestion, inhalation, and direct exposure) for shallow zone soils.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 meters (15 feet)] are required. The verification package demonstrates that residual COC concentrations pose no threat to groundwater or the Columbia River. Thus, the 116-B-9 site is verified to be remediated in accordance with the ROD.

Code:	116-B-10	Classification:	Accepted
Names:	116-B-10; Quench Tank; 108-B Dry Well	Reclassification:	Interim Closed Out (2/24/2000)
Type:	Injection/Reverse Well	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1968
Description:	The site was remediated in 1999 and closed out in February 2000. It is no longer marked or posted. The site was a french drain with a metal manhole type cover and constructed of a 61-centimeter (24-inch) vitrified clay pipe on subsurface concrete slab. It was covered with a plywood cover and clean backfill material. A 3.8-centimeter (1.5-inch) drain line was added in the mid-50s that came from the experimental tube and other hardware decontamination facility. All piping leading into the drain was removed at the time of the 108-B demolition.		
Location:	The unit is located in the northwest corner of Room 15-C of 108-B Building.		
Process Description:	The quench tank was used to collect liquid decontamination wastes from the 108-B Tube Examination and Experimental Facility.		
Waste Type:	Process Effluent		
Waste Description:	This site received liquid decontamination wastes from the 108-B Tube Examination and Experimental Facility. During the tritium recovery programs, the site also received liquid decontamination wastes from the mask and small tool decontamination station located on the second floor and storm runoff from the fan room roof. The 108-B Building was involved with tritium recovery activities so tritium is a possible contaminant of concern.		
Closure Info:	The cleanup verification package (CVP-99-00010) has demonstrated that remedial action at the 116-B-10 site has met the Remedial Action Objectives (RAOs) and corresponding Remedial		

Action Goals (RAGs) as established in the approved interim action Interim Action Record of Decision (ROD) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The site was remediated to meet the cleanup standards and closed out on February 24, 2000. The contaminants of potential concern (COPC) identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) include: cobalt-60, cesium-137, europium-152, europium-154, strontium-90, uranium-233/234, uranium-238, hexavalent chromium, and mercury.

Excavation of the site began on March 10, 1999. After completion of the initial excavation to design limits, several other contaminated areas (plumes) were discovered and also excavated. For this phase cleanup verification sampling began on May 20, 1999, and was finished on June 22, 1999.

At the completion of the remedial action, the excavation floor was approximately 153 square meters (1650 square feet) at a depth of 2.4 meters (8 feet), and approximately 692 metric tons (763 tons) of material were disposed at the Environmental Restoration and Disposal Facility (ERDF).

The remaining soils have been sampled, analyzed, and modeled to show that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. This scenario, described in Section 4.2 of the CVP, assumes multiple exposure pathways (e.g., ingestion, inhalation, direct exposure) for shallow zone soils.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	116-B-11	Classification:	Accepted
Names:	116-B-11; 116-B-11 Retention Basin; 107-B Retention Basin	Reclassification:	Interim Closed Out (12/8/1999)
Type:	Retention Basin	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1968
Description:	The site has been remediated and closed out. It includes the retention basin and the two effluent pipes running parallel to, and adjacent to, the north side of the basins. These pipes were removed as part of the plume removal during the retention basin remedial action.		
Location:	The 116-B-11 Retention Basin lies near the northern edge of the 100-B Area and is located north of 116-C-5 (107-C Retention Basin).		
Process Description:	The 116-B-11 Retention Basin was constructed to hold cooling water effluent from the 105-B Reactor to allow for thermal cooling and radioactive decay prior to release to the Columbia River. This unit was a concrete-lined basin with wooden baffles. The basin was divided lengthwise into two halves designed to operate independently. The floor and walls consist of concrete slabs, their joints were originally closed with neoprene water seals. From the basin floor to approximately 3 meters (10 feet) above the floor, the walls sloped and were approximately 0.1 meter (4 inches) thick. The upper 3 meter (10-foot) sections of the walls were vertical and ranged in thickness from about 1.7 meters (5 feet 8 inches) at the bottom to 0.3 meter (1 foot) at the top. The unit was backfilled with soil to a depth of almost 1.2 meters		

(4 feet).

Related Sites/ Structures: The 116-B-11 Retention Basin is associated with the 105-B Reactor, the 116-B-1 Liquid Waste Disposal Trench, 116-B-7 (1904-B1 Outfall), and the 132-B-6 (1904-B2 Outfall).

Waste Type: Water

Waste Description: This unit received cooling water effluent from the 105-B Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the unit ranged from 5 to over 400 curies. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 curies have leached into the concrete floor and walls.

Closure Info: The site has been excavated and remediated. Results of the sampling, testing, and analyses for the 116-B-11 site cleanup indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of surface waters (including the Columbia River) have been met.

The material removed from the site (approximately 165,178 metric tons [182,109 tons]) was disposed of in the Environmental Restoration Disposal Facility (ERDF). The excavation will be backfilled with clean material to the reference grade of elevation 132.5 meters (434.7 feet).

Code: 116-B-12	Classification: Accepted
Names: 116-B-12; 117-B Crib; 117-B Seal Pit Crib	Reclassification: Interim Closed Out (2/24/2000)
Type: Crib	Start Date: 1/1/1961
Status: Inactive	End Date: 1/1/1968

Description: This site has been remediated and closed out. The site was a crib with bottom measurements of 6.1 meters (20 feet) by 15.24 meters (50 feet).

Location: The site is located northeast of the 105-B Reactor Building. The site is adjacent to the 118-B-5 Burial Ground.

Process Description: The crib received drainage from the confinement system seal pits in the 132-B-4 Air Filtration Ventilation Building.

Related Sites/ Structures: The site was associated with the 117-B (132-B-4 Air Filtration Ventilation) Building, which has been demolished.

Waste Type: Process Effluent

Waste Description: The site received drainage from the confinement system in the 117-B Building seal pits. From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP (DOE-RL 1998) include strontium-90, uranium-238, and hexavalent chromium (Cr+6).

Closure Info: This site was remediated to meet the cleanup standards and closed out on February 24, 2000.

Site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 1998) and are discussed in further

detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 1998).

From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP (DOE-RL 1998) include strontium-90, uranium-238, and hexavalent chromium (Cr+6).

Excavation of the 116-B-12 site began on February 17, 1999, by removing the overburden materials and underlying contaminated soil. Based on field screening, materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On March 5, 1999, the excavation had reached the design limit at El. 139.93 meters (459.1 feet). Cleanup verification sampling began on March 15, 1999, and was finished on April 13, 1999.

At the completion of the remedial action, the excavation floor area was approximately 520.8 square meters (5,605.8 square feet or 0.129 acres) at a depth of approximately 4.6 meters (15 feet), and approximately 8,696 metric tons (9,586 tons) of material from the site had been disposed of at ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 144.5 meters (474 feet).

The Cleanup Verification Package (CVP) demonstrated that remedial action at the 116-B-12 site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and the RDR/RAWP (DOE-RL 1998). Materials that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils have been sampled, analyzed, and modeled to show that residual COC concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. This scenario, described in the CVP, assumes multiple exposure pathways (e.g., ingestion, inhalation, and direct exposure) for shallow zone soils.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 meters (15 feet)] are required. The verification package demonstrates that residual COC concentrations pose no threat to groundwater or the Columbia River. Thus, the 116-B-12 site was verified to be remediated in accordance with the ROD.

Code:	116-B-13	Classification:	Accepted
Names:	116-B-13; 116-B-8; Basin Sludge Burial Pit; 107-B #2 Grave; 107-B South Sludge Trench	Reclassification:	Interim Closed Out (7/22/1999)
Type:	Trench	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1952
Description:	This site has been remediated, backfilled, and revegetated. It has been closed out.		
Location:	Historical documentation places the trench south of the southeast corner of the 116-B-11 Retention Basin.		
Process Description:	The 116-B-13 Sludge Trench was dug to receive sludge from the bottom of the 107-B Retention Basin (116-B-11).		
Related Sites/Structures:	The site was associated with the 116-B-11 (107-B) Retention Basin.		
Waste Type:	Sludge		
Waste Description:	The unit received low-level sludge waste from the bottom of 116-B-11 (107-B Retention Basin). During maintenance clean out operations, sludge was disposed of in the trench. There is no indication from available records that this site directly received any regular and/or high-		

volume effluent wastes.

Potential contaminants of concern included: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, total chromium, hexavalent chromium (Cr+6), mercury, and lead.

Closure Info: The cleanup verification package (CVP-1999-00002) has documented that the 116-B-13 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision (ROD) (EPA 1995) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

Excavation of the 116-B-13 site began on August 7, 1998, by removing the overburden materials and underlying contaminated soil. On November 6, 1998, the excavation had reached the design limits at the base of the engineered structure, elevation 128.2 meters (421 feet) and cleanup verification sampling was initiated.

At the completion of the remedial action, the excavation footprint area was approximately 620 square meters (6,674 square feet) at a depth of 4.3 meters (14 feet), and approximately 6,340 metric tons (6,989 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled to the reference grade of elevation 132.5 meters (435 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	116-B-14	Classification:	Accepted
Names:	116-B-14; 116-B-2; 107-B #1 Grave; 107-B Liquid Waste Disposal Trench No. 1; 107-B North Sludge Trench	Reclassification:	Interim Closed Out (7/22/1999)
Type:	Trench	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1948
Description:	The 116-B-14 site appears as an open field covered with cobbles and sparse vegetation. The site has been remediated and closed out.		
Location:	The 116-B-14 site is located immediately north of 116-B-11 (107-B Retention Basin) and is outside the exclusion area fence that encloses the 116-B-11 and 116-C-5 (107-C Retention Basin). The center line for the trench is believed to be approximately 12 meters (40 feet) north of the exclusion area fenceline. The exact locations of the site boundaries are uncertain.		
Related Sites/ Structures:	The site was related to 116-B-11 (107-B) Retention Basin.		
Waste Type:	Sludge		
Waste Description:	The unit received low-level sludge waste from the bottom of 116-B-11 (107-B Retention Basin). During maintenance clean out operations, sludge was disposed of in the trench. There is no indication from available records that this site directly received any regular and/or high-volume effluent wastes. After its use, the waste site was covered with about 1.8 meters (6 feet) of soil.		

Potential contaminants of concern included: americium-241, cobalt-60, cesium-137, europium-

152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, total chromium, hexavalent chromium (Cr+6), mercury, and lead.

Closure Info: The cleanup verification package (CVP-1999-00003) has documented that the 116-B-14 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision (ROD) (EPA 1995) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

Excavation began on May 27, 1998, and reached the design limits below the base of the engineered structure (elevation 126.5 meters [415 feet]) on September 17, 1998.

At the completion of the remedial action, the excavation area floor was approximately 132 square meters (1,422 square feet) at a depth of 6 meters (19.7 feet), and approximately 3,795 metric tons (4,183 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled to the reference grade of (elevation 132.5 meters [435 feet]). Clean backfill was taken from the clean overburden pile and other sources of clean material (e.g., demolition rubble from the 108-F Building) that have been surveyed in accordance with the Sampling Analysis Plan (DOE/RI-96-22).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	116-B-15	Classification:	Accepted
Names:	116-B-15; 105-B Fuel Storage Basin Cleanout Percolation Pit; 105-B Fuel Storage Discharge Pond; 105-B Pond	Reclassification:	No Action (12/8/2003)
Type:	Pond	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1985
Description:	This site has been evaluated and determined to meet remedial action objectives. The evaluation and sampling results support the reclassification to No Action. The unit was a large, open, excavated pit, rectangular in shape. The site was used from November 1984 to December 1985.		
Location:	The site was located east of the 105-B Reactor Building.		
Process Description:	During the cleaning of the 105-B Fuel Storage Basin, the radiologically contaminated shielding water was processed through a system that utilized ion exchange columns. Before the water was discharged to this site, composite samples were taken to ensure that radionuclide concentrations were below release criteria.		
Related Sites/ Structures:	The site received processed water from the 105-B Fuel Storage Basin.		
Waste Type:	Water		
Waste Description:	The unit received processed water from the 105-B Fuel Storage Basin. During the cleaning of this basin, the radiologically contaminated shielding water was processed through a system that utilized ion exchange columns. Before discharging the water to the unit, composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. No known chemical substances were present in the water; however,		

chemical analysis during that period was not a standard practice, and there is no evidence that it was performed.

Closure Info: This site has been evaluated and determined to meet remedial action objectives. The "no action" reclassification was supported by a review of the site history, an extensive site evaluation, confirmatory soil sampling and the site reclassification form (control number 2003-052) with a supporting documentation package. The current site soil conditions achieve the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units.

Verification samples, including QA/QC samples were collected and analyzed for the established contaminants of potential concern (COPCs) on August 8, 2003. The COPCs consisted of metals, hexavalent chromium, polychlorinated biphenyls, and radionuclides.

Residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River.

Code: 116-B-16	Classification: Accepted
Names: 116-B-16; 111-B Fuel Examination Tank	Reclassification: Interim Closed Out (5/17/2000)
Type: Storage Tank	Start Date:
Status: Inactive	End Date: 1/1/1968

Description: This site has been remediated and closed out. The unit was a vegetation free, cobble-covered field located within a barricaded area at the former site of the 111-B Building. The floor, foundation, and tank were the only remaining portions of the building. The fuel examination tank was located along the west side of the barricaded area. A curved, capped ventilation pipe extended about 25 centimeters (10 inches) above ground just north and east of the tank location. The barricaded area was surrounded by light duty steel posts with light duty chain and has been posted with "Caution: Underground Radioactive Material" signs. The tank was constructed of concrete. It is believed that the tank was filled with either sand or concrete before the site was abandoned.

Location: The site is located below the northwest corner of the 111-B Metallurgical Examination Building floor, southeast of the 105-B Reactor Building, adjacent to 116-B-6A, and within the 105 B/C Exclusion Area.

Process Description: The 116-B-16 Fuel Examination Tank, was a low-level liquid waste disposal site that was operational during the lifetime of the 111-B Metallurgical Examination Building. The tank received liquid wastes from the decontamination of fuel element spacers and other equipment as well as from other 111-B Building activities.

Related Sites/ Structures: The site was associated with the 111-B Metallurgical Examination Building.

Waste Type: Process Effluent

Waste Description: The unit is believed to have received wastes similar to those identified in 116-B-6A (111-B Crib No. 1); i.e., radioactive waste from equipment decontamination, the 111-B Building, and liquid wastes from fuel element spacer decontamination.

Closure Info: 116-B-6A and 116-B-16 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package for the 116-B-6A Crib and 116-B-16 Fuel Examination Tank, because of their close proximity to each other and similar contaminants of concern (COCs), were excavated as one remedial action site and are hereinafter referred to as the 116-B-6A/116-B-16 site.

At the completion of the remedial action, the total excavation was approximately 603.5 meters squared (6,496 square feet or 0.15 acres) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 5,072 metric tons (5,591 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. The excavation will be backfilled in the near future (written June 6, 2000) with appropriate materials to the reference grade El. 146 meters (479 feet).

Results of the sampling, laboratory analyses, and data evaluations for the 116-B-6A/116-B16 site indicate that all remedial action objectives and goals for direct exposure, protection of ground water, and protection of the Columbia River have been met. However, this site close out includes a deed restriction against drilling or digging into the deep zone soils (below 4.6 m [15 ft] depth).

Code:	118-B-5	Classification:	Accepted
Names:	118-B-5; Ball 3X Burial Ground	Reclassification:	Interim Closed Out (5/24/2004)
Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	The site has been remediated and interim closed out.		
Location:	The burial ground was located east of the 115-B Gas Recirculation Building.		
Process Description:	This burial ground received irradiated equipment and metallic wastes removed from the 105-B Reactor during the Ball 3X Project. The 118-B-5 (Ball 3X) Burial Ground contained one trench, which was covered with 1.5 meters (5 feet) of soil after its use was discontinued. The site appeared as a vegetation free "L" shaped mound of cobbles, about 0.9 meters (3 feet) high, that was surrounded by permanent concrete markers and was outside the reactor exclusion area. The long south side of the burial ground was about 4.6 meters (15 feet) from a section of the reactor exclusion area fence that ran from north to south. The west side was about 6.1 meters (20 feet) from the fence. The site was posted with signs reading "118-B-5 Ball 3X Burial Grounds".		
Waste Type:	Equipment		
Waste Description:	The unit received 40.00 cubic meters (1410 cubic feet) of highly contaminated metallic wastes, including thimbles and step plugs that were removed from the 100-B Reactor during the performance of work for the Ball 3X project. The Ball 3X project replaced the liquid boron system for emergency reactor control with a system using solid boron-steel and carbon-steel balls. Potential contaminants include: C-14, Co-60, Ni-63		
Closure Info:	The cleanup verification package (CVP), CVP-2004-00003, documented that the 118-B-5 Ball 3X Burial Ground site was remediated in accordance with the Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds ROD) (EPA 2000) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2002). The preferred remedy specified in the 100 Area Burial Grounds ROD and conducted for the 118-B-5 site was excavation, treatment as necessary, and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF).		

For the respective points of compliance, remedial action goals (RAGs) were established to

identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge are listed in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE RL 2001).

The COCs for this site consisted of the following: carbon-14, cobalt-60, nickel-63. Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern. Seven shallow zone samples (J01724 through J01729 and J01731) were collected on January 16, 2004. Seven Staging Area samples (J01718 through J01723 and J01730) were collected on January 16, 2004. All of the sample results are in the HEIS database.

At the completion of the remedial action, the total excavation was approximately 753 square meters (8,101 square feet) in area for the shallow zone and approximately 3,419 square meters (37,783 square feet) in area for the staging pile area, with a burial ground depth of approximately 4.8 meters (15.7 feet). Approximately 5,046 metric tons (5,563 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. Excavation during remediation of the site found only miscellaneous debris associated with the Ball 3X Project and lead solids.

Results of the sampling, laboratory analyses, and data evaluations for the 118 B-5 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

CVP-2004-00003 demonstrated that remedial action at the 118-B-5 Burial Ground has achieved the RAOs and corresponding RAGs established in the 100 Area Burial Grounds ROD (EPA 2000) and RDR/RAWP (DOE-RL 2002). The remaining soils at the 118-B-5 Burial Ground (including the staging pile area) have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 118-B-5 Burial Ground containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF.

The results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. Shallow zone soil cleanup criteria have been applied to the entire vadose zone underlying the 118-B-5 excavation; institutional controls against drilling or digging are not required for this site.

Code:	118-B-9	Classification:	Accepted
Names:	118-B-9; 104-B-1 Tritium Vault and 104-B-2 Tritium Laboratory; 104-B2 Storage Building	Reclassification:	No Action (7/15/2004)
Type:	Storage	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1955
Description:	The site is a gravel-covered field. The site consisted of two concrete masonry facilities identified as 104-B-1 Tritium Vault and 104-B-2 Tritium Laboratory. Both structures were demolished and their associated foundations removed to 1 meter (3 feet) below grade. The excavated areas were then backfilled and graded to match the existing terrain. Demolition took place beginning in mid-September 1996 and was completed in October 1996.		
Location:	The site was located in the extreme northwest corner of the 105-B Exclusion Area. The 104-B-2 Product Storage Building was located immediately northwest of the 91.4-meter (300-foot) 108-B Stack. The 104-B-1 Tritium Vault was located due north of the 103-B Building and just outside the fence for 103-B. Both structures have been demolished.		
Release Description:	There have been no known unplanned releases from these facilities.		
Process:	The 104-B-1 Tritium Vault had a concrete foundation and concrete block walls. The 104-B-2		

Process Description:	Tritium Laboratory was also a concrete structure with a small steel framed transite sided annex located on the east end. The Tritium Laboratory contained sixty-three (63) special cells recessed in the laboratory floor. These were used to store the vacuum casks which contained the irradiated target elements for the P-10 Project. The 104-B-2 Tritium Laboratory annex housed the air sampling equipment for the 108-B Stack. In the P-10 program, irradiation of lithium-aluminum fuel targets, took place in the 105-B, H and F Reactors. The irradiated fuel targets were put in special vacuum casks and taken to the 104-B-2 Tritium Laboratory where they were put into special storage wells. The vacuum casks were then moved to the 108-B Tritium Separations Facility and charged into a furnace with an inert atmosphere and a stainless steel furnace tube connected to a complex series of glass tubing and flasks fitted with palladium valves. As soon as the furnace was charged, the entire line was pumped down to an extremely high vacuum to remove impurities, and the furnace was out gassed to drive off absorbent gases. At that point, the actual extraction began. The furnace temperature was raised until all of the tritium gas had been driven from the irradiated targets, and the gas was drawn down the glass lines, through palladium valves, and collected in shipping flasks. These shipping flasks were stored in storage racks located on the north and south walls of the 104-B-1 Tritium Vault, prior to use. Prior to demolition, the laboratory had been deactivated, posted as radiologically contaminated, and used to store contaminated reactor refueling components from the 105-B and 105-C Reactors.
Related Sites/ Structures:	The two facilities (104-B-1 and 104-B-2) were related to each other (both supported the P-10 Project). The 104-B-2 Facility was related to 108-B, Tritium Separations Facility. The 104-B-2 Facility housed the air sampling equipment for the 108-B Stack. These two facilities were connected through a vent pipe leading from the 108-B Stack to 104-B-2 Tritium Laboratory (annex). Photograph (83E17058CN) 100 Area, 104-B-2, View of the 104-B-2 Tritium Lab from the roof of 108-B, shows the vent line that went from the 104-B-2 Tritium Laboratory to the 108-B, Tritium Separations Facility. A french drain, identified as the 116-B-9 French Drain, was associated with this unit (104-B-2). This site is located at the east end of the 104-B-2 Tritium Laboratory (the end containing the annex that housed the air sampling equipment for the 108-B stack). Drawing H-1-2659 shows a french drain associated with this facility. BHI-00835 states that no evidence of the french drain was found when the team performed the walkthroughs (prior to demolition of 104-B-2) or when the vent line from the storage cells to the 108-F Stack (demolished in the 1980's) was opened and surveyed. No french drain was identified during demolition. Ground Penetrating Radar (GPR) surveys were performed in 1994 and 1996 identified an anomaly consistent with the shape of a french drain. In preparation for sampling the french drain, the site has been located and uncovered. Site 116-B-9 has photo images (#2 and #3) of the exposed french drain. Early WIDS documentation states that the french drain was not visible from the surface
Waste Type:	Demolition and Inert Waste
Waste Description:	Following demolition activities, 0.7646 cubic meters (1 cubic yard) of miscellaneous metal from the two buildings was taken and staged with the 190-C recycle material.
Waste Type:	Demolition and Inert Waste
Waste Description:	Lead based paint was found on the roof trim, vents, and exterior doors. Following demolition activities, 0.7646 cubic meters (1 cubic yard) of lead base painted wood was disposed to an offsite vendor's container (where other 100-B/C small buildings hazardous waste was temporarily stored). This material was identified as number 200E-96-0015 and was packaged in a Laidlaw box and shipped offsite to Laidlaw Lone Mountain Facility on Manifest A6344 on 12/9/96.
Waste Type:	Demolition and Inert Waste
Waste Description:	The building was constructed of concrete block and the foundation was concrete. Following demolition activities, 110 cubic meters (144 cubic yards) of concrete rubble was disposed of in the 100-F Clearwell.

Waste Type: Demolition and Inert Waste

Waste Description: The facility (104-B-1) contained asbestos, consisting of caulking around exterior vents. Following demolition activities, 0.92 cubic meters (1.2 cubic yards) of non-friable cement asbestos board (CAB) were put into a dumpster and hauled away. The material was then shipped to Basin Disposal, Pasco for eventual disposal in the RABANCO landfill, Roosevelt, WA.

Total asbestos material identified was non-friable Category I: asphalt roofing 55 square meters (592 square feet), non-friable Category II: joint caulking 1.21 square meters (13 square feet), non-friable Category II: transite wall board 63.92 square meters (688 square feet). The total category I was 55 square meters (592 square feet) and Category I was 65.13 square meters (701 square feet).

Waste Type: Equipment

Waste Description: The unit (104-B-2) contained trace amounts of radioactive waste. It was used to store containers of reactor refueling components from 105-B and 105-C Reactors. No liquid contaminants were involved. Bird droppings were also found in small quantities.

Following demolition activities, two 1.2 by 1.2 by 2.44-meter (4 by 4 by 8-foot) plywood burial boxes equivalent to 7.25 cubic meters (9.5 cubic yards) were taken to a burial ground. The burial boxes have numbers 100B-96-0002 and 100B-96-0017 and were shipped on 12/3/96 to burial ground 218-W-5, trench 29.

Closure Info: The two facilities were characterized and a Final Characterization Report (Encke and Harris 1996) was generated to document the results. A Readiness Evaluation was conducted jointly for both buildings on August 19, 1996. A hazard classification determination was made of 'industrial' for both buildings (Little 1996; Larson 1996). A Cultural Resource Review (Teel 1996) was performed, as was a Biological Review (Teel 1996). Both showed no impact to the demolition process. Work was performed in compliance with National Environmental Policy Act (NEPA). A categorical exclusion was generated for 104-B-1 and 104-B-2 (BHI 1996). The two buildings were characterized, and a Final Characterization Report (Encke and Harris 1996) was generated to document the results. The structures were prepared for Decontamination and Decommissioning (D&D) by first removing all materials from within the buildings. Utility isolations for electrical, water, and phone were completed. The minor areas of radiological contamination were removed from the 104-B-2 Tritium Laboratory through use of nonintrusive means. The decontaminated areas were survey released. Nonfriable transite panels were removed intact and the waste generated was segregated. Lead-based painted building trim, wood and metal was removed from the buildings and segregated for separate disposal. A track-hoe was used to demolish the building structure, assisted by the use of a hydraulic impact hammer mounted on a tractor. Following sorting and segregation of the building debris, the building foundations were excavated and demolished to 1 meter (3 feet) below grade. Clean rubble from the structures and the associated foundations were then taken to, and disposed at the 100-F Clearwell on the Hanford Site. The lead-based painted wood was segregated from the rest of the debris and disposed by a subcontractor through the use of a "lugger", or dumpster.

During excavation of the foundations, courtesy surveys were made by the Health Physics organization to verify that no residual contamination existed in the footings or soil proximate to the foundations. No contamination was found.

The 2004 Remaining Sites Verification Package attached to the reclass form 2004-004 stated that the September 2003 confirmation soil sampling results supported a no action reclassification of the site.

The site sample results demonstrated that the site had achieved remedial action objectives and

remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units, commonly called the Remaining Sites Record of Decision (EPA 1999). These results showed that residual concentrations will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations supported unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone, therefore, no deep zone institutional controls are required.

Code: 118-B-10 **Classification:** Accepted
Names: 118-B-10; Ball 3X Storage Vault **Reclassification:** Interim Closed Out (5/24/2004)
Type: Storage Tank **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and interim closed out. Before remediation, the location of this burial ground showed as a concrete pad with a metal marker at the ground surface in a gravel field. It was otherwise unmarked. In November 2001 the site appeared as a vegetation-free area that had been covered with cobbles piled to 0.6 meters (2 feet) above grade. However, this location was wrong. As shown on Drawing H-1-19820 and confirmed by ground-penetrating radar (GPR), the mound of cobble is backfill over a process sewer that was constructed over the ventilation tunnel to 115-B. The pipeline had to be close to the surface because of the tunnel, so it was encased in concrete and covered with 18 inches of backfill.

Location: This site was south of the 105-B Reactor. See the photos for the top of this feature that is at ground level.

Process Description: The site was a metal tank used to store highly radioactive balls.

Waste Type: Equipment

Waste Description: The waste is a radioactive metal storage tank used to store radioactive boron balls from the ball 3X system.

Closure Info: The cleanup verification package (CVP), CVP-2004-00004, documented that remedial action at the 118-B-10 Burial Ground had achieved the RAOs and corresponding RAGs as established in the Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds ROD) (EPA 2000) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL- 96-17, Rev. 4).

The site was remediated on December 1 and 2, 2003. Waste site COCs identified through process knowledge and listed in Appendix A of the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE RL 2001) included: cobalt-60, nickel-63, arsenic, barium, cadmium, total chromium, mercury, selenium and silver.

Shallow zone verification samples were collected on January 14, 2004. Staging pile area samples were collected on January 14, 2004. Although lead was not a COC for the burial ground, lead solids were found during the excavation effort and a focused sampling effort was performed on January 19, 2004 to demonstrate that underlying soil had not been impacted. The focused sampling included analyses for several additional contaminants of potential concern (COPCs). None of these COPCs were encountered at concentrations above the RAGs. Therefore, they were not added to the list of COCs for the site.

At the completion of remedial action, the excavation was approximately 137 meters squared (1,475 square feet) in area with an average depth of approximately 3.21 meters (10.5 feet). Approximately 266 metric tons (293 tons) of material, including soil and burial ground debris, were removed from the site and disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met. Shallow zone soil cleanup criteria have been applied to the entire vadose zone underlying the 118-B-10 excavation; therefore, no institutional controls against drilling or digging are required for this site.

Code: 120-B-1	Classification: Accepted
Names: 120-B-1; 105-B Battery Acid Sump	Reclassification: Interim Closed Out (9/25/2006)
Type: Sump	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1969

Description: The site has been remediated and interim closed. The sump and underlying soils were removed on June 13, 2006. The site was backfilled with clean soil from the 100-B Area borrow pit.

Location: The site was located west of the 105-B Building adjacent to the main switchgear room.

Process Description: The battery acid sump was a standard limestone acid neutralization pit. It was used from approximately 1944 to 1969 to neutralize the spent sulfuric acid from lead cell batteries of emergency power packs and the emergency lighting system. The neutralized battery acid waste (containing calcium sulfate, metal sulfates, and water) was periodically jetted out to the process sewer. The sump was designed as a concrete box with hinged metal covers. During a site visit it was observed that concrete repairs had been made to each of the four corners. The repairs suggested that the integrity of the structure may have been compromised, creating the potential for leakage to the surrounding soils.

Related Sites/ Structures: The sump was located on the northwest corner of 118-B-8 (105-B Reactor).

Waste Type: Chemicals

Waste Description: The site contained unknown amounts of sulfuric acid from spillage during use and servicing of an emergency power battery bank inside the 105-B Building. The residual liquid and sludge were analyzed for heavy metals in 1986 using the EP Toxicity Test and chromium was found.

Closure Info: The Remaining Sites Verification Package (RSVP-2006-057) documents that the remediated waste site meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

When the sump was cleaned out in 1986, the residual limestone was removed and both the solution section (south end) and the solids (limestone) section (north end) were flushed with water and jetted out to the process sewer using the sump's water-operated eductor. Both sections of the concrete box were lined with acid-resistant brick including the partition between the two sections. The air and water supply to the sump (air sparger and water eductor) were shut off. The sump contained a 10-centimeter (4-inch) waste inlet pipe from the 105-B Building; it was located in the south wall of the sump about 50.8 centimeters (20 inches) below the metal access doors. The outlet pipe was located near the top of the west wall of the northern

section of the sump.

In support of confirmatory sampling, the sump was opened in March 2003. Standing water was observed in both sections of the sump. Due to the presence of corrosive water in the sump and the results of confirmatory sampling, it was determined that remedial action was necessary. The site was remediated to an approximate depth of 3 meters (10 feet) below grade in June 2006, sampled, and then backfilled with clean material. The inlet and outlet pipelines associated with the Sump were sampled but were not included as part of the closeout for the 120-B-1 waste site. The inlet and outlet pipelines were grouted and are included as a subsite within the 118-B-8, 105-B Reactor Building waste site.

Remedial contaminants of potential concern (COPCs) were identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP). They included silver, cadmium, total chromium, mercury, lead, selenium, and sulfate. Radionuclides were not listed as COPCs in the SAP; however, gross alpha, gross beta, and gamma spectroscopy analyses were performed on all samples because of the proximity of the battery acid sump to the 105-B Reactor Building.

Confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency, and the results were compared against the cleanup criteria specified in the RDR/RAWP. The results were stored in the Environmental Restoration (ENRE) project-specific database prior to submitting for inclusion in the Hanford Environmental Information System (HEIS) and were included in Appendix A of the RSVP. On June 1, 2006, the standing water present in the sump (approximately 6,400 Liters [1,700 gallons) was treated with lime to adjust the pH and removed.

On June 13, 2006, the remainder of the site (consisting of the sump structure) was excavated and removed along with a small volume of soil directly in contact with the sump. The site was excavated to a maximum depth of 3.0 m (10 ft) below ground surface in order to preclude any potential impact to the integrity of the 105-B Building walls and nearby transformer pad. The pipelines were removed to the extent of the excavation boundaries and grouted prior to backfilling. The site was backfilled immediately following the verification sampling with clean backfill material from the 100-B Area borrow pit. Approximately 32 bank cubic meters (42 bank cubic yards) of material was excavated and disposed at the Environmental Restoration Disposal Facility.

The results of verification sampling illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls were required. The pipelines associated with the battery acid sump were not included as part of the 120-B-1 waste site. Instead the pipelines were included as a subsite within the 118-B-8, 105-B Reactor Building, waste site.

Code: 126-B-2	Classification: Accepted
Names: 126-B-2; 183-B Clearwells	Reclassification: No Action (3/20/2007)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The site has been evaluated and reclassified to No Action. The site consisted of two underground concrete reservoirs, or clearwells, separated in the center by the remains of a demolished pump room. A concrete piping structure was located above ground at the southeast corner of the clearwell site.	

Location: Facility and southeast of the 182-B Retention Basin.

Process Description: This site was part of the 100-B Water Treatment Facility. River water stored in the 182-B Retention Basin was transferred sequentially to the 183-B Head House for chemical additions, then to flocculation and sedimentation basins, through anthracite filters, and finally into the clearwells. The 183-B Filter Pump House then fed most of the stored potable water to the 185/190 B facilities, which provided final treatment and storage before use as cooling water for the 105-B Reactor. The pump room was constructed of concrete and was approximately 6.7 meters (22 feet) below grade. The remaining portion of the pump house contained debris from the demolition of the above-ground portion and was believed to include steel, concrete, and asbestos-containing siding (transite). The clearwells were each 1.9E+7 liter (5E+6 gallon) concrete rectangular boxes, with flat concrete roofs. The concrete roofs were surmounted by an above-grade water-resistant roof, which may have been made of asbestos-containing materials in asphalt-saturated board, covered by tarred felt. Water stored in the 183-B Clearwells would have contained additives from the flocculation and sedimentation steps that occurred at the 183-B facility. Chlorine, sulfuric acid, alum, ferric sulfate, Sepran® O 1 (a coagulant), and lime were used in the treatment process. After the filtration step, the additives and any trace contamination from the additives would have been very dilute in the treated water. The Clearwells were upstream of sodium dichromate additions and of the 105-B Reactor. There was no evidence to suggest that the water stored in the clearwells ever contained sufficient quantities of radionuclide or nonradionuclide hazardous chemicals to present a human health risk.

Related Sites/ Structures: This unit was part of the 100-B Water Treatment Facility.

Waste Type: Demolition and Inert Waste

Waste Description: No waste was deposited at the clearwells in the past. However, this unit is scheduled for future use as a disposal site for demolition and inert solid waste after the 126-B-3 Coal Pit and demolition landfill is closed. The remaining portion of the pumphouse currently contains waste from the demolition of the above ground portion. These wastes were believed to include steel, concrete, and asbestos transite.

Closure Info: Reclassification to No Action decision for the 126-B-2, 183-B Clearwells waste site was documented in the Remaining Sites Verification Package (RSVP) RSVP-2007-004. Evaluation of the site history and process knowledge, along with field observations of the site was used to make reclassification decisions in accordance with the TPA-MP-14 procedure. The current site conditions have also achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 1004U-6, and 200-CW-3 Operable Units, Hanford Site, (Remaining Sites ROD).

The No Action determination precluded the need for sampling at this site; therefore, a comparison between soil data and ecological screening levels was not necessary. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which included a comprehensive ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

On September 15, 2005, a meeting among the Washington Closure Hanford (WCH) Field Remediation Closure Project, the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Energy, Richland Operations Office (DOE-RL) was conducted to discuss a path forward for the 126-B-2 Clearwells and the 100-B-22, 100-B Water Treatment Facilities and Surrounding Soils. Background information presented to facilitate the discussion included a description of the water treatment facilities, the 126-B-2 Clearwells, and current information from the 100-B-14 excavations occurring in the area. The status of pipelines in the immediate

area of the 126-B-2, 183-B Clearwells was also presented. The parties agreed that not all of the pipelines in the area were part of the 183-B Clearwells waste site. Their decision that the pipelines belonged to 100-B-14, the 100-B-28, or the 100-B-22:1 waste sites was based on the General Electric Drawing H-1-13050 and Hanford Engineering Works 1944 drawing W75014, Rev. 8.

It was further discussed that under the original and final configurations of the water treatment facilities, sodium dichromate was added to the process water downstream of the Clearwells in the 190-B facility. Therefore, water in the Clearwells would not have been expected to contain hexavalent chromium or radionuclides, even at low concentrations. The 100-B-28 pipeline appeared to have transferred sodium dichromate solution from the 100-C Area to the 183-B Pumphouse.

The evaluation concluded that no contamination or suspected contamination was associated with the waste site. No remedial action was required for this site. Based on remedial action objectives established in the RDR/RAWP and the Remaining Sites ROD, the evaluation does not preclude any future uses (as bounded by the rural-residential scenario) and allows for unrestricted use of shallow and deep zone soils; no deep zone institutional controls were required.

Code:	126-B-3	Classification:	Accepted
Names:	126-B-3; 184-B Coal Pit	Reclassification:	Interim Closed Out (8/8/2006)
Type:	Dumping Area	Start Date:	1/1/1943
Status:	Inactive	End Date:	1/1/1968
Description:	The site has been remediated and interim closed. The site consisted of a pit originally excavated to store coal for use in the 184-B powerhouse from 1943 through 1968. After coal storage was discontinued, the site was used as a demolition landfill.		
Location:	The site was located just west of the 184-B Power House (demolished) and northeast of the 182-B Pump House and Reservoir.		
Process Description:	The site was used for coal storage from 1943 to 1968. Beginning in the early to mid 1970's, the site was used as a dumping area (burial ground) for demolished 100B/C Area facilities. The decommissioning of the 108-B building was completed in May 1985. All the above-grade portions of the building were demolished to a minimum of 3 meters (10 feet) below grade. The clean rubble and debris were disposed in the 184-B Coal Pit.		
Related Sites/ Structures:	The site was associated with the 184-B Power House and 100-B-27 Chromium-contaminated Soil.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	This unit contains waste from demolished 100-B Facilities. These include released portions of 108-B, 117-B, 117-C, 115-BC, and 184-B. This unit is likely to contain lead acid batteries. There are aluminum filter frames from the 117-B and 117-C Facilities on the surface on the south side. Steel staircases and ladders have been deposited on the surface on the northeast side of the site.		
Closure Info:	The Remaining Sites Verification Package, (RSVP-2005-028) documents that the waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).		

A confirmatory focused sampling event was conducted in March 2003 to collect and analyze for contaminants of potential concern (COPCs). Initially, the COPCs were identified based on existing historical information. However, the 2003 confirmatory sampling of suspect hazardous materials and underlying soils detected asbestos, arsenic, barium, cadmium, chromium (total), lead, selenium, silver, mercury, pesticides, PCBs, SVOCs, volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPHs). Multiple metals, pesticides, polycyclic aromatic hydrocarbons (PAHs), and TPH were also detected above direct exposure RAGs and/or soil RAGs for the protection of groundwater and/or the Columbia River in confirmatory samples. PCB-containing debris materials were also discovered in soil samples during excavation.

Initial remediation of the burn pit area was performed from September 4 to September 17, 2003; removing approximately 43,100 bank cubic meters (56,400 bank cubic yards) of material. The remediation consisted of the removal of suspect hazardous material and impacted soils within the disposal pit to depths of up to 7 meters (23 feet). Material removed included batteries, lead bricks, rubber gaskets, a compressor, metal scrap, concrete rubble, miscellaneous asbestos-containing material, ash, and contaminated soil.

After this remediation, an area of chromium-contaminated soil was identified in the northern portion of the western staging area. It was unrelated to waste staging or historical disposal activities at the site. This area was classified as a discovery site and designated as the 100-B-27 Chromium-Contaminated Soil waste site and was not considered within the closeout documentation of the 126-B-3 waste site.

Verification soil sampling within the remediation and staging pile footprints was conducted on April 15, 2005, and August 9, 2005. The results indicated that the waste removal action achieved compliance with the remedial action objectives for the 126-B-3 remediation footprint, but that additional material removal was required at the eastern staging pile footprint due to hexavalent chromium contamination. Following the removal of an additional 4,640 bank cubic meters (6,060 bank cubic yards) of material, including a suspect drywell discovered within the staging pile footprint, the additional removal brought the total material removed to approximately 47,740 bank cubic meters (62,440 bank cubic yards) of soil and debris disposed at the ERDF.

To verify the completeness of remediation, additional statistical and focused verification sampling was performed on February 7 and 14, 2006. Analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification of the site to interim closed out. The laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to providing to the Hanford Environmental Information System (HEIS) and are summarized in Appendix A of the RSVP.

The results of final verification sampling illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural residential scenario) and allow for unrestricted use of shallow zone soils [i.e., surface to 4.6 meters (15 feet) deep]. Deep zone portions of this site meet the direct exposure cleanup criteria for the rural-residential scenario; therefore, no deep zone institutional controls are required.

Code: 128-B-2	Classification: Accepted
Names: 128-B-2; 100-B Burn Pit #2	Reclassification: Interim Closed Out (12/21/2005)
Type: Burn Pit	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1968
Description: The site has been remediated and interim closed out. The site covers a large area, covered in	

places with gravel and vegetation.

Location: The site was located east of the northeast corner of the 100-B Area, north of Route 1. The site was on the north side of an east-west dirt road that connects to Route 1.

Waste Type: Misc. Trash and Debris

Waste Description: The site received nonradioactive, combustible materials. Old paint cans and sandblast sand can still be seen at the site. Office waste, paint waste, chemicals, and solvent were burned at this site. It appears that clean fill material has been added to the site, indicating that the site may have also been used as a solid waste landfill.

Closure Info: The REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-2, 100-B BURN PIT #2 WASTE SITE (Attachment to Waste Site Reclassification Form 2005-038) report demonstrated that the waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).

The 128-B-2 Burn Pit also referred to as 100-B Burn Pit #2, was historically used for the disposal of combustible and noncombustible waste. The operational use of the Burn Pit was not completely known it was used as a burn pit for office and paint wastes, chemicals, and solvents. Landfilled noncombustible material, including concrete and metallic debris, was also discovered during remediation of the site. The presence of garnet sand also suggests that sandblasting activities may have been performed at this site.

The contaminants of potential concern (COPCs) for the 128-B-2 site were identified based on existing historical information for the site. The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included polychlorinated biphenyls, pesticides, semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPHs), volatile organic compounds (VOCs), asbestos, silver, barium, cadmium, chromium (total), hexavalent chromium, mercury, lead, and selenium. As a result of further evaluation of the site history, arsenic and asbestos were also included as COPCs. Gross alpha, gross beta, and gamma energy analyses were also performed on samples to evaluate the potential presence of radionuclide contaminants.

Confirmatory samples, too numerous to list, were analyzed and the results were compared against the cleanup criteria. The sample results are stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System and may be found in Appendix B of the RSVP 2005-038, including laboratory results for additional waste characterization analyses.

The results of the verification sampling illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 128-B-3	Classification: Accepted
Names: 128-B-3; 128-B-3 Burning Pit Site; 128-B-3 Coal Ash and Demolition Waste Site; 600-57; 100-B Dump Site	Reclassification: Interim Closed Out (11/17/2006)
Type: Burn Pit	Start Date: 1/1/1944

Status: Inactive**End Date:** 1/1/1968

Description: The site has been remediated and reclassified, however institutional controls are to be maintained on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river. Institutional controls will be maintained until such time that the results of a baseline risk assessment can be considered (for a final site remedy, closure). The 128-B-3 Coal Ash and Demolition Waste Site is an area where dumping and burning of waste material had occurred. The site was visible in a 1968 aerial photo and appeared to have been divided into a construction debris dumping area to the south and a combustible waste burning area to the north. The site was separated into the two sections by an ash covered roadway. At the site's southern edge was an area of vegetation-free gravel, covered with what was described as a "white-colored spray".

Location: This site was northeast of the northeast corner of the 100-B perimeter road on the plateau above the river shoreline.

Waste Type: Misc. Trash and Debris

Waste Description: Coal ash, burning evidence, and demolition rubble can be seen at the surface of the site. A 1952 shop manual was found among the waste.

Closure Info: The Remaining Sites Verification package, (RSVP-2006-058) demonstrates that the 128-B-3 waste site has met the Remedial Action Objectives (RAOs) and Remedial Action Goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The waste site, located immediately adjacent to the Columbia River, was formerly used as a disposal site for the 100-B/C Area. Site history indicates that the site was used for the dumping and burning of miscellaneous wastes, including office waste, paints, solvents, coal ash, and demolition debris.

The COCs and COPCs for verification sampling were determined in consideration of in-process and waste characterization sampling results and the COCs/COPCs identified for similar burn pit waste sites. Residual concentrations of metals (including hexavalent chromium), SVOCs, chlorinated pesticides, TPH, PCBs, and asbestos within the remediation and general waste staging footprints were evaluated for site closure. The COCs/COPCs for the tar waste staging pile footprint were the same as for the remediation footprint, but COCs/COPCs at the lead and asbestos waste staging pile footprints were restricted to metals and asbestos, respectively. The process history for the 128-B-3 site does not suggest the presence of radiological contamination, and radiological activity was not detected by field screening during site remediation. Therefore, radionuclides were not considered COPCs for the site.

Remediation of the site was performed from November 2004 to May 2006, consisting of the removal of approximately 21,000 BCM (bank cubic meters) (27,500 BCY [bank cubic yards]) of material from four former disposal pits, the river embankment, and the upland surface to disposal at the Environmental Restoration Disposal Facility. Initial remedial efforts at the upland area of the site were extended to include the river embankment following the results of geophysical investigation and focused sampling of visible debris at the embankment. Multiple chemical contaminants were detected above action levels in the in-process and waste characterization samples, including metals, hexavalent chromium, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons (TPH), pesticides, and polychlorinated biphenyls.

Following site remediation, final verification sampling of remediation and waste staging pile footprints was conducted from June 2006 to August 2006. The results indicated that the waste removal action achieved compliance with the RAOs and the Remaining Sites ROD, except at

the river embankment area. Residual concentrations of metals, TPH, and aroclor-1254 slightly exceeded soil RAGS for protection of groundwater and the Columbia River at this location. However, further remediation activities to remove trace remaining contamination are likely to inflict greater environmental damage than leaving said contamination in place. The results for the entirety of the site show that residual contaminant concentrations do not exceed cleanup levels for direct exposure (i.e., ingestion of the soil). Statistical and judgmental sampling to verify the completeness of remediation was performed, and analytical results for upland areas were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Analytical results for the remediated river embankment were shown to meet the cleanup objectives for direct exposure and to not significantly exceed soil RAGs for protection of groundwater and the Columbia River.

Accordingly, an interim closure reclassification is supported for the site, with imposition of institutional controls on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river. Institutional controls will be maintained until such time that the results of a baseline risk assessment can be considered (for a final site remedy, closure).

The remainder of the site does not have a deep zone or residual contaminant concentrations that would require any institutional controls. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 in [15 ft] deep). The results also demonstrate that residual contaminant concentrations are sufficiently protective of groundwater and the Columbia River to preclude further remedial action.

Code:	132-B-1	Classification:	Accepted
Names:	132-B-1; 108-B Tritium Separation Facility	Reclassification:	No Action (3/1/2004)
Type:	Process Unit/Plant	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1975
Description:	This site has been evaluated and determined to meet remedial action objectives. The evaluation and sampling results support the reclassification to No Action. The site is now a flat cobble field.		
Location:	The building was located north of 105-B.		
Related Sites/ Structures:	The 108-B Dry Well was left undisturbed. The drain line to the 108-B Crib was removed to a point south of the entrance road and capped.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The main radionuclide present at the site is tritium.		
Closure Info:	The Waste Site Evaluation for 132-B-1, 108-B Tritium Separation Facility (Calculation No. 0100B-CA-V0126) (BHI 2003), demonstrated that historical data was of sufficient quality and quantity to support a no action reclassification of the 132-B-1 site. The site achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2002), and the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).		

Verification samples of paint, floor tile, and concrete were collected and analyzed in June 16, 2003. All results were less than 20 pCi/g beta/gamma and less than 1pCi/g alpha.

Any residual concentrations will support future land uses that can be represented (or bounded)

by a rural-residential scenario, and that based on RESidual RADioactivity (RESRAD) modeling, residual concentrations at the site pose no threat to groundwater or the Columbia River.

Code: 132-B-3	Classification: Accepted
Names: 132-B-3; Ventilation Exhaust Stack Site; 108-B Tritium Pilot Facility; 108-B Ventilation Exhaust Stack Site	Reclassification: No Action (12/8/2003)
Type: Burial Ground	Start Date:
Status: Inactive	End Date:
Description: This site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification to No Action. The site consisted of a trench, which was used to bury low-level contaminated rubble from the demolition of the 108-B Ventilation Exhaust Stack, also known as the 108-B Tritium Pilot Facility Ventilation Exhaust Stack. The trench was 9.1 meters (30 feet) wide, 5.5 meters (18 feet) deep, and 76 meters (250 feet) long. The stack foundation was found to be free of contamination. It was destroyed separately, buried in place and covered with clean fill material. Although it was on the opposite side of the road, it was considered to be part of this site.	
Location: The burial trench was north of 105-B, west of 108-B Crib, across the road from the stack foundation site.	
Waste Type: Demolition and Inert Waste	
Waste Description: The 91-meter (300-foot) stack was demolished in 1983 and buried at this site. The stack was built of reinforced concrete and had a stainless steel liner. The total radionuclide inventory of the buried stack rubble is 21 millicuries.	
Closure Info: In 2003 a waste site evaluation (0100B-CA-V0127) was done. The evaluation and historical data support reclassification to "No Action" as documented in the attached reclass form, control number 2003-11. It was determined that the site had achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESidual RADioactivity (RESRAD) modeling.	

Code: 132-B-4	Classification: Accepted
Names: 132-B-4; 117-B Filter Building	Reclassification: No Action (4/2/2003)
Type: Process Unit/Plant	Start Date: 1/1/1961
Status: Inactive	End Date: 1/1/1968
Description: Historical data compiled for the Calculation Brief number 0100B-CA-V0128 was of sufficient quality and quantity to support reclassification of the site. The ventilation exhaust filter building housed blowers and particulate filters used to treat the ventilation exhausted from the B Reactor Building. Included in this site were the 117-B Building, the intake ventilation duct from the 105-D Reactor Building, and the exhaust ventilation ducts to the 116-B Reactor Exhaust Stack.	
Location: The site was located south of the 105-B Reactor, southwest of the 116-B Stack (132-B-2).	
Process The building and below grade duct work were made of reinforced concrete, 0.3 to 0.6 meters (1	

Description: to 2 feet) thick; above grade ducts were constructed of 10 gauge black steel. The building was 16.76 meters (55 feet) long, 7.01 meters (23 feet) wide, and 11.0 meters (36 feet) high with 2.4 meters (8 feet) above grade. A soil berm was built up around the building from grade level to the top of the structure. The building was divided into two large filter cells with a smaller operating area between them. The filter cells each held six filter frames (two wide and three deep). The filter frames were designed to hold twenty-eight filters that were 0.6 meters (2 feet) square by 0.3 meters (1 foot) thick. There were spaces between the frames to allow access for filter maintenance. The operating area between the two cells was divided into two levels. The upper level, called the access gallery had ten doors that lead from it. Four doors opened into each of the filter cells and the two other doors provided access to the intake and exhaust ducts. The operating gallery was located below the access gallery. A sump was located at each end of the operating gallery to collect incidental drainage from above. A large open area extended the full length of the structure above the access gallery and the filter cells. It ranged in height between 2.5 and 2.4 meters (8.1 and 7.8 feet) due to the structure's sloping roof. The space provided access to the cement cover blocks that were positioned over each of the filter frames. Before the filter building was used, unfiltered ventilation was exhausted directly from the reactor to the atmosphere. The reactor confinement system diverted the exhaust just before the stack and routed it to the filter building where it passed through a series of filters. The filtered exhaust was then routed back to the ventilation exhaust stack where it was discharged to the atmosphere. Sealwells within the filter building provided the ability to direct the exhaust into one or both of the filter cells.

Related Sites/ Structures: The site was associated with the 105-B Reactor (118-B-8), the 116-B Stack (132-B-2), the 119-B Sample Building, and the 117-B Seal Pit Crib (116-B-12).

Waste Type: Demolition and Inert Waste

Waste Description: The site contained radiologically contaminated debris. Total radionuclide inventory in this unit was estimated to be 92 nanocuries. The radionuclides comprising this inventory were tritium, carbon-14, cesium-137, strontium-90, and plutonium-239/240. Of these radionuclides, strontium-90 was the most restrictive in the allowable residual contamination level (ARCL) calculations. Cobalt-60, europium-152, europium-153, and europium-155 were not identified in any of the samples analyzed.

Closure Info: The Waste Site Evaluation for 132-B-4, 117-B Filter Building (Calculation No. 0100B-CA-V0128) (BHI 2003), demonstrates that the historical data available is of sufficient quality and quantity to support the no action interim closure. The site achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2002), implemented for the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).

The 117-B Filter Building and associated below-grade ductwork were demolished in two phases beginning in March 1985 and continuing through January 1988. Phase I included work necessary prior to demolition activities and included extensive radiological surveying and sampling, the removal of assorted equipment (e.g., HEPA filters) for disposal in the 200 West Area burial grounds, and decontamination and/or fixing contamination. As part of Phase I activities, a calculation methodology known as "Allowable Residual Contamination Level" (ARCL) was used to evaluate the potential radiological dose to a hypothetical, maximally exposed site resident if the site were released for unrestricted use after the demolition and burial in situ of the facility. The ARCL calculations were prepared in accordance with Allowable Residual Contamination Levels for Decommissioning Facilities in the 100 Areas of the Hanford Site (UNC 1983) and authorized by the U.S. Department of Energy, Richland Operations Office. The radionuclide inventories in the 117-B Filter Building and the inlet/outlet ducts were determined from radiological surveys, isotopic analyses, and from previously collected data that

are discussed in UNC (1978).

It has been determined that any residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that based on RESRAD modeling, residual concentrations at the site pose no threat to groundwater or the Columbia River.

Code:	132-B-5	Classification:	Accepted
Names:	132-B-5; 115-B/C Gas Recirculation Facility	Reclassification:	No Action (1/5/2004)
Type:	Process Unit/Plant	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1968
Description:	This site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification to "No Action". The unit consisted of a vacuum and pressure seal pit and tunnels. It was a single-story reinforced concrete structure with a basement. It was 6.1 meters (20 feet) above and 3.4 meters (11 feet) below grade, and the width ranged from 22 meters (72 feet) to 30 meters (98 feet).		
Location:	The site was located south of 105-B.		
Related Sites/ Structures:	100-B-11, 115-B/C Caisson Site		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The resident radionuclides are tritium, carbon-14, cobalt-60, strontium-90, cesium-137, europium-152, and plutonium-239.		
Closure Info:	In 2003 the Waste Site Evaluation for 132-B-5, 115-B/C Gas Recirculation Facility (Calculation No. 0100B-CA-V0129) (BHI 2003) demonstrated that the site evaluation and historical data supported reclassification to "No Action" of the site. The site had achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA 1999). Residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESidual RADioactivity (RESRAD) modeling.		

Code:	132-B-6	Classification:	Accepted
Names:	132-B-6; 1904-B2; 1904-B-2 Outfall Structure Site; 116-B-8	Reclassification:	Interim Closed Out (7/25/2002)
Type:	Outfall	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1968
Description:	The site has been remediated and closed out. A dirt road leading to the site is crossed by a vegetation-free outfall structure wall that was left intact when the structure was backfilled to grade.		
Location:	The site is located north of the northeast corner of 116-B-11 (107-B Retention Basin) bank, directly north of the east end of 116-B-11 (107-B Retention Basin), and downstream of 116-B-7 (1904-B1 Outfall Structure), at the top of the riverbank.		
Related Sites/ Structures:	The site received effluent from the 100B process effluent lines (100-B-8), the 100B process sewer lines (100-B-14), and discharged effluent via the 100BC river effluent pipelines (100-B-15) and flumes (100-B-15:1).		

Waste Type: Process Effluent
Waste Description: The unit received and discharged reactor coolant effluent wastes to the river. The 1904-B2 Outfall received cooling water and process drainage from B Reactor and discharged through a 168-centimeter (66-inch) effluent line (100-B-15) to the middle of the Columbia River. A 1992 report states, "surface contamination is known to be present at the 132-B-6 spillway." Other documents reviewed provided no information about wastes or contamination.
Closure Info: 116-B-7, 132-B-6 and 132-C-2 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package (CVP-2002-00003) for the sites, also referred to as B/C Outfall, has demonstrated that remedial action has met the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the approved interim action Interim Action Record of Decision (ROD) (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17 Rev. 3).

Remedial action at the B/C Outfall site began on June 4, 2001. Excavation of the three outfall sites involved removing the overburden materials and debris, the contaminated structure, and underlying contaminated soil.

The COCs and COPCs for this site consist of the following: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, and strontium-90. Sampling and analysis during remediation indicated that additional COPCs should be identified. The additional COPCs are as follows: total chromium, hexavalent chromium, lead, mercury. Total chromium, hexavalent chromium, lead, and mercury were detected in cleanup verification samples and were therefore evaluated as COCs for the B/C Outfall site.

Cleanup verification sampling for the deep and shallow zones was done on January 14 and 15, 2002. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the SAP.

The sampling results indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Institutional control (IC) information has been revised for 116-B-7, 132-B-6, and 132-C-2 as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including these, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that Ics actually were required. The Ics for this site have been revised accordingly.

Code: 1607-B1	Classification: Accepted
Names: 1607-B1; 1607-B1 Sanitary Sewer System; 1607-B1 Septic Tank System; 124-B-1	Reclassification: No Action (8/30/2007)
Type: Septic Tank	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1960
Description: The site included a septic tank, tile field, and associated pipelines from the 1701-B badge house, 1720-B patrol building, 1709-B Fire headquarters, and the change rooms. The site currently appears as a vegetation and gravel covered area that is raised about 1.2 meters (4 feet) above the surrounding terrain. The septic tank is clearly marked on historical drawings in the location of the raised mound.	
Location: The site was located north of the 1720-B Building site near the entrance to the 100 B/C Area	

LOCATION:

Process Description: The septic tank was constructed of reinforced concrete and had a 125 person capacity (132 liters [35 gallons] per capita) or approximately 16,504 Liters with an average detention period of 24 hours. The walls and floor were 25 centimeters (10 inches) thick. The tile field was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe or drain tile with a minimum of 2.4 meters (8 linear feet) per capita. The laterals were open-jointed and spaced 2.4 meters (8 feet) apart.

Related Sites/ Structures: The site received effluent from the change rooms, 1701-B Badgehouse, 1720-B patrol building, 1709-B Fire Station Headquarters.

Waste Type: Sanitary Sewage

Waste Description: According to documentation, the site received unknown amounts of sanitary sewage from the 1701-B Badgehouse (security checkpoint), the 1709-B Fire Station, the 1720-B Patrol Change Room, and offices.

Closure Info: The Remaining Sites Verification Package for the 1607-B1 Septic System has demonstrated that the site meets the objectives for reclassification to No Action. The remedial action objectives and the corresponding remedial action goals were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Excavation and confirmatory sampling at the site was conducted on May 21, 2007. Excavation began with a test pit at the suspected location of the septic tank. The septic tank was encountered less than 0.3 meters (1 foot) below ground surface (bgs). The top of the tank was found to have been entirely removed and the tank contained mostly soil backfill with small quantities of miscellaneous, nonhazardous debris (i.e., bollards, concrete debris, rebar, and VCP pieces). A single sample was collected from the bottom of the tank which was reached at 3.4 meters (11 feet) bgs. Excavation at the drain field revealed vitrified clay pipe containing no sediment. The rest of the samples consisted of soil underlying the tank, soil underlying pipelines, and the soil underlying the drain field.

The Contaminants of Potential Concern (COPCs) for the site were identified based on existing historical and analogous site information. Additional COPCs were identified and agreed upon as described in the site-specific sample design, they included the following: the inductively coupled plasma (ICP) metals, mercury, hexavalent chromium, pesticides, semivolatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs).

Radionuclides were not COPCs for this site; however, the presence of radiological contaminants was evaluated during excavation and sampling activities using field radiological survey instrumentation (capable of detecting alpha, beta, and gamma radiation). Although no elevated radiological activity was detected during field activities, samples were submitted for further radionuclide evaluation.

Field screening for volatile organic compounds using an organic vapor monitor was also performed during excavation and sampling activities. No elevated volatile organic readings were detected; therefore, volatile organic analysis was not included in the requested analyses. No oily soil, evidence of burning, or suspect asbestos-containing material was observed during field activities; therefore, additional analyses were not required. Confirmatory sampling was performed, and the analytical results indicate that the residual concentrations of COPCs at this site meet the remedial action objectives for direct exposure, groundwater protection, and river protection.

The analytical results were stored in the Environmental Restoration project-specific database prior to being provided to the Hanford Environmental Information System and were included in Appendix B of the RSVP.

In accordance with the RSVP, the confirmatory sampling results support a reclassification of the waste site to No Action. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	1607-B2	Classification:	Accepted
Names:	1607-B2; 1607-B2 Sanitary Sewer System; 1607-B2 Septic Tank System; 124-B-2	Reclassification:	Interim Closed Out (3/13/2007)
Type:	Septic Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed out. The site included a septic tank and drain field. See the subsites for detailed information. The site consisted of subsite 1) Septic drainfield and subsite 2) the septic tank and pipeline.		
Location:	The septic tank was located 390 meters (1280 feet) north of the 105-B Building. The drain field was located 240 meters (787.4 feet) northwest of the septic tank.		
Process Description:	The septic tank system received effluent from the 100-B/C Area office buildings, 105-B Reactor Building, and the 190-B Pumphouse. The septic tank had a capacity of 59,620.24 liters (15,750 gallons). The system had the potential to support 450 persons assuming input of 132.5 liters (35 gallons) per capita per day and a one day retention period.		
Related Sites/Structures:	The septic tank received sanitary sewage effluent from the 105-B Reactor Building, the 190-B Pumphouse and the 100-B Area office buildings. The office buildings have been removed.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received sanitary sewage from the 100 B/C Area office buildings, the 105-B Reactor Building, and the 190-B Pumphouse. All office buildings have been removed; however, the sewer lines to the respective buildings remained in place.		
Closure Info:	1607-B2 and 100-B-14:2 were addressed as a group. The information below documents information for the group of sites.		

The Remaining Sites Verification Package (RSVP) 2006-055 for 1607-B2 and 100-B-14:2 has documented that the current site conditions supported a reclassification to interim closed out. Evaluations and verification sampling results for the RSVP demonstrated that the sites have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Remediation of the 100-B-14:2 and 1607-B2 waste sites was performed in stages from January 2005 through June 2006 as part of the 100-B/C Area Remaining Pipes and Sewers remediation project. All excavation was restricted within the shallow zone (less than 4.6 meters [15 feet] bgs), with an average depth of approximately 2.5 meters [8 feet] bgs, and a maximum depth of approximately 4 meters [13 feet] bgs at the septic tank. Excavation at the northern portion of the site continued to greater depth due to concurrent remediation of the underlying 100-B-14:1 process sewer. Excavated and disposed material quantities could not be explicitly separated for

each site due to co-location and concurrent remediation of differing functional pipeline groups.

This Site has the Following SubSites:

Code: 1607-B2:1
Names: 1607-B2:1; 1607-B2 Septic Tank
Code: 1607-B2:2
Names: 1607-B2:2; 1607-B2 Septic Tank Drain Field

Code: 1607-B2:1	Classification: Accepted
Names: 1607-B2:1; 1607-B2 Septic Tank	Reclassification: Interim Closed Out (3/13/2007)
Type: Septic Tank	Start Date:
Status: Inactive	End Date:

Description: The septic tank had a capacity of 59,620.24 liters (15,750 gallons). The system could support 450 persons assuming input of 132.5 liters (35 gallons) per capita per day and a one day retention period. The septic tank was constructed of reinforced concrete. The walls and floor are 25 centimeters (10 inches) thick.

During the March 2000 field visit, it was observed that the top of the septic tank was at grade level except on the north side, where it was above grade. In many areas the edges of the concrete were obscured by soil and vegetation. There were three manholes in the top of the tank covered by metal covers with handles. The septic tank was surrounded by six black and yellow striped posts, each about 0.9 meter (3 feet) high, and a light-duty barricade chain. The site was identified with a blue and white "Septic Tank" sign.

Location: The septic tank was located 390 meters (1280 feet) north of the 105-B Building.

The SubSite is Part Of:

Code: 1607-B2
Names: 1607-B2; 1607-B2 Sanitary Sewer System; 1607-B2 Septic Tank System; 124-B-2

Code: 1607-B2:2	Classification: Accepted
Names: 1607-B2:2; 1607-B2 Septic Tank Drain Field	Reclassification: Interim Closed Out (3/13/2007)
Type: Septic Tank	Start Date:
Status: Inactive	End Date:

Description: A historical drawing states that the drain field was "to be located in field" near the septic tank, but does not show exact location. The drain field is constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a total of 1097.3 meters (3600 linear feet) of piping (2.4 meters [8 linear feet] per capita). The laterals are open-jointed and spaced 2.4 meter (8 feet) apart.

The drain field was a vegetation-covered area surrounded with light-duty steel posts and light-duty barricade chain. During the March 2000 field visit, it was noted that some of the barricade has fallen. The site was identified with "Drain Field" signs.

Location: The drain field is located 240 meters (787 feet) northwest of the septic tank.

The SubSite is Part Of:

Code: 1607-B2
Names: 1607-B2; 1607-B2 Sanitary Sewer System; 1607-B2 Septic Tank System; 124-B-2

Code: 1607-B5 **Classification:** Accepted

Names: 1607-B5; 1607-B5 Septic Tank System; 124-B-4; **Reclassification:** None
1607-B4; 1607-B4 Sanitary Sewer System; 1607-B4 Septic Tank System

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:**

Description: The septic tank can be identified by a 20 centimeter (8 inch) capped steel vent pipe. The cap is stamped with the words septic tank. It is surrounded by a vegetation-free graveled parking lot. The pipe extends above grade about 0.76 meters (2.5 feet). The drain field runs southeast of the tank. The residue in the tank was sampled in January 2001. Elevated levels of cesium resulted in the tank being posted with Underground Radioactive Material signs. The tank was not backfilled. In 2007, analysis of additional samples of tank contents found no radiological constituents above background in either the liquid or sludge waste in the tank. For this reason, the site was down posted from URMA status. HEIS numbers for the 2007 sampling effort are: liquid--J14XJ3, J14XJ4, J14XJ5, and J14XJ6; sludge--J14XH9, J14XJ0, J14XJ1, and J14XJ2.

Location: The site is located southeast of the 181-B/C Pump House.

Process Description: The unit received sanitary sewage from the 181 B/C Pumphouse.

Related Sites/Structures: The site is associated with the 181-B pump house building.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from 181-B/C River Pumphouse. The flow rate to the unit was estimated at approximately 35 gal/day (130 L/day). In January 2001, the tank was sampled and analyzed for radionuclides. All radionuclides were undetected except for cesium-137, which was 38.3 picocuries per liter and gross beta, which was 1.8 picocuries per liter.

Code: 1607-B7 **Classification:** Accepted

Names: 1607-B7; 1607-B7 Sanitary Sewer System; 1607-B7 Septic Tank System; 124-C-1 **Reclassification:** Interim Closed Out (7/27/2003)

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1969

Description: The site has been remediated and interim closed out. The site consisted of a septic tank and drain field. The tank was constructed of reinforced concrete with a brick manhole access. The drain field was located due east of the tank.

Location: The unit was located northeast of the 183-B Filter Plant.

Process Description: The tank walls were 20 centimeters (8 inches) thick, the floor was 15 centimeters (6 inches) thick, and 2.5 meters (8 feet 3 inches) deep. It had a 12-person capacity (130 liters [35 gallons] per capita) with an average detention period of 24 hours. The drain field was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a minimum of 2.4 meter (8 linear feet) per capita. The laterals were open jointed and spaced about 2.4 meters (8 feet) apart.

Related Sites/Structures: The 183-B water treatment facility discharged effluent to the septic system via the 100-B-14 pipeline.

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary sewage from 183-B Water Treatment Plant.

Description:

Closure Info: Remedial action objectives and goals for the 1607-B7 site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL- 96-17).

The selected remedial action for the 1607-B7 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

Waste site COPCs for the 1607-B7 site were identified through process knowledge and analogous site data and are included in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (BHI 2003). From BHI (2003), the COPCs for this site consist of metals, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). Additional COPCs for this site included at the request of the regulatory agency are radionuclides (gross alpha, gross beta, and gamma emitters) and hexavalent chromium. Gross alpha and gross beta analyses were conducted for screening purposes.

The cleanup verification results indicate that the soils primarily affected by past waste disposal activities associated with the 1607-B7 site were removed, and that remaining soil (with the possible exceptions of lead and BHC) is below soil background concentrations. For the various reasons given above, lead, BHC, hexavalent chromium, and the individual radionuclides (cesium-137, cobalt-60, europium-152, europium-154, and europium-155) are carried throughout this CVP as COCs. The final 1607-B7 cleanup verification COC list is as follows: cesium-137, cobalt-60, europium-152, europium-154, europium-155, lead, hexavalent chromium, BHC.

At the completion of the remedial action, the total excavation was approximately 369 meters squared (3,709 square feet) in area with a depth of 3.5 meters (11.5 feet). Approximately 198 metric tons (218 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. The septic system inlet pipe was partially removed, see map and co-ordinates in the Cleanup Verification Package (CVP) for a more precise location. The remainder of the pipeline (100-B-14) from the 183-B water treatment facility will be dispositioned with the other pipelines in that site.

Results of the sampling, laboratory analyses, and data evaluations for the 1607-B7 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Code: 116-C-1	Classification: Accepted
Names: 116-C-1; 107-C Liquid Waste Disposal Trench	Reclassification: Interim Closed Out (1/21/1999)
Type: Trench	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1968
Description: This site has been interim closed out after remediation. It has been backfilled and revegetated. The revegetation included a test plot to determine the need for additional topsoil and irrigation	

on remediated waste sites. The 116-C-1 site was constructed in 1952 and is located northeast of the 116-C-5 Retention Basin facility, approximately 253 meters (830 feet) from the 100-year flood level of the Columbia River.

Location: 116-C-1 was an inactive liquid waste site located approximately 300 meters (1,000 feet) east of 116-B-11 (107-B Retention Basin).

Release Description: The 116-C-1 Trench received 700 million liters (184 million gallons) of contaminated cooling water from the 100-B/C Area Retention Basins. The site continued to receive contaminated cooling water until reactor operations ceased in 1968. An additional 40 billion liters (more than 10 billion gallons) of high-temperature reactor cooling water was discharged to the site during a 150-day infiltration test in 1967

Process Description: The 167-meters-long, 32-meters-wide, 5-meters-deep (548-ft-long, 105-ft-wide, 16.4-ft-deep) site was a former process effluent disposal trench (unlined) that received 700 million liters (184 million gallons) of contaminated cooling water from the 100-B/C Area Retention Basins after ruptured fuel elements were detected in the reactors (DOE-RL-93-06). The 116-C-1 site continued to receive contaminated cooling water until reactor operations ceased in 1968. An additional 40 billion liters (more than 10 billion gallons) of high-temperature reactor cooling water was discharged to the site during a 150-day infiltration test in 1967. This test likely influenced the distribution of contaminants beneath the site. Influent water was transferred to the trench via two 107-centimeters (42-inches) steel pipes leading from the 168-centimeters (66 inches) outfall pipelines that lead from the 116-C-5 Retention Basins to the river. Two additional 61-centimeters (24-inches) pipes discharged influent water to the site. The contaminated water discharged to the site soils continued from 1952 to 1968. After operations ceased in 1968, the site was decommissioned as part of the Radiation Area Remedial Action (RARA) Program. The RARA activities at the 116-C-1 site included the placement of at least 1.5 meters (4.9 feet) of fill material (shielding) over the entire base of the trench to stabilize the exposed contaminated surfaces of the engineered structure.

Related Sites/ Structures: The site was associated with 116-C-5 (107-C Retention Basin) and 116-B-11 (107-B Retention Basin).

Waste Type: Process Effluent

Waste Description: The site received effluent overflow from 116-C-5 (107-C Retention Basin) during reactor outages due to ruptured fuel elements. Beginning in 1955, this site also served 116-B-11 (107-B Retention Basin). The trench was used in 1967 for an infiltration test in which the total cooling water volume from B-Reactor was disposed in the trench. During the test, an estimated $4.4E+10$ liters ($1.17E+10$ gallons) of effluent water were released. From process knowledge, the waste site contaminants of concern (COCs) identified are: Americium-241, Cobalt-60, Cesium-137, Europium-152, -154, -155, Nickel-63, Plutonium-238, -239/240, Strontium-90, Uranium-238, Total Chromium, Hexavalent chromium, Mercury, and Lead.

Closure Info: The 116-C-1 site cleanup activities consisted of the 100-B/C Demonstration Project and the final remedial action. Both efforts are described below.

The purpose of the 100-B/C Demonstration Project was to initiate a limited remedial action in the 100 areas to address uncertainties in remedial design and planning.

The excavation area boundary was a 38- by 38-m (124.7- by 124.7-ft) square located in the southwest third of the trench. The material was removed in 1.5-m (5.0-ft) lifts to an approximate elevation of El. 126 m (413 ft). The side slopes were approximately 1.5 horizontal to 1.0 vertical. Figure 2 shows the location and topography of the demonstration project excavation.

The excavation and disposal of the engineered structure and RARA backfill began on July 15, 1996, and was completed on November 15, 1996. Eight contaminated soil plumes extending beyond the engineered structure were identified during the subsequent field screening and sampling efforts. The excavation and disposal of the plume areas began on April 23, 1997, and were completed on October 28, 1997.

After the soil plume excavation was completed, a test pit was excavated down to groundwater to further characterize the subsurface. The test pit was centered at an area of elevated activity (identified by radionuclide field surveys) near the 116-C-1 inlet pipes. The test pit effort began on December 15, 1997, and was completed on January 15, 1998. Soil samples were taken from each quadrant of the test pit and composited for each of the eight 1-m (3-ft) test pit lifts. When the final test pit samples were obtained, 1 m of clean native soil from identified borrow pits to the south was placed in the bottom of the pit. Backfill of the test pit occurred in approximately the same sequence as when the soils were removed using the stockpiled materials. The backfill was placed in 1-m (3-ft) compacted lifts.

During excavation, field screening and onsite gamma energy analysis (GEA) at the Radiological Counting Facility (RCF) were used to distinguish between potentially clean materials and contaminated materials for disposal at ERDF.

More than 230 samples were collected for GEA, and 35 grab samples were taken and analyzed at quick turn-around laboratories. Data from these samples were used to corroborate data obtained from field screening and to assist in waste characterization. A total of 37 final verification composite samples were taken and sent to an offsite laboratory for analysis.

Excavated overburden materials that were identified as potentially clean were placed in segregated piles near the site for potential use as clean backfill. Soils that did not meet direct exposure RAGs (based on field screening) were disposed of at ERDF.

Code:	116-C-5	Classification:	Accepted
Names:	116-C-5; 116-C-5 Retention Basins; 107-C Retention Basins	Reclassification:	Interim Closed Out (12/8/1999)
Type:	Retention Basin	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated, backfilled, and revegetated.		
Location:	The 116-C-5 Retention Basins were located approximately 1,040 meters (3,400 feet) north of the 105-C Reactor and southeast of 116-B-11 (107-B Retention Basin).		
Process Description:	The 116-C-5 Retention Basins were constructed to hold cooling water effluent from the 105-C Reactor to allow for thermal cooling and radioactive decay prior to release to the Columbia River. When in operation, the retention basins were two circular, 3.8E+07 liter (1.0E+07 gallon), open-topped tanks. Each tank had a diameter of 100 meters (330 feet), a depth of 4.9 meters (16 feet), and had internal baffles to prevent water from channeling across the tanks into the discharge lines. The tanks were constructed of welded carbon steel and were set on a reinforced concrete foundation with a crushed rock subfloor.		
Related Sites/ Structures:	The 116-C-5 Retention Basins are associated with the 105-C Reactor, 105-B Reactor, 116-C-1 Liquid Waste Disposal Trench, 132-B-6 (1904-B2) Outfall, and the 132-C-2 (1904-C) Outfall.		
Waste Type:	Process Effluent		
Waste Description:	The basins received cooling water effluent from the 105-B and 105-C Reactors for radioactive decays and thermal cooling prior to release to the Columbia River. The total radionuclide		

inventories in the vicinity of the basins ranged from 5 to over 400 curies. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the basins. Approximately 10 curies leached into the basins' floors and walls.

Closure Info: The site has been excavated, remediated, and closed out. The material removed from the site was disposed of in the Environmental Restoration Disposal Facility (ERDF).

In accordance with the Interim Action Record of Decision and Remedial Design Report/Remedial Action Work Plan, a rural residential exposure scenario was assumed in calculating cleanup levels. Results of the sampling, testing, and analyses for the 116-C-5 site cleanup indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of surface waters (including the Columbia River) have been met.

At the completion of the remedial action, the excavation floor area was approximately 26,000 square meters (6.4 acres) at a depth of 4.6 meters (15 feet), and approximately 224,709 metric tons (246,695 tons) of material from the site, including pipelines within the excavation footprint, were disposed of at the ERDF. The excavation is to be backfilled to the reference grade of 133.5 meters (438 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that ICs actually were required. The ICs for this site have been revised accordingly.

Code: 132-C-2	Classification: Accepted
Names: 132-C-2; 1904-C Outfall; 116-C-4	Reclassification: Interim Closed Out (7/25/2002)
Type: Outfall	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and closed out.	
Location: The site is located just north of the 116-B-11 (107-B Retention Basin) and downstream of 116-B-7 (1904-B1 Outfall) and 132-B-6 (1904-B2 Outfall).	
Related Sites/Structures: The site received effluent from the 100C process effluent lines (100-C-6) and discharged effluent via the 132-C-2 Outfall, 100B/C river effluent pipelines (100-B-15) and/or flumes (100-B-26) .	
Waste Type: Process Effluent	
Waste Description:	
Closure Info: 116-B-7, 132-B-6 and 132-C-2 were addressed as a group. The information below documents information for the group of sites.	

The cleanup verification package (CVP-2002-00003) for the sites, also referred to as B/C Outfall, has demonstrated that remedial action has met the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the approved interim action Interim Action Record of Decision (ROD) (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17 Rev. 3).

Remedial action at the B/C Outfall site began on June 4, 2001. Excavation of the three outfall sites involved removing the overburden materials and debris, the contaminated structure, and underlying contaminated soil.

The COCs and COPCs for this site consist of the following: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/240, and strontium-90. Sampling and analysis during remediation indicated that additional COPCs should be identified. The additional COPCs are as follows: total chromium, hexavalent chromium, lead, mercury. Total chromium, hexavalent chromium, lead, and mercury were detected in cleanup verification samples and were therefore evaluated as COCs for the B/C Outfall site.

Cleanup verification sampling for the deep and shallow zones was done on January 14 and 15, 2002. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the SAP.

The sampling results indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Institutional control (IC) information has been revised for 116-B-7, 132-B-6, and 132-C-2 as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including these, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that Ics actually were required. The Ics for this site have been revised accordingly.

Code: 600-230	Classification: Accepted
Names: 600-230; RCRA General Inspection 200WFY97 Item #4 Historic Disposal Site	Reclassification: No Action (5/25/2006)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site has been evaluated and reclassified to "No Action". The site consisted of an area of household debris typical of items found at pre-Manhattan Project farm sites.
Location:	The site was located on the right bank of the Columbia River (facing downstream) between 100B Area and 100K Area, approximately 1/3 mile west of the old Hanford Irrigation Project Pumphouse and approximately 40 yards from the river.
Process Description:	The area appeared to have been used as a dumping area for domestic waste before the Manhattan Project.
Waste Type: Batteries	
Waste Description:	Miscellaneous household garbage including, one C cell battery was found.
Waste Type: Barrels/Drums/Buckets/Cans	
Waste Description:	Empty food cans, paint cans, buckets and glass.

existing historical information for the site. The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included polychlorinated biphenyls (PCBs), pesticides, semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), asbestos, silver, barium, cadmium, chromium (total), hexavalent chromium, mercury, lead, and selenium. Field screening for VOCs was conducted during excavation and confirmatory sampling activities. No VOCs were identified, and therefore VOCs were excluded as COPCs. As a result of further evaluation of the site history, asbestos was also included as a COPC. Gross alpha, gross beta, and gamma energy analyses were also performed on samples to evaluate the potential presence of radionuclide contaminants.

Confirmatory sampling was performed April 2 through 14, 2003. All samples were collected as described in Waste Site Evaluation for the 100-B-1 Surface Chemical and Solid Waste Dumping Area and documented. Confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency (EPA) and the results were compared against the cleanup criteria specified in the RDR/RAWP. The results were stored in the Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS) and were included in Appendix A of the RSVP.

Because of the presence of TPH, pesticides, SVOCs, and PCBs at concentrations exceeding RAGs and visual observations of debris during confirmatory sampling, approximately 51,099 metric tons (56,327 US tons) of material was removed for disposal at ERDF. The site was excavated to a maximum depth of 3.7 to 4 meters (12 to 13 feet) below ground surface.

Verification sampling was performed on August 22, 2005, based on statistical evaluation of the resulting data, the residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP and the ROD. The analytical results illustrated completeness of remediation and verify that cleanup objectives for direct exposure, groundwater and river protection have been met. Residual contaminant concentrations support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario. In accordance with this evaluation, the verification sampling results support a reclassification of the 100-B-1 site to interim closed out. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 100-B-23	Classification: Accepted
Names: 100-B-23; 100-B/C Surface Debris	Reclassification: Interim Closed Out (6/16/2008)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site consisted of various sizes and forms of scattered surface debris in the 100-B/C Area which has been identified as potentially dangerous/CERCLA waste.
Location:	The surface debris included in this site was scattered over the 100 B/C Area. A GPS was used to record the location of field observations.
Process Description:	A field walk-down of the 100-B/C Area was conducted during July and August 2004 as a final closure screening activity. Scattered surface debris that was created during the construction, operating, decontamination and decommissioning (D&D), and remedial action (RA) activities at the 100-B/C Area was identified as potentially dangerous/CERCLA waste. The locations of the debris were recorded using Global Positioning System (GPS) technology and a description was entered into a field logbook. For some features, additional information was obtained using digital photography. Subsequent evaluation of the collected data yielded 4 generic groupings of wastes: asbestos-containing material, lead, oil and oil filters, and treated wood. The field walk-down of the 100-B/C Area did not include the 30-meter by 30-meter grids where cleanup activities were being conducted or within posted areas. The field walk-down was limited to observations; no sampling was conducted. Observations of potential physical hazards, cultural

artifacts, and nonhazardous, nondangerous solid waste were GPSd and noted in a logbook. A spreadsheet was also created listing the coordinates of the debris that had been observed. The spreadsheet is in the WIDS hardcopy file of this site.

Waste Type: Oil

Waste Description: Oil from automobile oil filters on soil surface; scattered oil filters.

Waste Type: Misc. Trash and Debris

Waste Description: The treated wood locations are isolated; that is, not within existing or abandoned railroad beds or utility laydown yards. These locations contain one or more horizontal railroad ties, posts, or poles imbedded or resting on the surface, more or less weathered. The locations do not include posts, poles, plywood, or other wood materials that does not appear to have been a treated wood.

Waste Type: Misc. Trash and Debris

Waste Description: Pieces of lead sheet.

Waste Type: Asbestos (non-friable)

Waste Description: Contaminants of potential concern (COPCs) include asbestos, lead, oil, and creosote. Debris is scattered across the 100-B/C area.

Closure Info: As documented in the Remaining Sites Verification Package 2008-027, the current site conditions have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-B/C-1, 100-B/C-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site.

Remediation of the 100-B-23 waste site was performed in accordance with the site-specific remediation approach as outlined in the work instruction and the site specific soil-sampling documents. The design consisted of the removal of suspect hazardous material identified at the surface of the site (friable ACM, lead sheeting and batteries, oil filters, and treated wood) along with any associated stained soils. Verification sampling of underlying stained soils was performed concurrently with the cleanup action to support waste site closure. The sampling approach was agreed to by EPA and DOE-RL.

Remediation and verification sampling of the site was performed between June 2007 and February 2008. Evaluation of the collected information for the surface debris features yielded four generic waste groupings: asbestos-containing material (ACM); lead debris; oil and oil filters; and treated wood. The various forms of scattered surface debris were thought to be created during the construction, operating, decontamination and decommissioning, at the 100-B/C Area.

The contaminants of potential concern (COPCs) for the 100-B-23 site were identified based on process knowledge and site visit observations. The identified COPCs for the oil-stained soils were total petroleum hydrocarbons (TPH), inductively coupled plasma (ICP) metals (antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc), mercury, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). The oil-stained soil sites were screened first using TPH, a primary contaminant associated with the presence of automobile oil. The results of the TPH analysis were evaluated to determine if further laboratory analysis or remediation of the oil-stained soils was required. The full list of COPCs for the oil-stained soils was analyzed only if TPH was detected, but below the screening level of 200 mg/kg (Washington Administrative Code [WAC] 173-340). No geophysical survey was performed

because the position and character of debris was well established by visual reconnaissance.

Verification samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The analytical results were stored in the Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS) and were included in Appendix C of the RSVP.

A total of approximately 680 metric tons (750 US tons) of debris and stained soils were removed from the site and disposed at the Environmental Restoration Disposal Facility. All nonfriable ACM material and most of the inert wood material was left in-place at the site. The nonfriable ACM and inert wood material did not present a potential release to the environment; therefore, no cleanup action was required for these items.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The verification sampling results supported a reclassification to Interim Closed Out. The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep-zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone were not required.

Code: 100-B-31	Classification: Accepted
Names: 100-B-31; Garnet Sand Located at 183-C Clearwell Pads	Reclassification: Interim Closed Out (1/13/2010)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description:	The site consisted of scattered garnet sands on the 183-C Clearwell concrete pads and the surrounding soils. The complete extent of the garnet sands has not been investigated.
Location:	The site was located south of Bells Street and east of Tank Avenue in south central 100-B/C Area. The center of the site was located at Washington State Plane coordinates E 565072.91, N 144009.16.
Process Description:	The exact process that caused the garnet sand to be located at this site is unknown. However, garnet sand (grit) was used in sandblasting operations throughout the Hanford site.
Waste Type: Chemicals	
Waste Description:	The waste is garnet sand mixed with the material that was sandblasted. Confirmatory sampling is needed to determine if there are any contaminants of potential concern.
Closure Info:	The remaining sites verification package, RSVP-2009-046, documents that the site has achieved remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.(Remaining Sites ROD). A reclassification to Interim Closed Out is supported based on site history, process knowledge, field observations, and comparison of residual contaminant concentrations against RAGs.

The 100-B-31 waste site was an area of scattered garnet sand on the 183-C Clearwell concrete pads and surrounding soils. The garnet sand was suspected to be the result of sandblasting operations at the former clearwell tanks. The site has been remediated as a shallow scraping and

does not require backfill. The site measures 134 m (440 ft) in length by 122 m (400 ft) in width, for a total area of 16,400 m² (176,000 ft²).

Remedial action at the site was performed from May to July 2009. Remediation included scraping along the edge of the clearwell pads and removal of garnet sand, asphalt, and contaminated soil from the area. In total, approximately 2,330 bank cubic meters (3,050 bank cubic yards) of contaminated material was removed from the site. This material, composed of garnet sand, soil, and asphalt, was stockpiled on the northeastern and southeastern tank pads before being disposed at the Environmental Restoration Disposal Facility.

Verification sampling was conducted in August 2009. The results indicated that the waste removal action had achieved compliance with the RAOs and (RAGS) for the site. Verification samples were analyzed using U.S. Environmental Protection Agency (EPA)-approved analytical methods. The 95% upper confidence limits on the true population means for residual COPCs were calculated for the excavation footprint as specified by the RDR/RAWP with calculations provided in Appendix B of the RSVP. When a nonradionuclide COPC was detected in fewer than 50% of the verification samples collected for the area, the maximum detected value was used for comparison to RAGs. If no detections for a given COPC were reported in the data set, then no statistical evaluation or calculations were performed for that COPC.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to inclusion into the Hanford Environmental Information System and are presented as an attachment to the statistical calculations in Appendix B of the RSVP.

Residual concentrations at the site support future unrestricted remaining sites land uses that can be represented (or bounded) by a rural-residential scenario and are considered protective of human health, groundwater, and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code:	118-B-1	Classification:	Accepted
Names:	118-B-1; Ext. to BG No. 1; Operations; Solid Waste Burial Ground; 105-B Burial Ground; 105-B Solid Waste Burial Ground; 108-B Burial Ground	Reclassification:	Interim Closed Out (1/9/2008)
Type:	Burial Ground	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1973
Description:	This unit currently appears as a vegetation-free mound of cobbles raised 0.6 to 0.9 meters (2 to 3 feet) above the surrounding terrain. A 12 by 60-meter (40 by 200-foot) vegetation-covered extension near the northwest corner of the main burial ground, is raised 0.9 to 1.2 meters (3 to 4 feet) above the surrounding terrain. Part of the site is also bounded by permanent yellow markers. The site is now posted as a Soil Contamination Area, signs are required as an institutional control to prevent irrigation.		
Location:	The site was located 914 meters (3,000 feet) due west of the 105-C Reactor Building		
Process Description:	This waste site operated from 1944 to 1973, receiving general radioactive and non-radioactive wastes from the 105-B and 105-N Reactors, construction wastes from modification of the 105-B Reactor Building, and process wastes from the P-10 Tritium Separation Project. The original burial ground contained six to eight trenches that ran in a east-west direction, receiving general reactor waste from the B Reactor which included: aluminum tubes, lead bricks, thermocouples, vertical and horizontal aluminum thimbles, stainless-steel gun barrels and expendables (e.g.,		

plastic, wood, and cardboard). Spline silos were also constructed at the burial ground, which were vertical metal culverts, 3 to 3.7 meters (10 to 12 feet) in diameter, built presumably to receive reactor poison splines and other metal wastes. One extension to the south side of the original burial ground was known as the 108-B Solid Waste Burial Ground, measuring 46 meters (150 feet) long by 73 meters (240 feet) wide by 6.1 meters (20 feet) deep. The burial ground contained three trenches oriented from east to west. This burial ground received contaminated tritium pots, irradiated process tubing (in 1952), contaminated fuel spacers (perfs), solid tritium wastes, and high-level liquid tritium wastes that were sealed in a 7.6-centimeter (3-inch)-diameter iron pipe. The second extension to the burial ground was added in 1956 and was referred to as the "extension to Burial Ground No. 1." It measured 61 meters (200 feet) long by 15 meters (50 feet) wide and ran in a north-south direction, adjacent to and at the midpoint of the original burial ground's west side. This extension contained two trenches that ran in a north-south direction and was used for the burial of contaminated yokes from B Reactor. The third extension was added to the north side of the original burial ground in the mid 1960s and measured 106 meters (350 feet) long by 91 meters (300 feet) wide, with trenches running in an east-west direction. Historical data on the contents of these trenches are not as detailed as with earlier extensions but are presumed to include "general" reactor and construction waste from modifications to B Reactor. Waste materials from the Tritium Separation (P-10) Project were also buried here, including lithium-aluminum alloy, lead, mercury, aluminum cladding, and palladium.

Waste Type: Equipment

Waste Description: The burial ground received general reactor waste from the 105B and 105N reactors, including the following: aluminum tubes, irradiated facilities, thermocouples, vertical and horizontal aluminum thimbles, stainless steel gun barrels, wastes from operation of the P-10 tritium separation project, and expendables such as plastic, wood, and cardboard. Waste materials were typically buried 6.1 meters (20 feet) below grade and were covered with a minimum of 1.2 meters (4 feet) of clean soil; actual soil cover ranged from 0.6 meters (2 feet) to greater than 4.3 meters (14 feet). Potential Contaminants include Ag-108m, C-14, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Ni-59, Ni-63, Sr-90, cadmium, Cr+6, lead, mercury, boron, graphite, PCBs, SVOAs, TPH, and VOAs.

Permanent concrete markers surrounded the site, and "Caution: Underground Radioactive Material" signs were posted. Blue and green ground penetrating radar survey stakes had been placed around the perimeter and in lines crossing the site. A 12 by 4.6-meter (40 by 15-foot), vegetation-free, cobble-covered portion about 46 meters (50 yards) north of the southeast corner is bounded by steel posts and light-duty barricade chain; warning signs are posted on that section.

Closure Info: The Cleanup Verification Package (CVP) for the 118-B-1 Burial Ground has documented that the site has met the remedial action objectives and goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP), the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (ROD), and the Explanation of Significant Difference for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (ESD).

Remedial action began on February 2, 2004, with overburden removal. Approximately 20,000 bank cubic meters (BCM) [26,200 bank cubic yards (BCY)] of overburden material was removed before beginning excavation and sorting of the burial ground on March 16, 2004. Suspect spent nuclear fuel (SNF) was discovered on September 15, 2004, and remedial activities suspended until the Authorization Basis could be assessed and revised to address spent nuclear fuel (SNF). Load-out operations resumed on April 11, 2005, for previously sorted and segregated material. All remedial activities (excavation, sorting, and load-out) resumed on

August 24, 2005, and were completed on June 7, 2007, with the exception of characterization and dispositioning of the SNF and approximately 100 remaining anomalous containers.

During remediation, it was discovered that 2 of the 23 trenches had not been used for waste disposal. The burial ground also consisted of several spline silos constructed from 3 to 3.7 meter (10 to 12 foot) diameter metal culvert piping and 3 spacer pits shored with railroad ties. The overall lateral footprint of the burial ground prior to remediation was approximately 225 meters by 90 meters (740 feet by 300 feet).

Over 120,000 metric tons (132,300 tons) of debris and contaminated soil from the Burial Ground was removed and disposed at ERDF. At the conclusion of remediation activities, the excavated area was approximately 10 meters (33 feet) at its deepest, with a lateral footprint of approximately 21,600 meters squared (5.3 acres). Approximately 136,000 meters squared (33.6 acres) in total at the site were disturbed, including stockpiles and waste sorting and staging areas.

The sampling and analysis plan (SAP) identified the contaminants of concerns (COCs) for burial grounds based on waste forms encountered. Additional waste site COCs/COPCs were identified for the 118-B-1 Burial Ground based on process knowledge and results of in-process sampling. Based on the observed waste forms found during remediation activities and the results of waste characterization sampling, COCs/COPCs were identified for each decision unit in the Site Specific Instruction for Close-Out Approach for 118-B-1. The SSI documents the agreements between the Department of Energy Richland Operations Office (DOE-RL) and the EPA regarding interim waste site closeout for the 118-B-1 Burial Ground. The COCs/COPCs identified in the 118-B-1 SSI include americium-241, carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, plutonium-241, silver-108m, strontium-90, tritium, uranium-233/234, uranium-235, uranium-238, the expanded list of inductively coupled plasma (ICP) metals (arsenic, antimony, barium, beryllium, boron, cadmium, total chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc), hexavalent chromium, mercury, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), semi-volatile organic compounds, volatile organic compounds, herbicides, pesticides, and asbestos.

Verification sampling was conducted in July 2006 and October through December 2006. Additional focused verification samples were collected from March to June 2007. Verification sampling is performed to collect data to determine if the remedial action goals (RAGs) have been met. RAGs are the specific numeric goals against which the verification data are evaluated to demonstrate attainment of the remedial action objectives as established in the Burial Ground ROD.

The results of verification sampling show that residual concentrations of contaminants other than tritium do not preclude any other future uses (as bounded by the rural-residential scenario) of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The remaining soils at this site have been sampled, analyzed, and modeled. The results of verification sampling indicated that vadose zone soils beneath the burial ground contained residual tritium concentrations in excess of remedial action objectives for the protection of groundwater. Therefore, the Tri-Parties on consideration of balancing factors have required institutional controls (postings) remain in place to prohibit future irrigation. The acceptability of direct exposure to residual tritium contamination in the deep vadose zone has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are also required.

In accordance with the CVP, the verification sampling and modeling results support a reclassification of the 118-B-1 Burial Ground to Interim Closed Out.

Code:	118-B-2	Classification:	Accepted
Names:	118-B-2; Construction Burial Ground No. 1; Minor Construction Burial Ground No. 1	Reclassification:	Interim Closed Out (4/5/2005)
Type:	Burial Ground	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1956
Description:	The site has been remediated and interim closed out. The unit was a burial ground containing a trench that ran east and west.		
Location:	Site characterization data collected in 2001 and 2002 indicated the trench may have actually been within the 118-B-3 Burial Ground. The site was originally thought to be located approximately 128 meters (420 feet) east of the 105-B Building and immediately west of the 118-B-3 Burial Ground.		
Process Description:	This burial ground received dry waste from the 107-B Basin repairs and from the 115-B Gas Recirculation Facility alterations. Operation of the unit began in 1952 and ended in the Summer of 1956.		
Related Sites/ Structures:	Received waste from the 107-B Basin repairs and from the 115-B Gas Recirculation Facility alterations.		
Waste Type:	Construction Debris		
Waste Description:	The unit was used for disposal of 100 cubic meters (131 cubic yards) of dry waste from the 107-B Basin repairs and waste from the 115-B Gas Recirculation Facility alterations. Potential Contaminants are: Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Sr-90, chromium, Cr+6, lead, mercury, PCBs		
Closure Info:	118-B-3 and 118-B-2 were addressed as a group. The information below documents information for the group of sites.		

Results of geophysical investigations and test pit excavations conducted in 2001 and 2002 indicated that the 118-B-2 Burial Ground was located within the mapped boundaries of the 118-B-3 Burial Ground (CCN105241 and CCN115320). Therefore, the sites were combined in closure documentation, and collectively referred to as the 118-B-3 Burial Ground. The cleanup verification package (CVP), CVP-2005-00001, has documented completion of remedial action of the burial grounds and its adjacent staging piles. The remedial action achieved the RAOs and corresponding RAGs established in the approved Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site, Benton County, Washington 100 Area Burial Grounds ROD (EPA 2000) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5).

Final waste site contaminants of concern (COCs) were agreed upon by the operable unit managers (CCN115320). The COCs consisted of the following: cobalt-60, plutonium-239/240, cesium-137, strontium-90, europium-152, chromium, europium-154, hexavalent chromium, europium-155, lead, nickel-63 mercury and plutonium-238. Six focused sampling areas were identified within the 118-B-3 Burial Ground to support remediation activities. Sampling numbers included J01TK1 through J01TK9, J01TL3 through J01TL7 and J01TM0 through J01TM5. The focused sampling effort on 10/19/04 and laboratory analyses results have been loaded into HEIS. None of the contaminants of potential concern identified for focused sampling were encountered at concentrations above the RAGs. Therefore, they were not added to the list of COCs for the site. Excavation and waste disposal were completed and the exposed surfaces (including an area used for staging of excavated waste) have been sampled and analyzed to verify attainment of the RAGs.

At the completion of remedial action, the excavation was 4,803.8 meters squared (51,708 square feet) in area with an average depth of less than 4.6 meters (15 feet). Approximately 9,525 metric tons (10,500 tons) of material, including soil and burial ground debris, were removed from the burial ground and disposed of at the ERDF. Results of the sampling, laboratory analyses, and data evaluations for the site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

The results of this effort indicated that the materials from the 118-B-3 Burial Ground containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site are protective of groundwater and the Columbia River. Shallow zone soil cleanup criteria have been applied to the entire vadose zone underlying the 118-B-3 excavation; therefore, institutional controls against drilling or digging are not required for this site. The Burial Ground is verified to be remediated in accordance with the 100 Area Burial Grounds ROD (EPA 2000) and may be backfilled.

Code:	118-B-3	Classification:	Accepted
Names:	118-B-3; Construction Burial Ground No. 2	Reclassification:	Interim Closed Out (4/5/2005)
Type:	Burial Ground	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1960
Description:	The site has been remediated and interim closed out. The unit contained many trenches running east and west.		
Location:	This unit was located approximately 160 meters (525 feet) northeast of the 105-B Building and directly east of 118-B-2.		
Process Description:	The burial ground was in operation from the summer of 1956 until 1960 and was used for disposal of solid waste from effluent pipeline modifications and for disposal of reactor-generated solid waste during various modification programs.		
Waste Type:	Construction Debris		
Waste Description:	The unit was used for the disposal of solid waste from the effluent line modification and for disposal of reactor-generated solid waste during various modification programs. Potential contaminants include: Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Ni-63, Pu-238, Pu-239/240, Sr-90, chromium, lead, mercury, PCBs		
Closure Info:	118-B-3 and 118-B-2 were addressed as a group. The information below documents information for the group of sites.		

Results of geophysical investigations and test pit excavations conducted in 2001 and 2002 indicated that the 118-B-2 Burial Ground was located within the mapped boundaries of the 118-B-3 Burial Ground (CCN105241 and CCN115320). Therefore, the sites were combined in closure documentation, and collectively referred to as the 118-B-3 Burial Ground. The cleanup verification package (CVP), CVP-2005-00001, has documented completion of remedial action of the burial grounds and its adjacent staging piles. The remedial action achieved the RAOs and corresponding RAGs established in the approved Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site, Benton County, Washington 100 Area Burial Grounds ROD (EPA 2000) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5).

Final waste site contaminants of concern (COCs) were agreed upon by the operable unit managers (CCN115320). The COCs consisted of the following: cobalt-60, plutonium-239/240, cesium-137, strontium-90, europium-152, chromium, europium-154, hexavalent chromium, europium-155, lead, nickel-63 mercury and plutonium-238. Six focused sampling areas were identified within the 118-B-3 Burial Ground to support remediation activities. Sampling numbers included J01TK1 through J01TK9, J01TL3 through J01TL7 and J01TM0 through J01TM5. The focused sampling effort on 10/19/04 and laboratory analyses results have been loaded into HEIS. None of the contaminants of potential concern identified for focused sampling were encountered at concentrations above the RAGs. Therefore, they were not added to the list of COCs for the site. Excavation and waste disposal were completed and the exposed surfaces (including an area used for staging of excavated waste) have been sampled and analyzed to verify attainment of the RAGs.

At the completion of remedial action, the excavation was 4,803.8 meters squared (51,708 square feet) in area with an average depth of less than 4.6 meters (15 feet). Approximately 9,525 metric tons (10,500 tons) of material, including soil and burial ground debris, were removed from the burial ground and disposed of at the ERDF. Results of the sampling, laboratory analyses, and data evaluations for the site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

The results of this effort indicated that the materials from the 118-B-3 Burial Ground containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site are protective of groundwater and the Columbia River. Shallow zone soil cleanup criteria have been applied to the entire vadose zone underlying the 118-B-3 excavation; therefore, institutional controls against drilling or digging are not required for this site. The Burial Ground is verified to be remediated in accordance with the 100 Area Burial Grounds ROD (EPA 2000) and may be backfilled.

Code:	118-B-4	Classification:	Accepted
Names:	118-B-4; 105-B Dummy Burial Ground; 105-B Spacer Burial Ground	Reclassification:	Interim Closed Out (5/24/2004)
Type:	Burial Ground	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1958
Description:	The site has been remediated and interim closed out.		
Location:	The unit was located 91 meters (300 feet) northeast of the 105-B Reactor Building within the 105-B exclusion area fence.		
Process Description:	This site received irradiated aluminum fuel spacers from the 105-B Reactor .		
Waste Type:	Equipment		
Waste Description:	The unit was used for disposal of fuel spacers dummies. Potential contaminants included: Co-60, Cr+6		
Closure Info:	The site has been remediated in accordance with remedial action goals (RAGs) established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. For the 118-B-4 Burial Ground site, these goals and objectives are documented in the Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds ROD) (EPA 2000) and the		

Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL 2002). The 100 Area Burial Grounds ROD provides the U.S. Department of Energy, Richland Operations Office the authority, guidelines, and objectives to conduct this remedial action. The preferred remedy specified in the 100 Area Burial Grounds ROD and conducted for the 118-B-4 Burial Ground site was excavation, treatment as necessary, and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF).

Waste site COCs identified through process knowledge are listed in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs identified in the sampling and analysis plan for this site consisted of cobalt-60 and hexavalent chromium.

During excavation of the burial ground, five wooden and three metal caissons containing metallic debris were found. The caissons contained aluminum fuel spacers, splines, and lead-cadmium "poison pieces" used during operation of the 105-B Reactor.

The pieces were found to be intact. Which substantially reduced the leachability potential of the slugs. This observation and conclusion was further supported by waste profiling, which provided Bechtel Hanford, Inc. Waste Management designation of the waste form as fully encapsulated by the aluminum jacket; therefore, not technically requiring macro encapsulation treatment for disposal at ERDF. At the completion of remedial action, the excavation was approximately 531.5 meters squared (5,721square feet) in area with an average depth of approximately 3.9 meters (13 feet). Approximately 3,171 metric tons (3,495 tons) of material, including soil and burial ground debris, were removed from the site and disposed of at ERDF.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern. Shallow zone samples (J01700 and J01701, and J016Y7 through J016Y9) were collected on January 15, 2004. The staging area cleanup verification data included samples (J016Y1 through J016Y5) collected January 15, 2004. Sample results are in the HEIS database.

CVP-2004-00002 demonstrated that remedial action at the 118-B-4 Burial Ground site achieved the RAOs and corresponding RAGs established in the approved 100 Area Burial Grounds ROD (EPA 2000) and the RDR/RAWP (DOE RL 2002). The remaining soils were, including the staging area, have been sampled, analyzed, and modeled. The results indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River.

Institutional controls against drilling or digging are not required for this site; however, shallow zone soil cleanup criteria have been applied to the entire vadose zone underlying the excavation.

Code:	118-B-6	Classification:	Accepted
Names:	118-B-6; 108-B Solid Waste Burial Ground; 108-B Solid Waste Burial Ground No. 2	Reclassification:	Interim Closed Out (6/8/2006)
Type:	Burial Ground	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1953
Description:	The site has been remediated and interim closed. The site has been backfilled and leveled to grade. The unit consisted of two concrete caissons (pipes) 5.5 meters (18 feet) long by 1.8 meters (6 feet) in diameter, that were buried vertically in the ground and capped with a concrete pad. The concrete pad had two pear-shaped steel lids that provided access to the caissons.		
Location:	This site was located approximately 107 meters (350 feet) northeast of the B Reactor.		
Process	This site was used for disposal of wastes from the "metal line" of the P-10 Tritium Separation		

Description: Project. One of the vertical caissons was filled with waste and capped, the other was partially filled with waste and capped by a concrete pad. The pad measured about 4.6 by 3.0 meters (15 by 10 feet) with two pear-shaped steel lids that provided access to the caissons' burial chambers.

Waste Type: Equipment

Waste Description: The unit received the following types and amounts of wastes: 26,500 kilograms (58,500 pounds) of spent lithium-aluminum alloy, 21,300 kilograms (47,000 pounds) of lead from pots, 45 kilograms (100 pounds) of mercury from manometers and Toepler pumps, 1,720 kilograms (3,800 pounds) of aluminum cladding, and 1,360 kilograms (3,000 pounds) of palladium. Additionally, it contains a total of 21,200 kilograms (23.4 tons) of wastes generated as a result of the P-10 tritium production project in the 108-B Facility. Potential contaminants include: H-3, lead, mercury

Closure Info: The cleanup verification package (CVP-2006-00002) documented that the site has achieved remedial action objectives and goals established in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds) (ROD) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action at the site began in November 2004. Excavation of the site involved removing the uncontaminated overburden, caissons, concrete pad, buried materials, and underlying contaminated soil.

Waste site contaminants of concern (COCs) identified in the RDR consisted of tritium, lead, and mercury. Although the majority of the excavation was completed by December 2004, leach tests done on soil samples taken from the bottom of the excavation showed levels of tritium that required an additional 1.5 meters (5 feet) of soil removal. This additional excavation was completed in June 2005.

At the conclusion of excavation activities, the elevation of the bottom of the excavation was at 136 meters (446 feet). The excavation was approximately 885 meters squared (9,523 square feet) in area with a depth of approximately 7 meters (23 feet). Nearly 577 metric tons (636 tons) of contaminated material was disposed at ERDF.

Final cleanup verification samples (J10VP0 through J10VP9 and J10VN8 and J10VN9) were collected on January 9, 2006. The samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan. The sample data were stored in the Environmental Restoration project-specific database for data evaluation prior to archiving in the Hanford Environmental Information System.

These remedial action results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. Institutional controls are required for the site to prevent drilling or excavation into deep zone soils. The site has been verified to be remediated in accordance with the ROD and the RDR and may be backfilled.

Code: 1607-B8	Classification: Accepted
Names: 1607-B8; 1607-B8 Sanitary Sewer System; 1607-B8 Septic Tank System; Septic Tank & Disposal Field for 190-C Pumphouse; 124-C-2	Reclassification: Interim Closed Out (7/29/2003)
Type: Septic Tank	Start Date: 1/1/1951

Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated and interim closed out. The site consisted of a septic tank and tile field. The vertical tank was constructed of steel and had a 1,325-liter (350-gallon) capacity. The tile field was oriented north-south and was located to the south of the septic tank. The tile field was constructed of 20-centimeter (8-inch) vitrified clay pipe laid with open joints.		
Location:	The site was located east of the southeast corner of the 190-C Process Pumphouse.		
Related Sites/ Structures:	The 190-C Pumphouse discharged sanitary effluent via the 100-C-9 pipeline to the septic system.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received an unknown quantity of sanitary sewage from the 190-C Pumphouse.		
Closure Info:	The Cleanup Verification Package (CVP-2003-05) has documented that the site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) for the site as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).		

The contaminants of potential concern (COPCs) were identified through process knowledge and analogous site data and are included in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort. Based on the data quality objectives summary report, the COPCs for this site consisted of metals, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). Additional COPCs for this site included at the request of the regulatory agency are radionuclides (gross alpha, gross beta, and gamma emitters) and hexavalent chromium. Gross alpha and gross beta analyses were conducted for screening purposes.

Of the metals analyzed (arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver), only lead was detected in cleanup verification samples at levels greater than Hanford Site or Washington State background. Because concentrations of lead in soil were greater than background, lead was included as a cleanup verification contaminant of concern (COC) for the site. Because the other metals were not detected above soil background concentrations, they were not included as site COCs.

Of the 21 pesticides, 7 PCB Aroclors, and 64 SVOC constituents analyzed, only dichlorodiphenyltrichloroethane (DDT) and Aroclor-1254 were detected in cleanup verification samples at concentrations greater than the analytical method practical quantitation limits (PQLs). DDT and the PCB Aroclor-1254 are included as cleanup verification COCs because of the detections above the analytical method PQL. None of the other pesticides, PCBs, or SVOCs was detected at concentrations greater than the analytical method PQL and are therefore not included as site COCs. These analyses were performed using the EPA SW-846 Methods 8081 for pesticides, 8082 for PCBs, and 8270 for SVOCs. With the exception of the SVOCs and a limited number of PCBs, the analyses met the specified detection limits included in the 100 Area Remedial Action Sampling and Analysis Plan or the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort.

Cleanup verification sampling was conducted on March 31, 2003. The samples, including QA/QC samples, were collected and analyzed for the following COCs: cesium-137, cobalt-60, europium-152, europium-154, europium-155, lead, hexavalent chromium, DDT, aroclor-1254.

At the completion of remedial action, the total excavation was approximately 255 meters squared (2,740 square feet) in area with a depth of 2.5 meters (8.2 feet). Approximately 361

metric tons (397 tons) of site materials were disposed at the Environmental Restoration Disposal Facility. The septic system inlet pipe was removed to the extent of the site excavation. The approximately 12 meters of remaining pipeline between the 190-C Pump House and the 1607-B8 site has been included in the 100-C-9 pipeline site and will be dispositioned with the other pipelines in that site. At the conclusion of excavation activities, the bottom elevation of the excavation was at 143.7 meters (471.3 feet). The excavation was approximately 255 meters squared (2,740 square feet) in area with a depth of approximately 2.5 meters (8.2 feet).

The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicated that the materials from the site containing contaminants at concentrations exceeding RAGs have been excavated and disposed at the ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The 1607-B8 site is verified to be remediated in accordance with the ROD and may be backfilled.

Code:	1607-B9	Classification:	Accepted
Names:	1607-B9; 1607-B9 Sanitary Sewer System; 1607-B9 Septic Tank System; 124-C-3	Reclassification:	Interim Closed Out (8/28/2003)
Type:	Septic Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed out. The site was a septic tank and tile field.		
Location:	The unit was located south of the 118-C-1 Burial Ground, southeast of the 105-C Reactor building and north of the perimeter road.		
Process Description:	Effluent from the tank was routed a short distance (about 16 meters [52 feet]) through a pipeline to the tile field. The tile field located southeast of the tank was constructed of 20-centimeters (8-inches)-diameter vitrified clay pipe laid with open joints. The 20-centimeters (8-inches)-diameter pipeline between the reactor building and the septic tank was part of the 100-C-9 pipelines site. A small portion of the pipeline was removed with the 1607-B9 site. The remainder of the septic tank influent pipeline will be dispositioned with other pipelines included in the 100-C-9 pipelines site. The tank had a 9,085-liter (2,400-gallon) capacity.		
Related Sites/ Structures:	The site received sanitary sewer effluent from the 105 C reactor via an influent pipeline (100-C-9).		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received an unknown amount of sanitary sewage from the 105-C Reactor Building.		
Closure Info:	The Cleanup Verification Package (CVP-2003-06) has documented that the site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) for the site as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).		

Waste site COPCs for the 1607-B9 site were identified through process knowledge and analogous site data and are included in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort. The COPCs for this site were identified in the document BHI 01249 and consisted of metals, pesticides, polychlorinated

biphenyls (PCBs), and semivolatile organic compounds (SVOCs). Additional COPCs were included at the request of the regulatory agency, they are: radionuclides (gross alpha, gross beta, and gamma emitters) and hexavalent chromium. Gross alpha and gross beta analyses were conducted for screening purposes.

Concentrations of lead greater than background, were detected in the cleanup verification soil samples. Therefore, lead was included as a cleanup verification contaminant of concern (COC). Cleanup verification sample results for cesium-137, cobalt-60, europium 152, europium 154, europium 155 and soil background concentrations for metals were included in Appendix A of the CVP. The final 1607-B9 cleanup verification COC list included: cesium-137, cobalt-60, europium-152, europium-154, europium-155, lead, hexavalent chromium, dieldrin.

At the completion of the remedial action, the total excavation was approximately 1,773 meters squared (19,084 square feet) in area with a depth of 3.5 meters (11.5 feet). Approximately 3,060 metric tons (3,370 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility.

The CVP demonstrated that remedial action has achieved the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils have been sampled, analyzed, and modeled. The results of this effort indicated that the materials, containing COCs at concentrations exceeding RAGs, have been excavated and disposed at the ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site do not pose a threat to groundwater or the Columbia River. As stated in CVP-2003-00006, the site was verified to be remediated in accordance with the ROD and may be backfilled.

Code:	1607-B10	Classification:	Accepted
Names:	1607-B10; 1607-B10 Septic Tank System; Sewage Disposal Field	Reclassification:	Interim Closed Out (7/29/2003)
Type:	Septic Tank	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated and interim closed out. The site consisted of a septic tank and tile field. A steel pipe riser 20 centimeters (8 inches) in diameter and 84 centimeters (33 inches) above grade marked the location of the tank.		
Location:	The unit was located south of the former site of the 183-C Head House and east of the road that passed the 183-C Water Plant in a north/south direction.		
Related Sites/ Structures:	The 183-C Head House discharged sanitary effluent to the septic system via the 100-C-9 pipeline.		
Waste Type:	Sanitary Sewage		
Waste Description:	The unit received only sanitary sewer wastes from the headhouse of the 183-C Water Treatment Plant. There were no known discharges of hazardous chemicals or radionuclides.		
Closure Info:	Remedial action objectives and goals for the 1607-B10 site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17).		

The selected remedial action for the 1607-B10 site included (1) excavating the site to the extent

required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to the average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of potential concern (COPCs).

Waste site COPCs for the 1607-B10 site were identified through process knowledge and analogous site data and are included in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (BHI 01249). From BHI 01249, the COPCs for this site consist of metals, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). Additional COPCs for this site included at the request of the regulatory agency are radionuclides (gross alpha, gross beta, and gamma emitters) and hexavalent chromium. Gross alpha and gross beta analyses were conducted for screening purposes.

Of the metals analyzed for (arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver), only total chromium, lead, and mercury were detected at levels greater than Hanford Site or Washington State background. Because concentrations of total chromium, lead, and mercury in soil are greater than background, these metals are included as cleanup verification contaminants of concern (COCs) for the 1607-B10 site. Because the other metals were not detected above soil background concentrations, they were not included as site COCs.

Of the 21 pesticides, 7 PCB Aroclors, and 64 SVOC constituents analyzed for, only dichlorodiphenyltrichloroethane (DDT) and the PCB Aroclor-1254 were detected in cleanup verification samples at concentrations greater than the analytical method practical quantitation limits (PQLs). DDT and the PCB Aroclor-1254 are included as cleanup verification COCs because of the detections above the analytical method PQL. None of the other pesticides, PCBs, or SVOCs were detected at concentrations greater than the analytical method PQL and are therefore not included as site COCs. These analyses were performed using the EPA SW-846 Methods 8081 for pesticides, 8082 for PCBs, and 8270 for SVOCs (EPA 1986). With the exception of one PCB Aroclor, the analyses met the specified detection limits included in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL-96-22) or the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (BHI 01249).

Of the radionuclides analyzed for, only cesium-137 was detected at a concentration greater than the analytical method minimum detectable activity or greater than Hanford Site background for naturally occurring radionuclides. The radionuclide analyses met the radionuclide detection limits specified in SAP or are well below cleanup criteria (additional discussion is included in the CVP Appendix B). Cleanup verification HEIS sample results for cesium-137, cobalt-60, europium 152, europium 154, and europium 155 are included in Appendix A of the CVP and are included as cleanup verification COCs for the 1607-B10 site. These radionuclides were included as COCs because they are common COCs for liquid waste sites throughout the 100 Area. Gross alpha and beta results are also included in Appendix A of the CVP. The gross alpha and gross beta analyses were conducted for screening purposes and are not site COCs.

Hexavalent chromium was not detected in the 1607-B10 cleanup verification samples at concentrations greater than the analytical method PQL, but was detected in the split sample used for quality assurance purposes at a concentration of 0.61 mg/kg, well below applicable cleanup criteria. Additional discussion is included in the CVP, Appendix B. Because hexavalent chromium is a common contaminant for 100 Area liquid waste sites, it is included as a cleanup verification COC for the 1607-B10 site. Hexavalent chromium was analyzed for using the EPA SW-846 Method 7196 (EPA,1986). Hexavalent chromium cleanup verification

results are included in Appendix A of the CVP.

For the various reasons given above lead, mercury, total chromium, DDT, the PCB aroclor-1254, hexavalent chromium, and the individual radionuclides (cesium-137, cobalt-60, europium 152, europium 154, and europium 155) are carried throughout this CVP as COCs for the 1607-B10 site. The final 1607-B10 cleanup verification COC list is as follows: cesium-137, cobalt-60, europium-152, europium-154, europium-155, lead, total chromium, hexavalent chromium, DDT.

At the completion of the remedial action, the total excavation was approximately 178 meters squared (1,915 square feet) in area with a depth of 2.5 meters (8.2 feet) and the bottom elevation of the excavation was 145.0 meters (475.6 feet). Approximately 328 metric tons (361 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. The 1607-B10 septic system inlet pipe was removed to the extent of the site excavation. The remainder of the pipeline between the 183-C Head House and the 1607-B10 site is included in the 100-C-9 pipelines site and will be dispositioned with the other pipelines in that site.

The CVP demonstrates that remedial action at the 1607-B10 site has achieved the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils at the 1607-B10 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 1607-B10 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The 1607-B10 site is verified to be remediated in accordance with the ROD and may be backfilled

Code:	1607-B11	Classification:	Accepted
Names:	1607-B11; 1607-B11 Septic Tank System	Reclassification:	Interim Closed Out (7/29/2003)
Type:	Septic Tank	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated and interim closed out. The site consisted of a septic tank and drain field.		
Location:	The unit was located north of the 183-C Filter Building site, west of the 183-C Filter Building site entrance road. The drain field was located northwest of the tank.		
Process Description:	A steel riser 20 centimeters (8 inches) in diameter and 46 centimeters (18 inches) above grade marked the location of the tank. The vertical tank was constructed of steel and had a capacity of 1,325 liters (350 gallons).		
Related Sites/ Structures:	The septic system was associated with the 183-C Filter Building, Pump Room and 100-C-9 pipeline site.		
Waste Type:	Sanitary Sewage		
Waste Description:	There were no known discharges of hazardous chemicals or radionuclides into the unit. The unit received only sanitary sewer wastes from the 183-C Filter Building & Pump Room (183-C Water Treatment Plant).		
Closure Info:	Remedial action objectives and goals for the 1607-B11 site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These		

goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17).

The selected remedial action for the 1607-B11 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to the average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of potential concern (COPCs).

Waste site COPCs for the 1607-B11 site were identified through process knowledge and analogous site data and are included in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (BHI 01249). The COPCs for this site consisted of metals, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). Additional COPCs for this site included at the request of the regulatory agency are radionuclides (gross alpha, gross beta, and gamma emitters) and hexavalent chromium. Gross alpha and gross beta analyses were conducted for screening purposes.

Of the metals analyzed for (arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver), only lead was detected at levels greater than Hanford Site or Washington State background. Because concentrations of lead in soil were greater than background, it is included as a cleanup verification contaminant of concern (COC) for the 1607-B11 site. Because the other metals were not detected above soil background concentrations, they were not included as site COCs.

None of the 21 pesticides, 7 PCB Aroclors, or 64 SVOCs (with the exception of bis[2-ethylhexyl]phthalate) analyzed for were detected in cleanup verification samples at concentrations greater than the analytical method practical quantitation limits (PQLs). Bis[2-ethylhexyl]phthalate is included as a cleanup verification COC because of the detections above the analytical method PQL. None of the other pesticides, PCBs, or SVOCs were detected at concentrations greater than the analytical method PQL and are therefore not included as site COCs. These analyses were performed using the EPA SW-846 Methods 8081 for pesticides, 8082 for PCBs, and 8270 for SVOCs (EPA, 1986). With the exception of the SVOC analysis for one verification sample, the analyses met the specified detection limits included in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL-96-22) or the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (BHI 01249) (Appendix B has additional discussion). The PCB, pesticide, and SVOC results are included in Appendix A of BHI 01249.

With the exception of cesium-137 in one sample, none of the radionuclides analyzed for were detected at concentrations greater than the analytical method minimum detectable activity or greater than Hanford Site background for naturally occurring radionuclides. The radionuclide analyses met the radionuclide detection limits specified in SAP or are well below cleanup criteria. Cleanup verification sample results for cesium-137, cobalt-60, europium 152, europium 154, and europium 155 are included in Appendix A of the CVP and are included as cleanup verification COCs for the 1607-B11 site. These radionuclides were included as COCs because they are common COCs for liquid waste sites throughout the 100 Area.

Hexavalent chromium was not detected in the 1607-B11 cleanup verification samples at concentrations greater than the analytical method PQL. Hexavalent chromium was detected in the split sample used for quality assurance purposes at a concentration of 0.38 mg/kg, well

below applicable cleanup criteria. Because hexavalent chromium is a common contaminant for 100 Area liquid waste sites, it is included as a cleanup verification COC for the 1607-B11 site. Hexavalent chromium was analyzed for using the EPA SW-846 Method 7196 (EPA,1986). Hexavalent chromium cleanup verification results are included in Appendix A of the CVP.

For the various reasons given above, lead, bis(2-ethylhexyl)phthalate, hexavalent chromium, and the individual radionuclides (cesium-137, cobalt-60, europium 152, europium 154, and europium 155) are carried throughout the CVP as COCs for the 1607-B11 site. The final 1607-B11 cleanup verification COCs include: cesium-137, cobalt-60, europium-152, europium-154, europium-155, lead, hexavalent chromium, bis(2-ethylhexyl)phthalate.

At the completion of the remedial action, the total excavation was approximately 136 meters squared (1,460 square feet) in area with approximate depth of 3.0 meters (9.8 feet). Approximately 131 metric tons (144 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF). The 1607-B11 septic system inlet pipeline was removed to the extent of the site excavation. The remainder of the pipeline is included in the 100-C-9 pipelines site and will be dispositioned with it.

The CVP demonstrates that remedial action at the 1607-B11 site has achieved the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils at the 1607-B11 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 1607-B11 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site do not pose a threat to groundwater or the Columbia River. The 1607-B11 site is verified to be remediated in accordance with the ROD and may be backfilled.

Code:	100-C-3	Classification:	Accepted
Names:	100-C-3; 119-C French Drain; 119-C Sample Building French Drain	Reclassification:	Interim Closed Out (7/28/2003)
Type:	French Drain	Start Date:	1/1/1960
Status:	Inactive	End Date:	
Description:	The 100-C-3 French Drain was a 0.61 m (2 ft)-diameter gravel-filled pit that received effluent from the 119 C Sample Building. The site has been remediated and interim closed out.		
Location:	The site was located east of the 105-C Building.		
Process Description:	The 100-C-3 French Drain was a 0.61 m (2 ft)-diameter gravel-filled pit that received effluent from the 119 C Sample Building. The 119-C Sample Building was built in 1960 and contained water-cooled air sample monitoring equipment. Effluent from the sampling equipment, the building's swamp cooler, and possibly janitorial waste would have been disposed to the 100-C-3 French Drain.		
Related Sites/ Structures:	The 119-C Sample Building discharged effluent to this site.		
Waste Type:	Water		
Waste Description:	The 119-C Sample Building was built in 1960 and contained "water cooled" air sample monitoring equipment. Effluent from the sampling equipment, the building's swamp cooler, and janitorial waste would have been disposed to this drain.		
Closure Info:	Remedial action objectives and goals for the 100-C-3 site were established by the U.S.		

Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

The selected remedial action for the 100-C-3 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify contaminants of potential concern (COPCs). Because none of the metals were detected in the cleanup verification samples above soil background concentrations, they were not included as site contaminants of concern (COCs). Verification sample results and soil background concentrations for metals are included in appendix A of the CVP.

Although low levels of methylene chloride, acetone, and toluene were detected, their presence have been attributed to laboratory-introduced contamination and are not considered waste site contaminants or COCs for cleanup verification. Hexavalent chromium, a common contaminant for the 100 Area liquid waste sites, and the individual radionuclides (cesium-137, cobalt 60, europium 152, europium 154, and europium 155) are included as cleanup verification COCs.

At the completion of remedial action, the total excavation was approximately 94 meters squared (1,011 square feet) in area with a depth of approximately 3 meters (9.8 feet). Approximately 49 metric tons (54 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF).

The CVP demonstrates that remedial action at the site has achieved the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials containing contaminants at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site do not pose a threat to groundwater or the Columbia River. As stated in CVP 2003-00009 the site has been verified to be remediated in accordance with the ROD and may be backfilled.

Code:	100-C-6	Classification:	Accepted
Names:	100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines	Reclassification:	Interim Closed Out (9/19/2011)
Type:	Radioactive Process Sewer	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	The site includes the underground 105-C Reactor cooling water effluent pipelines. These include those effluent pipelines that transported 105-C Reactor cooling water from the reactor to the 116-C-5 (107-C Retention Basin), and from the basin to the 132-B-6 and 132-C-2 Outfall Structures and/or to the 116-C-1 Liquid Waste Disposal Trench. This waste site includes all associated expansion and valve boxes and excludes the retention basin (separate site), outfall structures (separate sites), and those effluent pipelines that are within the confines of the 105-C Reactor Building or that run from the outfall structures to the bottom of the river.		

It also excludes all reactor influent pipelines that are upstream of the reactor building.

Location: The site is the location of all underground reactor effluent lines running from the 105-C Reactor Building to the Columbia River. This includes segments between the reactor building and the retention basin, and between the basin and the outfall structures. Also included are the underground lines that run from the retention basin to the 116-C-1 Trench. It excludes the reactor building (and a 1.5 meter [5 foot] buffer), retention basin, and outfall structures, each of which is treated as a unique waste site.

Process Description: Effluent water passed from the reactor rear face and gravity flowed through the underground effluent lines, junction boxes and diversion boxes to the retention basins where it was held up for a short period of time to allow thermal and radiological cooling before being released through the outfall structure to the Columbia River. During periods of reactor fuel cladding ruptures, some effluent was diverted to an open trench.

Related Sites/ Structures: Related structures include the 116-C-5 Retention Basin, the 132-B-6 and 132-C-2 Outfalls, the 116-C-1 Trench, the 105-C Reactor, the 100-B-8 Effluent Pipelines, and the 100-B-15 River Pipelines.

Waste Type: Process Effluent

Waste Description: The waste was contaminated steel piping, concrete, and soil. Reactor cooling water became radioactively contaminated as it passed through the reactor core. Activation products created in the water included calcium-41, chromium-51, and zinc-65. Activation products from the reactor core that were picked up and transported by the cooling water included tritium, carbon-14, cobalt-60, nickel-63, and europium-152/154/155. Fuel element fission products such as strontium-90, and cesium-137, as well as transuranics such as plutonium-239/240 were introduced into cooling water due to fuel cladding failures. Concentrations of radionuclides in cooling water during normal reactor operations were approximately (0.2 microcuries/liter). Concentrations of radionuclides have built up in rust flakes and scale on the inner surfaces of the pipelines and in sludge in the diversion and junction boxes. Average beta-gamma concentrations for the effluent line scale and junction/diversion boxes are 83,000 and 120,000 picocuries/liter, respectively. Average plutonium-239/240 concentrations are 66 picocuries/gram for the effluent line scale and 720 picocuries/gram for the sludge at the bottom of the diversion and junction boxes. Direct readings of the bottom of the effluent lines averaged approximately 40,000 counts/minute with a Geiger-Mueller probe. Additional chemicals were added to the effluent for purposes of water treatment. These included aluminum sulfate (alum), with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter. The waste is any remaining process effluent and the contaminated pipelines.

This Site has the Following SubSites:

Code: 100-C-6:1

Names: 100-C-6:1; 100-C Area South Effluent Pipelines

Code: 100-C-6:2

Names: 100-C-6:2; 100-C Area North Effluent Pipelines

Code: 100-C-6:3

Names: 100-C-6:3; 100-C Retention Basin to Outfalls Effluent Pipelines

Code: 100-C-6:4

Names: 100-C-6:4; B/C Pipelines Discovery Areas

Code: 100-C-6:5

Names: 100-C-6:5; Pipelines Sections Under Export Water Line (transferred to 100-B-34)

mercury, europium-155, total chromium, plutonium-238, hexavalent chromium.

Cleanup verification samples including QA/QC samples consisted of 50 shallow zone samples, 11 deep zone samples, 56 overburden samples. The final verification samples were collected between November 10, 2003, and concluded on November 19, 2004, and were analyzed for the established COCs. The numerous sample numbers were listed in appendix A of CVP-2003-00022 and also in the HEIS database.

100-B-8:1 and 100-C-6:1

At the completion of remedial action, the excavation was approximately 48,260 meters squared (519,466 square feet) in area. Approximately 244,656 metric tons (269,742 tons) of material, including soil, debris, and piping were removed from the 100-B/C south pipelines site and disposed of at the Environmental Restoration Disposal Facility.

The remaining soils at these sites have been sampled, analyzed, and modeled, while contaminated material has been excavated and disposed at ERDF. These results also indicated that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The site was verified to be remediated in accordance with the ROD and may be backfilled.

The SubSite is Part Of:

Code: 100-C-6

Names: 100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines

Code: 100-C-6:2

Classification: Accepted

Names: 100-C-6:2; 100-C Area North Effluent Pipelines

Reclassification: Interim Closed Out (2/17/2004)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Cleanup Verification Package 2003-00019 (CVP) documented completion of remedial action for the 100-B/C Effluent Pipeline subsites located north of B Avenue (100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4) (collectively referred to as the 100-B/C north pipelines site). The 100-C-6:2 subsite included the 105-C Reactor effluent pipelines from B Avenue north to the 116-C-5 Retention Basin, and included the diversion box just south of the 116-C-5 Retention Basin (labeled as pipes 22, 23, and 26 in Figures 2 and 3 of CVP 2003-00019).

Location: These pipelines were north of the 105-C Reactor, north of B Avenue, to the 116-C-5 Retention Basin, and the diversion box is located just south of the 116-C-5 Retention Basin.

Waste Type: Not Specified

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

Closure Info: 100-B-8:2, 100-C-6:2, 100-C-6:3 and 100-C-6:4 were addressed as a group. The information below documents information for the group of sites.

Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide

contaminants of concern (COCs).

Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs identified in the sampling and analysis plan for this site consisted of americium-241, cesium 137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium 239/240, strontium-90, and uranium-238.

Based on verification sampling results from the 100-B/C outfalls site, total chromium, hexavalent chromium, lead, and mercury were added to the original COC list as contaminants of potential concern (COPC). Since verification sample analyses returned detected results for all four analytes, they were retained and evaluated as COCs.

Cleanup verification samples including QA/QC samples consisted of 193 shallow zone samples, 104 deep zone samples, 260 overburden samples, and 72 discovery area samples. The final verification samples were collected between August 12, 2002, and concluded on July 24, 2003, and were analyzed for the established contaminants of concern. The sample numbers are too numerous to list and as of March 2004 have not been reported to HEIS, however they are available in appendix A of CVP-2003-00019 .

At the completion of remedial action, the excavation was approximately 135,000 meters squared (443,000 square feet) in area with an average depth of approximately 7.5 meters (25 feet). Approximately 244,656 metric tons (269,742 tons) of material including soil, debris, and piping were removed from the 100 B/C north pipelines site and disposed at the Environmental Restoration Disposal Facility.

The CVP demonstrated that remedial action at the 100-B/C north pipelines site had achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1995), and in the RDR/RAWP (DOE RL 2002). The remaining soils at these sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-B-8:2, 100-C-6:2, 100 C-6:3, and 100-C-6:4 sites that contained COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF.

These results also indicate that residual concentrations in the shallow zone and discovery areas will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The SubSite is Part Of:

Code: 100-C-6

Names: 100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines

Code: 100-C-6:3

Classification: Accepted

Names: 100-C-6:3; 100-C Retention Basin to Outfalls Effluent Pipelines

Reclassification: Interim Closed Out (2/17/2004)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Cleanup Verification Package 2003-00019 (CVP) documented completion of remedial action for the 100-B/C Effluent Pipeline subsites located north of B Avenue (100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4) (collectively referred to as the 100-B/C north pipelines site). The

100-C-6:3 subsite included the 105-C underground effluent pipelines that ran between the 116-C-5 Retention Basin, 116-C-1 Trench, 132-B-6 Outfall, and 132 C 2 Outfall, and between the 116-B-11 Retention Basin and 116-B-1 Trench. Also included are the westernmost pipelines from the 116-C-5 Retention Basin to the junction box south of 116-C-5, and the pipeline on the north side of 116-C-5 that ran to the junction box immediately north of the eastern basin. The pipelines in this subsite are labeled as 12 through 21 and 42, in Figures 2 and 3 of CVP-2003-00019. One section of this subsite, labeled as pipeline 16 in the sample design figures, was removed and backfilled but not entirely sampled as part of the 116-C-5 remedial action (BHI 1997). Section 16 has been sampled for cleanup verification with this subsite.

For complete documentation from CVP-2003-00019 and cleanup verification sampling information refer to 100-C-6:2.

Location: 100-C-6:3 subsite included the 105-C underground effluent pipelines that ran between the 116-C-5 Retention Basin, 116-C-1 Trench, 132-B-6 Outfall, and 132 C 2 Outfall, and between the 116-B-11 Retention Basin and 116-B-1 Trench. Also included are the westernmost pipelines from the 116-C-5 Retention Basin to the junction box south of 116-C-5, and the pipeline on the north side of 116-C-5 that ran to the junction box immediately north of the eastern basin.

Waste Type: Not Specified

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

Closure Info: 100-B-8:2, 100-C-6:2, 100-C-6:3 and 100-C-6:4 were addressed as a group. The information below documents information for the group of sites.

Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs).

Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs identified in the sampling and analysis plan for this site consisted of americium-241, cesium 137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium 239/240, strontium-90, and uranium-238.

Based on verification sampling results from the 100-B/C outfalls site, total chromium, hexavalent chromium, lead, and mercury were added to the original COC list as contaminants of potential concern (COPC). Since verification sample analyses returned detected results for all four analytes, they were retained and evaluated as COCs.

Cleanup verification samples including QA/QC samples consisted of 193 shallow zone samples, 104 deep zone samples, 260 overburden samples, and 72 discovery area samples. The final verification samples were collected between August 12, 2002, and concluded on July 24, 2003, and were analyzed for the established contaminants of concern. The sample numbers are too numerous to list and as of March 2004 have not been reported to HEIS, however they are available in appendix A of CVP-2003-00019 .

At the completion of remedial action, the excavation was approximately 135,000 meters squared (443,000 square feet) in area with an average depth of approximately 7.5 meters (25 feet). Approximately 244,656 metric tons (269,742 tons) of material including soil, debris, and piping were removed from the 100 B/C north pipelines site and disposed at the Environmental Restoration Disposal Facility.

The CVP demonstrated that remedial action at the 100-B/C north pipelines site had achieved the

RAOs and corresponding RAGs established in the approved ROD (EPA 1995), and in the RDR/RAWP (DOE RL 2002). The remaining soils at these sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4 sites that contained COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF.

These results also indicate that residual concentrations in the shallow zone and discovery areas will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The SubSite is Part Of:

Code: 100-C-6

Names: 100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines

Code: 100-C-6:4

Classification: Accepted

Names: 100-C-6:4; B/C Pipelines Discovery Areas

Reclassification: Interim Closed Out (2/17/2004)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Cleanup Verification Package 2003-00019 (CVP) documented completion of remedial action for the 100-B/C Effluent Pipeline subsites located north of B Avenue (100-B-8:2, 100-C-6:2, 100-C-6:3, and 100-C-6:4) (collectively referred to as the 100-B/C north pipelines site). This CVP also included eleven areas discovered to have radiological contamination above background, called "discovery areas." They are collectively identified as subsite 100-C-6:4. Some areas were identified prior to commencement of the 100-B/C pipeline remediation activities, while others were found during the pipeline remediation process. The source of contamination for these areas has not been established, although the adjacent effluent piping and the 116-C-5 Retention Basins are suspected sources. The locations of the discovery areas in relation to the pipelines were shown in Figure 2 of CVP-2003-00019. For complete documentation from CVP-2003-00019 and cleanup verification sampling information refer to 100-C-6:2.

Location: These eleven pipeline segments are about 650 meters (2,145 feet) north-northeast of the 105-B Reactor, surrounding the 107-C and 107-B Retention basins.

Waste Type: Not Specified

Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

Description:

Closure Info: 100-B-8:2, 100-C-6:2, 100-C-6:3 and 100-C-6:4 were addressed as a group. The information below documents information for the group of sites.

Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs).

Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs identified in the sampling and analysis plan for this site consisted of americium-241, cesium 137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium 239/240, strontium-90, and uranium-

238.

Based on verification sampling results from the 100-B/C outfalls site, total chromium, hexavalent chromium, lead, and mercury were added to the original COC list as contaminants of potential concern (COPC). Since verification sample analyses returned detected results for all four analytes, they were retained and evaluated as COCs.

Cleanup verification samples including QA/QC samples consisted of 193 shallow zone samples, 104 deep zone samples, 260 overburden samples, and 72 discovery area samples. The final verification samples were collected between August 12, 2002, and concluded on July 24, 2003, and were analyzed for the established contaminants of concern. The sample numbers are too numerous to list and as of March 2004 have not been reported to HEIS, however they are available in appendix A of CVP-2003-00019 .

At the completion of remedial action, the excavation was approximately 135,000 meters squared (443,000 square feet) in area with an average depth of approximately 7.5 meters (25 feet). Approximately 244,656 metric tons (269,742 tons) of material including soil, debris, and piping were removed from the 100 B/C north pipelines site and disposed at the Environmental Restoration Disposal Facility.

The CVP demonstrated that remedial action at the 100-B/C north pipelines site had achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1995), and in the RDR/RAWP (DOE RL 2002). The remaining soils at these sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-B-8:2, 100-C-6:2, 100 C-6:3, and 100-C-6:4 sites that contained COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF.

These results also indicate that residual concentrations in the shallow zone and discovery areas will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The SubSite is Part Of:

Code: 100-C-6

Names: 100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines

Code: 100-C-6:5

Classification: Not Accepted

Names: 100-C-6:5; Pipelines Sections Under Export Water Line (transferred to 100-B-34)

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This waste site is two sections of pipe, approximately 110 feet long, that crossed under the active Export Water line. The line segments were left in place so as not to undermine the active 42 inch export water line that passes above these effluent lines. For remediation purposes, these sections of piping were transferred to waste site 100-B-34.

Location: These sections are north of the 105-C reactor.

Process Description: Because these sections of pipe are being transferred to waste site 100-B-34 for remediation, this subsite is being Classified to Not Accepted - per E:Mail from WCH Leonard Habel.

Waste Type: Not Specified
Waste Description: The waste is radioactively contaminated steel piping, concrete, and soil.

The SubSite is Part Of:

Code: 100-C-6
Names: 100-C-6; 100-C Reactor Cooling Water Effluent Underground Pipelines

Code: 100-C-7 **Classification:** Accepted
Names: 100-C-7; 183-C Filter Building /Pumproom Facility Foundation and Demolition Waste **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site has been backfilled and graded to match the surrounding terrain. No trace of the 183-C Filter Building/Pumproom was identified. Another area of yellow stained soil has been observed near the sedimentation basins. Information about this area has been added as a subsite. The area has a chain around it with a 'Danger Authorized Personnel Only' sign.

Location: The site is located in the southwestern portion of the 100B/C Area, 340 meters (1,115 feet) west of the 105-C Reactor Building, between the 183-C Sedimentation Basins and the four 183-C Clearwell Tank Pads. The area of yellow stained soil described as a subsite is located near the northwest corner of the sedimentation basins and north of the head house.

Process Description: One of the purposes of the 183-C Pump room was to treat the cooling water with sodium dichromate, a rust inhibitor, prior to storage in the four exterior 1.89E+07-liter (5E+06-gallon) tanks (183-C Clearwells). Water was drawn from the 183-C Filter Building clearwells and injected with sodium dichromate in the pump room prior to being pumped to the four, large tanks for storage. During past practices, the sodium dichromate was stored, mixed, and spilled in various locations throughout the building.

Related Sites/ Structures: The 183 Filter Building/Pump Room Facility received water from the 183-C Sedimentation Basins and sent treated water to the 183-C Clearwells where it was stored for the 190-C Process Pump House, 100-C-7, 183-C Filter Building /Pumproom Facility Foundation and Demolition Waste (See Subsites).

Waste Type: Chemicals
Waste Description: The concrete foundation located in the 183-C Pumproom is contaminated with sodium dichromate. Characterization data showed the contamination at the worst location to be 20 centimeters (8 inches) deep, half the thickness of the floor. Therefore, assuming the contamination averaged a depth of 15 centimeters (6 inches) throughout and covered a total area of 93 square meters (1000 square feet), a quantity of 14 cubic meters (500 cubic feet) was calculated.

Waste Type: Demolition and Inert Waste
Waste Description: The 183-C Filter Building foundation and clearwells were filled with demolition and inert waste materials and leveled to grade.

Waste Type: Asbestos (friable)
Waste Description: An underground asbestos wrapped steam line was encountered during the foundation demolition along the north clearwell. Due to the length and location of the steam line, the small area uncovered during the excavation work was not remediated. The pipe was wrapped in plastic, marked with "DANGER ASBESTOS HAZARD" tape, and covered again with soil.

This Site has the Following SubSites:

The flume contained two side-by-side 4 foot by 6 foot (1.2 meter by 1.8 meter) process sewers that eventually drained at the 132-C-2 Outfall Structure.

Process Description: These pipelines carried a variety of non-radioactive waste fluids, treated cooling water (pre-reactor), and septage. This site did not include the clean water pipelines, pipelines otherwise identified with septic systems, or the main reactor effluent pipelines (100-C-6).

Related Sites/ Structures: The buildings that discharged to the process and septic sewers are the 183-C Facilities and 190-C Pump House discharged to 1607-B8; the 105-C Reactor discharged to the 1607-B9 Septic system pipeline, and the 190-C Pump House connected to the 105-C Reactor through the treated cooling water pipelines.

Waste Type: Equipment

Waste Description: The subsite consisted of the non-radioactively contaminated process and septic sewer pipelines associated with the 105-C Reactor operations. The 1607-B9 septic system serviced the 105-C Reactor and thus may be radioactively contaminated. Any contamination associated with these pipelines was expected to be in residual amounts.

Chemical additives to the reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, the free chlorine residual was approximately 0.2 milligrams/liter, and sodium dichromate was added at a rate of about 2 milligrams/liter. (Note: Reference: WHC-SD-EN-TI-169 is for 100-F, and applies equally to 100-C).

This Site has the Following SubSites:

Code: 100-C-9:1

Names: 100-C-9:1; 100-C Main Process Sewer Collection Line

Code: 100-C-9:2

Names: 100-C-9:2; 100-C Sanitary Sewer Lines

Code: 100-C-9:3

Names: 100-C-9:3; 183-C Clearwell Pipelines

Code: 100-C-9:4

Names: 100-C-9:4; 100-C Cooling Water Transfer Pipelines and Tunnels

Code: 100-C-9:1

Classification: Accepted

Names: 100-C-9:1; 100-C Main Process Sewer Collection Line

Reclassification: Interim Closed Out (6/6/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: In accordance with the Remaining Sites Verification Package (RSVP-2004-012), the verification sampling results supported a reclassification of the subsite to Interim Closed Out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The subsite included pipelines from the 183-C and 190-C facilities that fed into the main process sewer which consisted of a dual 1.2-meter by 1.8-meter (48-inch by 72-inch)-reinforced concrete box sewer that shared a central dividing wall. The dual reinforced concrete box sewers

were often referred to as the twin box culvert. The floor, top, and walls of the twin box culvert were approximately 0.3 meters (1 foot) thick. Given the construction sequence, leaks from the cold joints could have developed at any point along the length of the structure between the floor and walls.

Location: The main process sewer began down-gradient from the 183-C sedimentation basins and was oriented east-west, running to the north of the 100-C Area water treatment and pump house facilities. Multiple feeder pipes of various sizes from the 183-C and 190-C facilities discharged into the twin box culvert. The intended purpose of these pipelines was to handle diluted, nonhazardous process wastes and storm water. Sanitary wastes were handled separately via multiple septic systems. North of the 105-C Reactor Building, the twin box culvert changed orientation to approximately north-south and ran north to the former 132-C-2 outfall.

Waste Type: Not Specified

Waste Description: Potentially contaminated pipeline (and contents), concrete, and underlying/associated soils.

Closure Info: Remedial action was divided into a northern and a southern section due to the length of the required excavation of approximately 1875 meters (6150 feet). The entire northern section along with a minimum of 0.3 meters (1 foot) of underlying soil was excavated between November 22, 2004, and February 2005. Approximately 14,639 metric tons (16,137 U.S. tons) of contaminated soil and concrete were disposed at the Environmental Restoration Disposal Facility. Verification sampling of the northern excavation was performed on August 23, 2005.

The southern portion consisted of a deep zone [i.e., more than 4.6 meters (15 feet) deep section of the twin box culvert and a shallow zone which included a section of the twin box culvert and the feeder lines from the 100-C water treatment facilities. Remediation of the southern portion shallow zone began in December 2004, and was completed on April 19, 2006. Approximately 5,851 metric tons (6,450 U.S. tons) of contaminated soil and concrete were removed for disposal at ERDF. The deep zone portion of the southern twin box culvert was left in place. Verification sampling of the southern excavation was performed July 27 through July 29, 2006.

The results of confirmatory sampling, cold joint soil sampling, and agreements with the EPA were used to develop the contaminants of concern (COCs) for verification sampling. Confirmatory sampling found concentrations of antimony, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, and mercury to be above the cleanup criteria. These analytes were carried forward as COCs for verification sampling. Gridded radiological surveys of the excavations and stockpiles did not indicate the presence of radiological contamination above background; therefore radionuclides were not included as COCs for verification sampling. All analytical data were stored in the ENRE project-specific database prior to being submitted for inclusion in the HEIS database and summarized in Appendix A of the RSVP.

The results of verification sampling for both areas showed that residual contaminant concentrations in the shallow zone did not preclude any future uses (as bounded by the rural-residential scenario) and allowed for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. The suitability of direct exposure to deep zone soils has not been demonstrated. Therefore, institutional controls will be needed to prevent uncontrolled drilling/excavation of the deep-zone section of the 100-C-9:1 Main Process Sewer Collection Line that was left in place.

Although not required by the Remaining Sites ROD, a comparison of ecological risk screening levels to the available analytical data has been made. Ecological screening levels for shallow zone soils were exceeded for antimony, boron, mercury, and vanadium. Exceedance of screening values does not necessarily indicate the existence of added risk to ecological

receptors. Specifically, the values for antimony and vanadium were below the Hanford Site background levels, the concentrations measured for mercury were within the range of Hanford Site background levels, and the concentrations measured for boron were consistent with values seen elsewhere at the Hanford Site. Exceedance of ecological risk screening levels at the waste site will be evaluated in the context of additional lines of evidence for ecological effects following a baseline risk assessment for the river corridor portion of the Hanford Site, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the waste site.

The SubSite is Part Of:

Code: 100-C-9

Names: 100-C-9; 100-C Area Process and Sanitary Sewer Underground Pipelines

Code: 100-C-9:2

Classification: Accepted

Names: 100-C-9:2; 100-C Sanitary Sewer Lines

Reclassification: Interim Closed Out (7/11/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package (RSVP-2004-013) has documented that the 100-C-9:2 subsite has met the objectives for reclassification of the subsite to Interim Closed Out. The current subsite conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The subsite consisted of the feeder pipelines for the former 1607-B8, 1607-B9, 1607-B 10, and 1607-B 11 septic systems (septic tank and drain field). All four of the septic systems and underlying contaminated soils were removed between March and May 2003, leaving the feeder pipelines in place.

Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. Residual concentrations of antimony, cadmium, total chromium, copper, lead, mercury, vanadium, and zinc were within the range of Hanford Site background levels, and boron concentrations were consistent with those seen elsewhere at the Hanford Site (no established background value is available). Concentrations of chromium, copper, lead, mercury, and zinc were within the range of Hanford Site background levels. All exceedances of screening values at the subsite will be evaluated in the context of additional lines of evidence for ecological effects following a baseline risk assessment for the river corridor portion of the Hanford Site, which will include a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the 100-C-9 site.

Location: These pipelines came from the 183-C, 190-C, and west side (pre-process side) of the 105-C Reactor buildings.

Waste Type: Not Specified

Waste Description: Potentially contaminated pipeline (and contents), concrete, and underlying/associated soils.

Closure Info: Remedial action associated with each of the four feeder pipelines began in early 2005 and concluded on September 29, 2006. A total of approximately 3,701 metric tons (4,080 U.S. tons) of contaminated material was disposed at ERDF. Statistical and focused sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. A

summary of the remediation for each of the four septic system pipelines follows:

The pipeline from the 1607-B8 septic system was removed between March 23, 2005 and April 13, 2005. The site was excavated 2 meters (6.6 feet) below grade. A total of 266 metric tons (293 U.S. tons) of contaminated material was disposed at ERDF. The resulting trench was approximately 9 meters (29.5 feet) in length by 3.5 meters (11.5 feet) wide.

Remediation of the 1607-B9 pipeline began on May 23, 2005 through July 11, 2005. The site was excavated to 3.5 meters (11.5 feet) below grade, removing a total of 2,626 metric tons (2,895 U.S. tons) of contaminated material that was disposed at ERDF. An additional 310 metric tons (342 U.S. tons) was removed on September 29, 2006, following detection of strontium-90 above the cleanup criterion in one verification sample.

During excavation of the pipeline on May 25, 2005, an anomaly consisting of reddish-brown material was discovered after a concrete structure was removed. Radiological readings were all at background levels. A sample (J03701) of the material was collected and analyzed for total metals, leachable metals (toxicity characteristic leaching procedure [TCLP]), and semivolatile organic compounds (SVOCs) to support waste characterization and disposal. There were no significant metal or SVOC concentrations associated with this anomaly. The COPCs for the pipeline were identified through process knowledge and analogous site data and consisted of inductively coupled plasma (ICP) metals, hexavalent chromium, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds. Radiological screening was also performed using gross alpha, gross beta, and gamma energy analyses.

The 1607-B 10 pipeline was removed by March 2005. A total of approximately 9 meters (29.5 feet) of sanitary sewer pipeline and an estimated 45 metric tons (50 U.S. tons) of contaminated material was removed and sent to ERDF. The resulting trench was approximately 9 meters (29.5 feet) in length by 3.5 meters (11.5 feet) wide.

The 1607-B-11 pipeline was co-located and remediated with the subsite 100-C-9:1, (100-C main process sewer collection pipelines). The 100-C-9:1 process sewer pipeline was excavated to at least 4 meters (13 feet) below grade, which concurrently removed the 1607-B 11 sanitary sewer pipeline that was approximately 1.2 meters (4 feet) below grade. The remediation activities were completed by April 2006, removing approximately 40 meters (131 feet) of the sanitary sewer pipeline and an estimated 454 metric tons (500 U.S. tons) of contaminated material was removed and sent to ERDF.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels was made for the site contaminants of concern (COC), contaminants of potential concern (COPC), and other constituents. Ecological screening levels were exceeded for antimony, boron, cadmium, total chromium, copper, lead, mercury, vanadium, and zinc.

Verification sampling for the subsite was performed between April 25, 2006, and September 29, 2006, to support interim closeout. The samples were analyzed by offsite contract laboratories using U.S. Environmental Protection Agency (EPA) approved analytical methods, and the results were compared to the cleanup criteria specified in the RDR/RAWP. The laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS). The results were also presented in Appendix A of the RSVP.

The results of verification sampling have illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were sufficiently protective of

groundwater and the Columbia River to preclude further remedial action. Accordingly, an interim closure reclassification was supported for the pipelines subsite. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

The SubSite is Part Of:

Code: 100-C-9

Names: 100-C-9; 100-C Area Process and Sanitary Sewer Underground Pipelines

Code: 100-C-9:3

Classification: Accepted

Names: 100-C-9:3; 183-C Clearwell Pipelines

Reclassification: No Action (6/3/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite included the process sewer pipelines surrounding the 183-C Clearwells (demolished) to the point of junction with the main process sewer collection line. The clearwells were used to store treated cooling water for the 105-C reactor. Chromium was added to the treated water at concentrations between 2-4 ppm (parts per million) as a corrosion inhibitor. The primary contaminant of concern was hexavalent chromium.

This subsite consisted of the process sewer pipelines that drained from the 183-C Clearwells. The clearwell drains ran from circular aboveground steel tanks and connected to cast-iron process sewers surrounding the tanks. The cast-iron process sewers eventually drained to the main twin box process sewers that connected to the 190-C Facility. The basis for separating this site from the other 100-C-9 sites is that these process sewer lines were isolated from facilities known to be potential sources of radioactive and chemical contaminants.

Location: This subsite consists of the process sewer pipelines that drained from the 183 C Clearwells. The clearwell drains ran from circular aboveground steel tanks and connected to cast-iron process sewers surrounding the tanks. The cast-iron process sewers eventually drained to the main twin box process sewers that connected to the 190-C Facility.

Waste Type: Not Specified

Waste Description: Potentially contaminated pipeline (and contents), concrete, and underlying/associated soils.

Closure Info: Sampling and evaluation of this site have been performed in accordance with remedial action objectives and goals established by the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD). The selected action involved (1) sampling of the site, (2) demonstration through a combination of field screening and confirmational sampling that cleanup goals have been met, and (3) proposal of no further action.

The 183-C Clearwells Site (100-C-9:3) meets the Remedial Action Objectives specified in the Remaining Sites ROD, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results demonstrate that residual concentrations in the deep zone are protective of groundwater and the Columbia River. Institutional controls will be required because the evaluation of compliance with direct exposure standards failed for some of the semivolatiles.

Confirmatory sampling was conducted in October 2003. The COPCs included inductively coupled plasma (ICP) metals, mercury, hexavalent chromium, semivolatile organic compounds, and polychlorinated biphenyls. The sampling approach consisted of collecting four samples,

two of soil and two of pipe scale material below 4.6 meters (15 feet) from the east junction box that was accessible where the cast-iron pipe connected to the main process sewer box (BHI 2003). The maximum detected results from the scale and soil samples were used to support waste site reclassification.

The 100-C-9:3 183-C Clearwells Process Sewer Pipelines (100-C-9:3) (BHI 2003) sample results demonstrate that the site has achieved the objectives of remedial action and remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly called the Remaining Sites Record of Decision) (EPA 1999). These results show that scale and associated residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results demonstrated that residual concentrations in the deep zone are protective of groundwater and the Columbia River. Institutional controls will be required because the evaluation of compliance with direct exposure standards failed for some of the semivolatiles.

The SubSite is Part Of:

Code: 100-C-9

Names: 100-C-9; 100-C Area Process and Sanitary Sewer Underground Pipelines

Code: 100-C-9:4

Classification: Accepted

Names: 100-C-9:4; 100-C Cooling Water Transfer Pipelines and Tunnels

Reclassification: No Action (6/3/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consisted of the Cooling Water transfer lines located in tunnels between the 190-C Pump House and the 105-C Reactor building. Six 0.6 meter (24 inch) steel pipes located in two tunnels transferred treated cooling water from the 190-C Pump House to the 105-C Reactor. The portions of the tunnels from the 190-C building to just west of the Ventilation house of each tunnel were removed with D of the 190-C Building. Radiological contamination may also have existed as contaminated biological waste products (i.e. bat guano)

Location: This sub-site includes the Cooling Water transfer lines located in tunnels between the 190-C Pump House and the 105-C Reactor building.

Waste Type: Not Specified

Waste Description: The waste is the feedwater pipelines and their contents.

Closure Info: In the RSVP attached to the Reclassification Form 2004-015 the scope of the confirmatory sampling effort consisted of the cooling water pipes and tunnels to the reactor. Sampling efforts were conducted only on the pipes. Previous sampling and survey data associated with decontamination and decommissioning (D) activities at the 105-C cooling water pipe tunnels was used to evaluate the tunnels and soil. This D data, as well as a focused sampling approach at the analogous 100-B-14:4 site, were used to confirm current site conditions. The analogous, focused sampling data, previous tunnel sampling and survey data, and previous soil sampling beneath the tunnels was used to make decisions for reclassifying the site in accordance with the TPA-MP-14 (RL-TPA-90-0001) process.

The contaminants of potential concern (COPCs) for the feedwater pipes were identified based on existing analytical data, historical process information, and historical uses and practices

associated with the 183-C Filter Building, the 190-C Process Pump House, and the associated feedwater pipelines. The COPCs included inductively coupled plasma (ICP) metals, mercury, hexavalent chromium, and polychlorinated biphenyls (PCBs).

In accordance with this evaluation, the confirmatory sampling results for pipe scale at an analogous site, previous sampling and surveying data associated with the concrete floor of the tunnels, and previous soil sampling from beneath the tunnels, support a no action reclassification of the 100-C-9:4 site. The current site conditions achieve the remedial action objectives and the corresponding RAGs established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD). These results show that the site and contaminant levels remaining in the soil will be protective of groundwater and the Columbia River. It should be noted, however, that with the maximum residual concentration of hexavalent chromium in the pipes, institutional controls are required to prevent an inhalation exposure pathway.

The SubSite is Part Of:

Code: 100-C-9

Names: 100-C-9; 100-C Area Process and Sanitary Sewer Underground Pipelines

Code: 116-C-2A	Classification: Accepted
Names: 116-C-2A; 105-C Crib; 105-C Pluto Crib; 116-C-2	Reclassification: Interim Closed Out (3/15/2000)
Type: Crib	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1969

Description: This site has been remediated and closed out. The pluto crib was constructed of concrete ties that were notched and stacked in a log cabin formation. Walls of concrete ties were constructed to divide the crib into 12 sections. Spaces between the ties were filled with sand. The crib was covered over by concrete roof slabs. A 20-centimeter (8-inch) well casing extended through the crib and ended 36 meters (118 feet) below grade.

Location: The crib is located 275 feet east of the northeast corner of the 105-C Building

Waste Type: Process Effluent

Waste Description: This unit was initially used for the disposal of reactor cooling effluent after fuel cladding failures. Unknown additional quantities of contaminated wastes included wash water from the decontamination of dummy fuel elements on the 105-C wash pad, contaminated water received from the 105-C Metal Examination Facility, and liquid wastes received from the 105-C Reactor rear face. Potential contaminants of concern include americium-241, plutonium-238/239/240, cobalt-60, cesium-137 and strontium-90. Reports vary as to the amounts of different chemicals disposed of at the Pluto Crib site. Two reports state that the crib contained 500 kilograms (1,100 pounds) of sodium dichromate, 1,000 kilograms (2,200 pounds) of sodium oxalate, and 1,000 kilograms (2,200 pounds) of sodium sulfamate. Another report, states that the crib contained 990 kilograms (2,180 pounds) of sodium dichromate, 2,100 kilograms (4,630 pounds) of sodium oxalate, and 6,600 kilograms (14,550 pounds) of sodium sulfamate. Sodium hydroxide and nitric acid were also believed to be disposed at the site. The total waste volume is listed as 7.5E+06 liters (1.98E+06 gallons).

Closure Info: 116-C-2A, 116-C-2B and 116-C-2C were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package for the 116-C-2A Pluto Crib, 116-C-2B Pump Station, & 116-C-2C Sand Filter were combined into a single remediation area and are hereinafter referred to as

the 116-C-2ABC site. The overburden was removed from the 116-C-2ABC, 116-B-2, 116-B-3, 116-B-4, 116-B-9 and 116-B-12 waste sites located in the 100-BC-1 and 100-BC-2 Operable units.

In accordance with the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995), the remedial actions were performed so as to allow future land uses at the site that can be represented (or bounded) by a rural-residential exposure scenario. The scenario assumes multiple exposure pathways for shallow zone soils (e.g., ingestion and inhalation) and no contact with or exposure to deep zone soils (e.g., below 4.6 meters [15 feet]); institutional controls will be required to prevent drilling or excavation into the deep zone.

At the completion of the remedial action, the area of the excavation was approximately 2,516 square meters (27,728 square feet) at a maximum depth of approximately 9.15 meters (30 feet). Approximately 15,939 metric tons (17,570 tons) of material were disposed of at ERDF. Approximately 2,000 cubic meters (70,629 cubic feet) of overburden was set aside from the 116-C-2ABC site as potentially clean. The excavation will be backfilled in the near future (written April 6, 2000) with clean fill materials to the reference grade of El. 150.5 meters (494 feet).

Results of the sampling, testing, and analyses for the 116-C-2ABC site and BC Overburden indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of surface waters (including the Columbia River) have been met.

Code:	116-C-2B	Classification:	Accepted
Names:	116-C-2B; 116-C-2B Pump Station; 105-C Pluto Crib Pump Station; 116-C-2-1	Reclassification:	Interim Closed Out (3/15/2000)
Type:	Pump Station	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	This site has been remediated and interim closed out. This unit was a rectangular shaped, concrete sump. A diamond-plate steel access hole cover was located in the northwest corner, and a vent was located at the east end. The site included all underground pipelines between the 105-C Reactor and the 116-C-2C Sand Filter.		
Location:	The site was located northwest of the 116-C-2C Sand Filter.		
Related Sites/ Structures:	The associated structures were the 116-C-2A Pluto Crib, 116-C-2C Sand Filter, and the 105-C Reactor.		
Waste Type:	Process Effluent		
Waste Description:	The unit received waste from the 105-C Reactor and pumped it into the 116-C-2C (105-C Pluto Crib Sand Filter).		
Closure Info:	116-C-2A, 116-C-2B and 116-C-2C were addressed as a group. The information below documents information for the group of sites.		

The cleanup verification package for the 116-C-2A Pluto Crib, 116-C-2B Pump Station, & 116-C-2C Sand Filter were combined into a single remediation area and are hereinafter referred to as the 116-C-2ABC site. The overburden was removed from the 116-C-2ABC, 116-B-2, 116-B-3, 116-B-4, 116-B-9 and 116-B-12 waste sites located in the 100-BC-1 and 100-BC-2 Operable units.

In accordance with the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995), the remedial actions were performed so as to

allow future land uses at the site that can be represented (or bounded) by a rural-residential exposure scenario. The scenario assumes multiple exposure pathways for shallow zone soils (e.g., ingestion and inhalation) and no contact with or exposure to deep zone soils (e.g., below 4.6 meters [15 feet]); institutional controls will be required to prevent drilling or excavation into the deep zone.

At the completion of the remedial action, the area of the excavation was approximately 2,516 square meters (27,728 square feet) at a maximum depth of approximately 9.15 meters (30 feet). Approximately 15,939 metric tons (17,570 tons) of material were disposed of at ERDF. Approximately 2,000 cubic meters (70,629 cubic feet) of overburden was set aside from the 116-C-2ABC site as potentially clean. The excavation will be backfilled in the near future (written April 6, 2000) with clean fill materials to the reference grade of El. 150.5 meters (494 feet).

Results of the sampling, testing, and analyses for the 116-C-2ABC site and BC Overburden indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of surface waters (including the Columbia River) have been met.

Code:	116-C-2C	Classification:	Accepted
Names:	116-C-2C; 116-C-8; 105-C Pluto Crib Sand Filter; 116-C-2-2	Reclassification:	Interim Closed Out (3/15/2000)
Type:	Sand Filter	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1969
Description:	This site has been remediated and closed out. The structure was an open-bottom concrete box placed in a sand and gravel pit. It was covered with concrete shielding slabs. Contaminated water was spread over the surface of the sand filter media by distribution trays. The site included the underground pipelines from the 105-C Pluto Crib Sand Filter to the 116-C-2A Pluto Crib.		
Location:	The site is located west of the 116-C-2A (105-C Pluto Crib).		
Process Description:	Effluent passed through this filter prior to being discharged to the soil column of the 116-C-2 Crib.		
Related Sites/Structures:	This unit was associated with 116-C-2A (105-C Pluto Crib) and 116-C-2B (105-C Pluto Crib Pump Station).		
Waste Type:	Process Effluent		
Waste Description:	The 105-C Pluto crib sand filter was sampled and surveyed between 2/6/76 and 4/5/76. Based on sample results, the sand filter contains an estimated radioactive inventory of 260 curies (Table 3.4-9, page 3-30) in 90,000 cubic feet of soil (about 6,100,000 Kg). Beta-gamma concentrations in the sand filter averaged 42,000 pCi/g with a maximum value reported of 7,300,000 pCi/g in a sample taken from an inlet distribution tray. Radioactivity in this sample was primarily due to cobalt-60 although high levels of strontium-90 (29,000 pCi/g) and cesium-137 (140,000 pCi/g) were present as well. This sample also contained 1,500 pCi/g plutonium-239/240. The average concentration of plutonium-239/40 in the sand filter was reported to be about 20 pCi/g for the entire mass of potentially contaminated soil column. Sample analyses for the sand filter are presented in Table 3.4-7 (page 3-28) by Dorian and Richards. The site may have received contaminated wastes from the decontamination of dummy fuel elements on the wash pad. Americium-241 is another potential contaminant of concern.		
Closure Info:	116-C-2A, 116-C-2B and 116-C-2C were addressed as a group. The information below documents information for the group of sites.		

The cleanup verification package for the 116-C-2A Pluto Crib, 116-C-2B Pump Station, & 116-C-2C Sand Filter were combined into a single remediation area and are hereinafter referred to as the 116-C-2ABC site. The overburden was removed from the 116-C-2ABC, 116-B-2, 116-B-3, 116-B-4, 116-B-9 and 116-B-12 waste sites located in the 100-BC-1 and 100-BC-2 Operable units.

In accordance with the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995), the remedial actions were performed so as to allow future land uses at the site that can be represented (or bounded) by a rural-residential exposure scenario. The scenario assumes multiple exposure pathways for shallow zone soils (e.g., ingestion and inhalation) and no contact with or exposure to deep zone soils (e.g., below 4.6 meters [15 feet]); institutional controls will be required to prevent drilling or excavation into the deep zone.

At the completion of the remedial action, the area of the excavation was approximately 2,516 square meters (27,728 square feet) at a maximum depth of approximately 9.15 meters (30 feet). Approximately 15,939 metric tons (17,570 tons) of material were disposed of at ERDF. Approximately 2,000 cubic meters (70,629 cubic feet) of overburden was set aside from the 116-C-2ABC site as potentially clean. The excavation will be backfilled in the near future (written April 6, 2000) with clean fill materials to the reference grade of El. 150.5 meters (494 feet).

Results of the sampling, testing, and analyses for the 116-C-2ABC site and BC Overburden indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of surface waters (including the Columbia River) have been met.

Code:	116-C-3	Classification:	Accepted
Names:	116-C-3; 105-C Chemical Waste Tanks	Reclassification:	Interim Closed Out (1/31/2008)
Type:	Storage Tank	Start Date:	1/1/1964
Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated, backfilled, and revegetated. Before remediation the site consisted of two below-grade chemical waste storage tanks, designed to receive and store chemical waste from the 105-C Reactor Metals Examination Facility (MEF) dejacketing process.		
Location:	The site was located approximately 100 m (330 ft) northeast of the 105-C Reactor safe storage enclosure, just outside the exclusion area fence.		
Process Description:	The tanks were originally installed to receive liquid wastes from the 105-C Metal Examination Facility (MEF), which was part of the 105-C Reactor Building, and was used to examine and test irradiated fuel elements. Examination included chemical dejacketing of the fuel slugs, which consisted of two cycles of immersing the fuel slugs in a 50% sodium hydroxide solution, draining the resulting solution, and rinsing the dejacketed slugs with water. The slugs were then cleaned with a 10% nitric acid solution, followed with multiple water rinses. Each of the waste tanks was approximately 3.5 m (11.5 ft) in diameter, and approximately 10.9 m (36 ft) in length, with a nominal capacity of 102,200 L (27,000 gal). The long axis of each tank was oriented east-west on a horizontal plane, with one tank located north of the other. The crests of the tanks were located approximately 3.4 m (11 ft) below existing grade, with centerlines spaced approximately 6.2 m (20 ft) apart. Waste was discharged to the tanks from the 105-C MEF via a 5-cm (2-in.) stainless-steel pipeline connected to top-feed distribution piping at the tanks. This discharge line was included in the 100-C-6:1 subsite as Pipeline 31 and was removed up to a point immediately upstream of the discharge to the southern 116-C-3 tank (BHI 2004c). Multiple additional small-diameter pipelines were also connected to the tops of the tanks,		

including vent risers, overflow lines, and conduits for the cathodic protection system used for corrosion control.

**Related Sites/
Structures:** The site is associated with the 105-C Reactor Building.

Closure Info: The Remaining Sites Verification Package, (RSVP-2008-002) for the 116-C-3 waste site, has documented that the current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan (RDR/RAWP) for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The tanks were installed in 1955, conflicting reports existed as to their usage, for example, that the tanks were potentially unused. Remediation of the influent pipeline and confirmatory evaluation of the waste site in 2003 confirmed that the site had received radiological waste, and subsequent additional characterization in 2004 indicated that the southern tank was approximately one-third full of mixed waste consistent with the 105-C Reactor Metals Examination Facility (MEF) dejacketing process. The north tank was found to contain only a small volume of suspect condensate or residual water from pressure testing, as no significant radiological activity or metals concentrations were detected.

Remediation of the waste site was performed from February through December 2007. Initially, the overburden and surrounding soils were removed sufficiently to provide a sub-grade staging and operations area for waste treatment activities. During excavation, a small volume of radiologically-contaminated soil was encountered beneath the influent pipelines near the southern tank, and staged onsite in the waste staging pile area before disposal at the Environmental Restoration Disposal Facility (ERDF). A concrete pad unrelated to the 116-C-3 waste site was also partially demolished and removed from the northeastern corner of the operations area. Systematic global positioning system environmental radiological surveys (GPERS) were performed across each 1 m (3 ft) lift of stockpiled overburden soil; no significant radiological activity was detected.

The COCs and COPCs for verification sampling were determined in consideration of process knowledge and characterization sampling results. Metals (including hexavalent chromium and mercury), nitrate, americium-241, carbon-14, plutonium-238, plutonium-239/240, strontium-90, tritium, uranium-233/234, uranium-235, uranium-238, cesium-137, cobalt-60, europium-152, europium-154, and europium-155 were considered COCs/COPCs for verification sampling.

Site remediation consisted of the removal and stockpiling of overburden material, followed by a proof-of-principle demonstration at the empty northern tank following the general treatment and remediation process planned for the southern tank. Subsequently, the southern tank was treated in accordance with an approved treatment plan, using chemical treatment to address the corrosivity characteristic of the waste and reduce hexavalent chromium to trivalent chromium, followed by physical treatment using in situ grout stabilization. Treatment verification sampling indicated that requirements had been met, and the treated tank was demolished and removed, along with approximately 1.5 m (5 ft) of underlying soil.

Treated material, demolition rubble, and approximately 1 m (3 ft) of soil underlying the tank was removed for disposal at ERDF. Initial soil samples from the tank footprint indicated residual hexavalent chromium concentrations above soil remedial action goals (RAGs) and elevated residual radiological activity. This information is in appendix A, Table A-2 of the

RSVP. Therefore, an additional 0.7 m (2 ft) of soil was removed from the southern tank footprint and disposed at ERDF. Excavation at the site extended to a maximum depth of approximately 28 ft (8.5 m) below ground surface (bgs), and the footprints of the remediated waste tanks are entirely in the deep zone (greater than 4.6 m [15 ft] bgs). Approximately 3,767 metric tons (4,152 U.S. tons) of treated waste, debris, and soil was removed from the site and disposed at ERDF. Following verification of attainment of cleanup criteria, the site was backfilled and re-vegetated.

Remedial actions were performed so as to not preclude any future uses (as bounded by the rural-residential scenario), and to allow unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). Following site remediation, verification sampling of overburden material and soil within the remediation and waste staging pile area footprints was conducted in October and December 2007. The results indicated that the waste removal action achieved compliance with the remedial action objectives. The results of the verification sampling were used to make reclassification decisions for the site in accordance with the Tri-Party Agreement Handbook Management Procedures, TPA-MP-14 procedure.

All characterization samples were analyzed at offsite commercial laboratories; results were stored in the Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS) and were provided in Appendix A of the RSVP-2008-022.

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The verification sampling results support a reclassification to Interim Closed Out. The acceptability of direct exposure to residual deep-zone contamination has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are required.

Code:	116-C-6	Classification:	Accepted
Names:	116-C-6; 105-C Fuel Storage Basin Cleanout Percolation Pit; 105-C Pond	Reclassification:	Interim Closed Out (12/8/2003)
Type:	Process Pit	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1985
Description:	The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification to interim closed out. The site was an unlined, L-shaped open excavated pit. Soil was excavated from the center and used as a berm around its perimeter.		
Location:	The site was located east of the 105-C Reactor Building, east of the reactor exclusion fence.		
Process Description:	The pit was constructed to receive liquid from the clean out of the 105-C Fuel Storage Basin. The radiologically contaminated shielding water in the basin was processed through an ion exchange column and filter system. After being sampled to determine if the radioactivity was below release criteria, the water was discharged to the pit. Chemical analysis for hazardous substances was not a standard practice and there was no evidence that it was performed. The water percolated into the soil as fast as it was discharged to the site.		
Related Sites/ Structures:	The site was related to the 105-C Fuel Storage Basin		

Waste Type: Water
Waste Description: This unit received water from the 105-C Fuel Storage Basin cleanout. Before being discharged to the pit, the radiologically contaminated shielding water in the basin was processed through ion exchange columns. Composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. No known hazardous substances were present in the water; however chemical analysis during that period was not a standard practice, and there is no evidence that any chemical analyses were performed.

Closure Info: In 2003 the waste site evaluation 0100B-CA-V0121, Rev. 4 demonstrated that information which included previous sample results, a 2003 field walkdown (site evaluation), and historical data supported reclassification to “interim closed out” of the 116-C-6 site. The site soil conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999).

Cleanup verification samples collected in March 2003 were analyzed by offsite contract laboratories using U.S. Environmental Protection Agency approved analytical methods. Sample results from test pit #3 had elevated levels of cesium-137. Per agreement with the EPA, the area of the hot spot was excavated and contaminated soil removed and disposed of at the Environmental Restoration Disposal Facility. After remediation, a confirmatory sample was collected to verify cleanup levels had been met.

Residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario and pose no threat to groundwater or the Columbia River.

Code: 118-C-1	Classification: Accepted
Names: 118-C-1; 118-C-1 Burial Ground; 105-C Burial Ground; 105-C Solid Waste Burial Ground	Reclassification: Interim Closed Out (7/19/2007)
Type: Burial Ground	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1969
Description: The site was a burial ground that contained six small engineered disposal structures (rectangular pits with reinforced side walls) and many trenches running north and south. The site boundaries were permanently marked with concrete posts numbered C-70-1 through C-70-20.	
Location: The site was located approximately 152 meters (500 feet) southeast of the 105-C Building.	
Process Description: This site was the primary burial ground for general wastes from the operation of the 105-C Reactor. It received process tubes, aluminum fuel spacers, control rods, reactor hardware, and soft wastes.	

Waste Type: Equipment
Waste Description: The unit was used for miscellaneous solid waste from 105-C Building that included process tubes, aluminum spacers, control rods, soft waste, and reactor hardware. The C Area Land Burial log (1962-1965) identified waste as trash, poison splines, dummies, hot laundry, fan filters, irradiated boron balls, ceramic samples, thimbles, gun barrels, and hoses.

The Burial Ground ROD reported that an estimate of the waste was 86 metric tons (94.8 tons) of boron, 1.1 metric tons (1.2 tons) of graphite, 0.51 metric tons (0.56 tons) of lead, 21.6 metric tons (23.8 tons) of lead/cadmium, and 96 metric tons (105.9 tons) of other materials. Potential contaminants include: Ag-108m, C-14, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Ni-59, Ni-63, Sr-90, Ba-133, Ca-41, cadmium, Cr+6, lead, boron, mercury, PCBs, SVOAs, TPH, and

VOAs.

Closure Info: The cleanup verification package (CVP) CVP-2006-00011 documents that remedial action of the site has met the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (ROD), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action began on February 2, 2004 and was completed on May 27, 2006. Excavation of the ten trenches, (eight oriented in a north-south direction and the other two oriented east to west) involved removing the uncontaminated overburden, the buried contaminated debris, and the underlying contaminated soil. Visual observations of the buried waste confirmed that the following items had been disposed in the Burial Ground during its operation: several thousand perforated and non-perforated spacers, piping and tubing, vertical control rods, sheet metal, boron balls, boron ball vacuums, bismuth, paint, high-dose piping, wax, casks, tar, tar paper, miscellaneous metal, mercury tubes, lead items, reactor parts and hardware, Spent Nuclear Fuel (SNF), hydraulic hoses and parts, degraded drums, glassware, concrete, electrical components, and other miscellaneous debris. Photographs of the waste site debris and remediation activities were provided in Appendix B of the CVP.

During remedial excavation and sorting, SNF was discovered on September 27, 2004. All remedial activities were suspended until the Authorization Basis could be properly assessed and revised to include the SNF. Load-out operations were re-established on April 11, 2005, for previously sorted and segregated material. All remedial activities (excavation, sorting, and load-out) resumed on October 25, 2005 and were completed on May 27, 2006. Over 75,300 metric tons (83,000 tons) of waste and contaminated soil from the Burial Ground was disposed at the Environmental Restoration Disposal Facility (ERDF). The SNF was transferred to the 100-K Basins for interim storage prior to final packaging and disposal. ERDF and approximately 9,300 bank cubic meters (BCM) of overburden soil was removed for subsequent backfill. At the conclusion of excavation activities, the elevation at the deepest part of the remedial excavation was 146 meters (480 feet) above sea level. The remediation excavation was approximately 20,500 meters squared (220,600 square feet) in area with a maximum depth of approximately 5 meters (17 feet).

Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) were identified in the RDR/RAWP and included tritium, carbon-14, cesium-137, cobalt-60, nickel-63, strontium-90, silver-108m, europium-152, europium-154, cadmium, lead and mercury. Additional waste site COCs/COPCs were identified for this site based on the observed waste forms found during remediation activities and the results of waste characterization sampling as documented in the Site Specific Instruction (SSI) for Close-Out Approach for 118-C-1. The SSI identified additional COCs/COPCs which included: americium-241, plutonium-238, plutonium-239/240, uranium-233/234, uranium-235, uranium-238, the expanded list of inductively coupled plasma (ICP) metals (arsenic, antimony, barium, beryllium, boron, cadmium, chromium, lead, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc), hexavalent chromium, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), semi-volatile organic compounds, and volatile organic compounds.

Final cleanup verification samples were collected in August and September, 2006 and May 2007 to confirm acceptability of residual contaminant concentrations in the soil. The verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP). All analytical data were found to be acceptable for decision-making purposes. The evaluation verified that the sample design was sufficient for the purpose of clean site verification. The analytical data results were stored in the Environmental Restoration (ENRE) project-specific database for data evaluation prior to submittal for archival in the

Hanford Environmental Information System (HEIS) and were summarized in Appendix A of the CVP.

Screening levels were not exceeded for the site constituents, with the exception of barium, boron, copper, lead, and molybdenum. It was believed that the presence of these constituents did not pose a risk to ecological receptors. Concentrations of barium, copper, and lead were within the range of Hanford Site background levels and boron and molybdenum concentrations were consistent with those seen elsewhere at the Hanford Site (no established background value was available for boron or molybdenum). A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

The remaining soils at the site were sampled, analyzed, and modeled. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at the ERDF.

These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. Institutional controls are required for the site to prevent uncontrolled drilling or excavation into deep zone soils. The site was verified to be remediated in accordance with the ROD and may be backfilled.

Code:	118-C-2	Classification:	Accepted
Names:	118-C-2; Ball 3X Storage Tank; 105-C Ball Storage Tank	Reclassification:	Interim Closed Out (7/30/2004)
Type:	Storage Tank	Start Date:	1/1/1969
Status:	Inactive	End Date:	1/1/1969
Description:	The site has been remediated and interim closed out.		
Location:	The site was located approximately 6 meters (20 feet) directly north of the northeast corner of the 105-C Reactor Building (original footprint).		
Process Description:	Operation of this waste site began in 1969, coinciding with the Ball 3X Project work. The project operation ended that same year. During Ball 3X Project work with a prototype-contaminated ball sorter, the tank received highly radioactive, irradiated, nickel-plated boron-steel and carbon-steel balls. The tank served as temporary storage until the balls decayed radiologically before burial. The storage box had a slope with vents at each end. One vent was used to put the balls into the tank and the other was used to remove them (following a cool down period). Approximately 9,070 kilograms (20,000 pounds) of highly activated balls remained in the storage tank. Approximately 70% of the balls remaining are boron-steel and 30% are carbon-steel.		
Waste Type:	Equipment		
Waste Description:	During Ball 3X project work with a prototype contaminated ball sorter, the tank received highly radioactive, irradiated, nickel-plated boron steel and carbon steel balls for temporary storage so that they would decay radiologically before burial. Approximately 9,070 kilograms (20,000 pounds) of highly activated balls remain in the storage tank. Seventy percent of the balls remaining are boron steel, and thirty percent are carbon steel. A 1987 evaluation of the tank waste estimated that 80 curies of cobalt-60 and 1.6 curies of nickel-63 are present. Potential contaminants include: Co-60, Ni-63, Sr-90, Cs-137, Eu-152, Eu-154, U-238, Pu-238, Pu-239/240, chromium, lead, mercury		

Closure Info: Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives were documented in the Interim Remedial Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units (100 Area Burial Grounds ROD) (EPA 2000) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev. 4).

Waste site contaminants of concern (COCs) were identified through process knowledge and listed in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-2001-35). The COCs included cobalt-60 and nickel-63. Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern. HEIS samples (J016W0 through J016W9 and J016V6 through J016V9) were collected on January 14, 2004.

Remedial action began on November 10, 2003. Excavation of the site involved removing the overburden materials, debris, and underlying contaminated soil. Both the collection tank and loose boron balls exposed during the excavation were removed. The tank was a light gage stainless steel tank installed about two feet below grade, about 8 feet long x 8 feet deep and 4 feet wide (long rectangular box) with two ~4 inch diameter riser pipes in the top of the tank that were about 4 feet apart and protruded above ground about 2 feet. The box tank was installed at a slight slope, possibly to allow the 1-centimeter (0.39 inch) diameter nickel-plated 1 weight % borated stainless steel balls to roll to one end. The field staff reported that the light gage stainless steel box tank was about half full of the 3/8-inch diameter metal balls. The tank was flattened, crumpled up and hauled off with the soil waste to ERDF. There was no external piping to or from the tank. There was no exposed piping removed during the excavation. All contaminated materials were disposed of at the ERDF.

At the completion of remedial action, the site excavation was approximately 123.8 meters squared (1,333 square feet) in area, while the former staging pile area was approximately 166.1 meters squared (1,787 square feet). The excavation had an average depth of approximately 3.1 meters (10.3 feet). Approximately 420 metric tons (463 tons) of material, including soil and debris, were removed from the 118-C-2 Burial Ground site and transferred to ERDF for disposal. Both the collection tank and loose boron balls exposed during the excavation were removed and transferred to ERDF. There was no piping associated with this remediation.

The CVP demonstrated that remedial action at the site, including the staging pile area, has achieved the RAOs and corresponding RAGs established in the approved 100 Area Burial Grounds ROD (EPA 2000) and RDR/RAWP (DOE/RL-96-17, Rev. 4). The contaminated materials from the site and staging pile area have been excavated, removed, and disposed of at the ERDF. The remaining soil at the site has been sampled, analyzed, and modeled. The analytical and modeling results also indicate that residual concentrations at the 118-C-2 Burial Ground site and staging pile area will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The site is verified to be remediated in accordance with the 100 Area Burial Grounds ROD and may be backfilled. The CVP demonstrated the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore deep zone institutional controls are not required.

Code:	118-C-4	Classification:	Accepted
Names:	118-C-4; 105-C Horizontal Control Rod Storage Cave	Reclassification:	Interim Closed Out (9/11/2003)
Type:	Storage	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1969

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- Description:** The site has been remediated and interim closed out. The site consisted of two steel-plate tunnels covered with 1.2-meters (4-foot) of soil, gravel and asphalt emulsion. The two tunnels were grouted onto a concrete floor that had three equally spaced 0.6-meter (2-foot) diameter by 0.6-meter (2-foot) deep french drains beneath the centerline of the long axis of the structure. The french drains removed water runoff that could collect between the tunnels in the earth shielding.
- Location:** The site was located south of the 105-C Reactor Building, within the 105-C exclusion area fence.
- Process Description:** The tunnels were used for temporary storage of control rods, and possibly miscellaneous equipment, to allow radioactive decay prior to disposal. Three french drains were located along the center of the structure floor for the removal of precipitation runoff that could potentially percolate and collect between the tunnels.
- Related Sites/ Structures:** The site was associated with the operation of the 105-C Reactor.
- Waste Type:** Equipment
- Waste Description:** The tunnel was used for temporary storage for radioactive decay pending subsequent disposal. Some miscellaneous components are currently in the rod cave. The radiation reading at the entrance to the tunnel with the door open was once documented to be 5 millirads/hour.
- Closure Info:** The rod cave was demolished as part of decontamination and decommissioning activities in March 2003. The cleanup verification package (CVP) documents completion of remedial action for the soil beneath the former 118-C-4 Horizontal Control Rod Cave. The 118-C-4 waste site consisted of the soils underlying the former 118-C-4, 105-C Horizontal Control Rod Cave (rod cave) building.

Field screening was used to guide the excavation to quickly assess the presence and level of contamination. Field screening for the 118-C-4 site included using a radiological data mapping system survey. The radiological mapping survey was performed over more than 50% of the site excavation surface area. Final cleanup verification samples were collected following variance sampling. Cleanup verification sampling was conducted on May 15, 2003. Each verification sample was a composite formed by combining soil collected at four randomly selected nodes within each sampling area. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The sample design methodology and sample location figure is presented in the calculation briefs for variance analysis and sample design.

Remedial action objectives and goals from the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA, 1995) are used for the 118-C-4 site. Although the 118-C-4 site is not identified in the ROD, the remedial action objectives and goals documented in the ROD, and in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17), are designated for the 118-C-4 site in the Approved Action Memorandum for the 100 B/C Area Ancillary Facilities and the 108-F Building Removal Action (EPA, 1997 CCN 042276). The remedial action goals and objectives were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology.

The selected remedial action for the 118-C-4 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility near the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and

protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs) and contaminants of potential concern (COPCs).

Waste site COCs for the 118-C-4 site were identified through process knowledge and are included in Table 1-4 of the SAP (DOE/RL-96-22) as specified in the Technical Memorandum Sampling and Analysis Planning Summary 118-C-4 Rod Cave (CCN 048578). The COCs consist of the following:

americium-241, barium, arsenic, cadmium, cesium-137, total chromium, cobalt-60, hexavalent chromium, europium-152, lead, europium-154, europium-155, uranium-234, plutonium-238, uranium-235, plutonium-239/240, uranium-238, strontium-90 and mercury.

COPCs identified through process knowledge included selenium, silver, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). None of the 7 PCB Aroclors nor any of the 103 VOCs and SVOCs analyzed for were detected in cleanup verification samples at concentrations greater than the analytical method practical quantitation limits (PQLs). These analyses were performed using the EPA SW-846 Methods 8082 for PCBs, 8260 for VOCs, and 8270 for SVOCs (EPA 1986). The PCB, VOC, and SVOC results are included in Appendix A of the CVP document.

The COCs listed above and the COPCs selenium and silver were evaluated throughout the CVP as COCs to demonstrate cleanup verification of the 118-C-4 site. Selenium and silver were selected and included as COCs because they are identified as potential contaminants for the former rod cave structure, which the 118-C-4 site underlies (DOE/RL-97-33). None of the other COPCs were selected because they were not detected at concentrations above the analytical method practical quantitation limits (PQL).

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 122 square meters (1,310 square feet) in area with an approximate depth of 0.85 meters (2.8 feet). Approximately 453 metric tons (500 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the 118-C-4 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

CVP-2003-00015 demonstrates that remedial action at the 118-C-4 site has achieved the RAOs and corresponding RAGs established in the ROD and RDR/RAWP. The remaining soils at the 118-C-4 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 118-C-4 site containing Contaminates of Concerns at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The 118-C-4 site is verified to be remediated in accordance with the RAOs and RAGs of the ROD and may be backfilled.

Code: 128-C-1	Classification: Accepted
Names: 128-C-1; 100-C Burning Pit	Reclassification: Interim Closed Out (8/10/2005)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out.	

- Location:** The site was located east of the 105-C Reactor Building and west of the eastern leg of the 100-B/C perimeter road. It was bounded on the north by an export water line and on the east by a soil berm.
- Process Description:** This unit was a vegetation and ash-covered field strewn with pieces of green, clear, and bright blue glass; small glass bottles; metallic wastes such as rusted cans, auto parts and assorted scrap metal; chunks of concrete; and pieces of asbestos transite.
- Waste Type:** Misc. Trash and Debris
- Waste Description:** The burning pit received combustible materials such as office wastes, paint wastes, vegetation, and chemical solvents. Large metal items such as hardware, machinery, and other noncontaminated equipment were also deposited at the site.
- Closure Info:** The REMAINING SITES VERIFICATION PACKAGE FOR THE 128-C-1 BURN PIT WASTE SITE (Attachment to Waste Site Reclassification Form 2005-019) report demonstrated that the waste site meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.

Cleanup verification samples were collected and analyzed 2/2/05 for the established contaminants of concern (COCs). Waste site COCs identified through process knowledge were: lead and asbestos. The COPCs were: arsenic, barium, boron, cadmium, chromium, copper, mercury, molybdenum, silver, zinc, PCBs, SVOCs and TPH.

Based on the Work Instruction for Verification Sampling of the Waste Site 128-C-1, Burn Pit Waste Site, statistical sampling was required for this site because the spatial distribution of potential residual soil contamination over the study area (site) was uncertain. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

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| Code: 132-C-1 | Classification: Accepted |
| Names: 132-C-1; 105-C Reactor Stack Site; 116-C Reactor Exhaust Stack Site | Reclassification: No Action (9/11/2003) |
| Type: Burial Ground | Start Date: 1/1/1952 |
| Status: Inactive | End Date: 1/1/1969 |
- Description:** The site has been reclassified to "No Action". This site was a burial area that contained rubble from the 105-C Reactor Stack, also known as the 116-C Reactor Exhaust Stack. The reactor stack was 5.1 meters (16.6 feet) in diameter and 61 meters (200 feet) high. It operated from 1952 through 1969, exhausting confinement air from the work areas in the reactor. The site currently appears as a vegetation-free, cobble-covered field adjacent to the 100-C Reactor. There are no markings or posts to identify it.
- Process Description:** Exhaust air flowed through concrete ducts from the 105-C Building directly out the exhaust stack. Following completion of the confinement project in the 1950's, the air was diverted via underground, reinforced concrete ducts to the 117-C Filter Building. After flowing through the filters, the air went through below-grade and above-grade concrete ducts into the exhaust stack.
-

Related Sites/ Structures: Air was exhausted from the 105-C Reactor Building and the 117-C Filter Building.

Waste Type: Demolition and Inert Waste

Waste Description: Sampling of the stack inlet was performed in 1976, using standard smear techniques. Low-level beta and gamma radiation was detected in the stack. It was estimated that the interior of the unit contained approximately 2.8 millicuries of radioactive materials. At the time of demolition (1983), the interior of the reactor stack contained approximately 2 millicuries of radioactive materials.

Closure Info: Based on this evaluation, the historical data supports no action interim closure of the 132-C-1 site. The site achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17) and the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA, 1999). Residual soil concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESRAD modeling.

Code: 132-C-3

Classification: Accepted

Names: 132-C-3; 117-C Filter Building

Reclassification: No Action (9/11/2003)

Type: Process Unit/Plant

Start Date: 1/1/1961

Status: Inactive

End Date: 1/1/1969

Description: The site has been evaluated and reclassified to "No Action". The site now resembles a gravel parking lot.

Location: The site was located east of the southeast corner of the 105-C Reactor Building.

Process Description: The unit was a reinforced concrete structure that was 10.7 meters (35 feet) high, and was constructed such that approximately 8.2 meters (27 feet) was below-grade, and 2.4 meters (8 feet) was above grade. The maximum thickness of the walls and floors was 0.6 meters (2 feet), while the majority was 0.3 meters (1 foot) thick or less. The ducts were made of reinforced concrete with a maximum wall thickness of 30 centimeters (12 inches). The inlet tunnel was approximately 12 meters (40 feet) long, and the exhaust tunnel was approximately 18 meters (60 feet) long.

Related Sites/ Structures: The building received exhaust fan discharge through an inlet duct from the 105-C Reactor Building and discharged the filtered air through a discharge duct and out the 116-C Stack.

Waste Type: Demolition and Inert Waste

Waste Description: Total radionuclide inventory in this unit is estimated to be 0.84 millicuries. The radionuclides comprising this inventory are tritium, carbon-14, cobalt-60, cesium-137, strontium-90, europium-154, plutonium-152, and plutonium-239/240. Of these radionuclides, strontium-90 is the most restrictive in the Allowable Residual Contamination Level (ARCL) calculations calculations.

Closure Info: Using the greatest activities from the pre-demolition characterization data to represent residual contamination levels over 100% of the inner surface area of the former facility, RESidual RADioactivity (RESRAD) modeling was performed in 2003 to support the previous decision to demolish and bury the facility in place. The RESRAD modeling accounts for radioactive decay from 1988 (the year of building demolition) to 2003, and conservatively predicts that the site achieves the dose limits and risk objectives for rural residential land use, groundwater protection, and river protection.

Based on this evaluation, the historical data supports no action interim closure of 132-C-3. The site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL 96-17), implemented for the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA,1999). Any residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that based on RESRAD modeling, residual concentrations at the site pose no threat to groundwater or the Columbia River.

Code: 600-232 **Classification:** Accepted

Names: 600-232; 100B Electrical Laydown Area **Reclassification:** Interim Closed Out (1/27/2005)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site has been remediated and interim closed. The area has been returned to its natural appearance.

Location: The site was located approximately 200 meters south of 105-C Reactor Building and north of Route 6. The railroad tracks run east-west through the site.

Waste Type: Chemicals

Waste Description: Tar

Waste Type: Equipment

Waste Description: The treated wood ends of the utility poles are categorized as dangerous waste. The site also contained various electrical utility materials such as steel cable, aluminum high-voltage wire, aluminum beams, aluminum poles, and insulators.

Waste Type: Equipment

Waste Description: The aluminum wire beams and poles are potentially recyclable.

Closure Info: The Remaining Sites Verification Package (attachment to reclass form 2004-066) demonstrates that the site meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-22. Rev. 4) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA, 1999). This report also shows that site soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario, and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The primary contaminants of potential concern (COPCs) for the soil at the site are associated with the presence of the tar-like material and treated wood poles. The COPCs include total petroleum hydrocarbons (TPHs), aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silicone, silver, sodium, vanadium, zinc, polychlorinated biphenyls (PCBs), and semivolatile organic constituents (SVOCs).

A cleanup action was initiated on February 19, 2004. Visual observation of the wooden poles indicated that the poles were treated throughout; therefore, the poles were size reduced and

removed for disposal to the Environmental Restoration Disposal Facility (ERDF). A layer of soil underlying the poles and in areas with visible tar was excavated and disposed due to the presence of TPH associated with the tar. Remedial action efforts included flagging the visible tar areas and removing the tar by excavating a layer of soil. In areas where the poles appeared to have been treated, a 30 centimeter (12 inch) layer of soil was removed. Where there were isolated, scattered small tar droppings, approximately 8 centimeters (3 inches) of soil was removed. The cleanup action also included a very small area to the east of the 50 x 50 meters (164 x 164 feet) area that contained similar surface contamination. From March 5 through April 16, 2004, a total of 9,005 metric tons (9,905 tons) of debris were sent to the ERDF for disposal. After the debris, tar, and soil were removed, verification samples were collected.

The verification sample numbers are too numerous to list, the results have been stored in the ENRE project-specific database prior to archiving in HEIS and are included in Appendix A of the RSVP attached to the reclass form 2004-066.

The verification sampling results support a reclassification of the 600-232 site to interim closed out. The analytical results from underlying soil samples were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

Code: 600-233	Classification: Accepted
Names: 600-233; Vertical Pipe Near 100B Electrical Laydown Area	Reclassification: Interim Closed Out (12/8/2005)
Type: Storage Tank	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. Originally the site consisted of one vertical pipe extending 1.5 meters (4.9 feet) from the ground. During remedial activities two small pipes were discovered and added to the site, for a total of three. The area has been revegetated with grasses and native shrubs.
Location:	The site was located approximately 250 meters (820 feet) southeast of the 105-C Reactor Building and just north of the railroad tracks, inside the 600-232 waste site.
Waste Type:	Equipment
Waste Description:	Steel pipelines.
Closure Info:	The REMAINING SITES VERIFICATION PACKAGE FOR THE 600-233 WASTE SITE, VERTICAL PIPE NEAR 100-B ELECTRICAL LAYDOWN AREA (Attachment to Waste Site Reclassification Form 2005-041) report demonstrated that the waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD) (EPA 1999).

During remedial activities and exploratory excavations, a 0.025-meter (1-inch) pipe segment and a 0.019-meter (0.75-inch) steel pipe were also discovered in the site vicinity, generally laying perpendicular to the 0.064-meter (2.5-inch) pipe. These discovered pipelines contained residual liquids that were drained and characterized for disposal and subsequently determined to have been used for diesel fuel supply unrelated to the vertical pipe. It was decided that the discovery pipelines posed no adverse risk to human health or the environment and could be abandoned in place

Remediation of the waste site consisted of the removal of the 0.064-meter (2.5-inch) steel pipeline via excavation of a 23-meter (75-foot)-long by 0.5-meter (1.6-foot)-deep trench. The eastern end of the pipeline was discovered to terminate with a pipe cap, and the pipeline was removed for disposal at the Environmental Restoration Disposal Facility. No radiation was detected above background levels during excavation, and no staining or anomalous materials were observed.

Cleanup verification samples (J03WJ1 through J03WJ4), including QA/QC samples, were collected on 8/9/05 and analyzed for the established contaminants of concern (arsenic, lead, TPH, cadmium, PCBs, SVOCs, nickel, chromium). The results illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep).

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River and support a reclassification of this site to interim closed out. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

through January 11, 2010 to remove the associated pipelines. Remediation removed all pipes that were associated with the junction box; however, the portion of pipe that was removed did not extend to the river. Process history indicates a portion of the pipe was previously removed; the portion of the pipe that was there appears to lead to the 100-D-65 site, a spillway that does lead to the river shoreline. The two sites were not connected and the potential association could not be confirmed.

A section of pipeline associated with 100-D-65 waste site was uncovered during remediation of the 100-D-1 waste site. The 100-D-65 pipeline was left in place and is located at the western end of the 100-D-1 waste site excavation. It has been assigned to the 100-D-105 waste site.

A total of approximately 495 bank cubic meters (647 bank cubic yards) of soil and debris were removed and directly loaded for disposal at Environmental Restoration Disposal Facility (ERDF).

The cumulative COPCs for the 100-D-1 waste site are americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, barium, cadmium, chromium (total), hexavalent chromium, lead, mercury, selenium, silver, PCBs, VOCs, SVOCs, and TPH. While not COPCs, arsenic, antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, vanadium, and zinc concentrations were included in the expanded inductively coupled plasma (ICP) metals analytical list.

Code: 100-D-2	Classification: Accepted
Names: 100-D-2; Lead Sheeting; Solid Waste Site	Reclassification: Interim Closed Out (3/19/2008)
Type: Foundation	Start Date:
Status: Inactive	End Date:
Description:	The site appeared as a small lead sheet covering a concrete pad. It was not marked or posted.
Location:	The unit was located southwest of the 185-D Building about 16 meters (52 feet) north of an east/west roadway and 16 meters (52 feet) west of the access road to the west side of the 185 Building.
Waste Type:	Construction Debris
Waste Description:	
Closure Info:	The Remaining Sites Verification Package for the 100-D-2 Lead Sheeting, RSVP-2007-030, has documented that site verification sampling results support a reclassification to Interim Closed Out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 1004U-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Remediation of the waste site was performed on April 12, 2007. The lead sheet, which was approximately 0.64 centimeters (0.25 inches) thick, was removed and placed in a drum for later treatment and disposal to the Environmental Restoration Disposal Facility (ERDF). The soil surrounding the concrete pad was moved aside to expose the concrete pad for inspection. The concrete was determined to be solid to at least a depth of 0.6 meters (2 feet).

The 100 Area Remedial Action Sampling and Analysis Plan (SAP) specified lead as the

contaminant of potential concern (COPC) for the site. Although not COPCs, the expanded list of inductively coupled plasma metals was analyzed and included arsenic, antimony, barium, beryllium, boron, cadmium, total chromium, cobalt, copper, manganese, molybdenum, nickel, phosphorous, selenium, silver, strontium, tin, uranium, vanadium, and zinc. Due to the potential of handling sulfuric acid, mercury and soil pH were also analyzed. Hexavalent chromium was included as a COPC for verification sampling because of its presence as a contaminant in groundwater and the proximity of the site to historical sodium dichromate handling facilities in the 100-D Area.

Verification soil sampling was performed on October 8, 2007, with one soil sample collected adjacent to each side of the concrete pad. Each sample consisted of 20 aliquots of soil distributed across the surface (0 to 0.15 meters [0 to 6 inches]) below the existing ground surface, combined into one sample representative of each of the four sides. The analytical results indicated the presence of lead up to 578 milligrams/kilogram, exceeding the direct exposure cleanup criteria. Additionally, a sample chipped from the surface of the concrete exhibited lead at a concentration of 32,900 milligrams/kilogram. Therefore, additional excavation to remove the concrete pad and surrounding soil was performed on October 15, 2007. Approximately a total of 216 metric tons (239 US tons) of soil and concrete were excavated and disposed of at ERDF.

Following the October 15th excavation, a second set of verification samples were collected on October 17, 2007, to determine if the remedial action was adequate to support site closure. The analytical results of this sampling indicated that the waste removal action achieved compliance with the RAOs and RAGs. The results of the verification sampling were used to make reclassification decisions in accordance with the TPA-MP-14 procedure in the Tri-Party Agreement Handbook Management Procedures.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This site did not have a deep zone; therefore, no deep zone institutional controls were required.

Code:	100-D-3	Classification:	Accepted
Names:	100-D-3; Silica Gel; Solid Waste Burial Ground	Reclassification:	No Action (3/12/2009)
Type:	Burial Ground	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been reclassified to No Action. It was a suspected burial ground that would have received contaminated silica gel from the drying towers in the 115-D/DR building. The site has been surface stabilized and resembles a gravel parking lot.		
Location:	The site is located east/northeast of the south end of the 115-D/DR Building site.		
Process Description:	The site was used to contain contaminated silica gel removed from the drying towers in 115-D. Inert gas (helium and/or carbon dioxide) was circulated through the 105-D Reactor for the purpose of removing moisture. The gas circulation system was housed in the 115-D Building and consisted of blowers, silica gel drying towers, and filters. Silica gel is a granular material made from sodium silicate. It was used as a desiccant to reduce the humidity of the reactor gas and was regenerated by condensing the moisture. The moisture-absorbing efficiency of the silica gel was reduced as the material aged and eventually required removal from the gas circulation system.		

Waste Type: Abandoned Chemicals
Waste Description: The site contains contaminated silica gel removed from drying towers in the 115-D/DR Building.

Closure Info: Three locations characteristic of disturbed soil were identified in the vicinity of the reported silica gel burial ground. The suspected primary location for the silica gel burial ground was excavated during remediation of the 116-D-2/116-D-2A waste site (BHI 2000). The presence or absence of the silica gel at this location would have been difficult to discern given that the physical characteristics of the silica gel waste resemble soil (dark brown silicate material) and that the silica gel will have been expected to have decomposed after more than 40 years in contact with soil moisture.

Two alternative locations based on geophysical survey data were excavated. Neither location contained evidence of silica gel. Soil samples collected within the excavation did not detect carbon-14 or tritium above the minimum detectable activity (MDA).

One location was remediated in 1999 as the 116-D-2 waste site. The other two were excavated as part of the 100-D-3 site investigation, but no evidence of waste was found.

The radionuclide associated with spent silica gel from the 100 Area reactors was identified as carbon-14 (Miller and Wahlen 1987). This is supported by a 1963 status report that discusses carbon-14 as being a contaminant in the condensate from the silica gel dryers (Barton 1963).

Excavation of the two potential locations for the 100-D-3 waste site was completed on October 9, 2007. Both sites were excavated to approximately 4.5 m (15 ft) below ground surface. No evidence of waste was encountered at either location. The sites were backfilled a few days later to eliminate the safety hazard of an open excavation.

Two test pits were excavated on November 5, 2008 to collect verification samples based on consultation with the Washington Department of Ecology. No radiological contamination was detected during field excavation. Soil samples were collected at four different depths from the center of each of the two potential locations and analyzed for carbon-14 and tritium. Carbon-14 and tritium were not detected above the MDA in any of the soil samples. Therefore, this site has been reclassified to No Action.

Code: 100-D-4	Classification: Accepted
Names: 100-D-4; 107-D5; 107-D-5; 107-DR Sludge Trench #5; Sludge Trench #5	Reclassification: Interim Closed Out (3/25/1999)
Type: Trench	Start Date: 1/1/1955
Status: Inactive	End Date:

Description: The 100-D-4 site was constructed in 1953. This pit and two other identified sludge pits were associated with maintenance cleanout of the 116-DR-9 Liquid Effluent Retention Basin, which was constructed in the late 1940s. The 116-DR-9 Liquid Effluent Retention Basin was used to hold reactor effluent water for a brief period of time, allowing radioactive decay and thermal cooling to occur before the water was discharged to the Columbia River. The sludge pits were built for disposal of sludge removed from the bottom of the effluent retention basin to enable periodic maintenance and repairs to the basin during operation of the 100-D and 100-DR Reactors. There is no indication from available records that this sludge pit directly received any regular and/or high-volume liquid effluent wastes. The sludge pit consisted of an approximately 630-square meter (6,779-square feet) unlined excavation (bottom dimension) with moderately sloped side walls. This pit extended to a depth of about 3 m (10 ft) below grade, and was surrounded by native sandy gravel soils at the base and side walls of the excavation. After shutdown of the 100-D and 100-DR Reactors in the 1970s, subsequent

decommissioning of the effluent retention basin and associated sludge pits (as part of the Radiation Area Remedial Action Program) included placement of approximately 2 m (6 ft) of materials within the sludge pit. These materials consisted primarily of soil with some miscellaneous debris from the effluent basin and surrounding area. This sequence of material placement was followed by placement of approximately 1 m (3 ft) of clean soil cover for interim radiological, health, and safety protection purposes. The materials previously placed over the engineered pit structure (original pit excavation) are identified collectively as overburden materials.

Location: The site is located on the east side of the 107-DR Retention Basin, at the southeast corner.

Process Description: In the Spring of 1953 sludge was removed from the bottom of the 107-DR Retention Basin (116-DR-9) to facilitate repairs. The sludge was deposited in this and other nearby trenches.

Waste Type: Sludge

Waste Description: The site received radioactively contaminated sludge from the bottom of the 107-DR Retention Basin. From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include the following (DOE-RL 1998a): Americium-241, Cobalt-60, Cesium-137, Europium-152, Europium-154, Europium-155, Plutonium-238, Plutonium-239/240, Strontium-90, Hexavalent chromium, and Polychlorinated biphenyls (PCBs).

Closure Info: Excavation of the 100-D-4 site began on March 18, 1997, by removing the overburden materials and underlying contaminated soil. Based on field screening, overburden materials that were identified as potentially clean were placed in stockpiles for potential use as backfill. Overburden materials that were found to be contaminated were disposed of at the ERDF. On March 27, 1997, the excavation had reached the design limits at the base of the engineered structure (El. 135.0 m [443 ft]) and closeout sampling was initiated.

During excavation, field screening and onsite gamma energy analysis (GEA) at the Radiological Counting Facility (RCF) were used to distinguish between potentially clean materials and contaminated materials for disposal at ERDF. Based on the size of the site, 24 random samples were collected for GEA and submitted to the RCF for analysis. Data from these samples were used to corroborate data obtained from field screening and to assist in waste characterization. Screening technologies, such as hand-held and cart-mounted sodium iodide (NaI) detectors, were used to guide day-to-day excavation activities and provided 100% coverage of the entire final excavation. The GEA indicated a low degree of variability and contaminant levels below the lookup values. These samples were used to determine the number of final cleanup verification samples required. Four final verification composite samples were taken and sent to an offsite laboratory for analysis.

Waste materials that were excavated, loaded into shipping containers, and disposed of at the ERDF consisted of soils not meeting direct exposure RAGs based on field screening results.

For the exposed surface of the excavation, initial confirmation sampling and testing using GEA began on March 28, 1997, to determine the number of final verification samples at the base of the engineered structure. Verification sampling and testing were finished on September 24, 1997 (El. 132.1 m [433 ft]).

At the completion of the remedial action, the excavation area was approximately 630 square meters (6,779 square feet) at a depth of 2.9 m (9.5 ft), and approximately 1,678 metric tons (1,850 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 135 m (443 ft). Clean backfill will be taken from overburden and Borrow Pit 21, which is located due south of the 100-D-4 site. The material in the borrow pit has been surveyed in accordance with the SAP (DOE-RL 1998a) and is appropriate for use as backfill. The overburden soil is also

appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	100-D-5	Classification:	Accepted
Names:	100-D-5; Undocumented Solid Waste Site; Undocumented Solid Waste Site Near 103-D; Waste Site Near 103-D	Reclassification:	Interim Closed Out (4/23/2001)
Type:	Burial Ground	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1950
Description:	The site was remediated and closed out with the 100-D, Group 3 waste sites.		
Location:	The site is located adjacent to the east side of the 103-D Building, north of the 105-D Building.		
Process Description:	The effluent water lines from 105-D and 105-DR join inside a concrete junction box located within the reactor exclusion area at a point north of 105-D and east of 103-D. At the completion of the underground line tie-in phase in 1950, contaminated soil and pipes were also placed in the excavation and buried. Later the steel effluent pipes were replaced with reinforced concrete piping and the junction box was no longer needed.		
Related Sites/ Structures:	The site is associated with 105-D and 105-DR.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The waste included reactor cooling water discharge, and debris generated in a 1950 modification. The contaminated soil and debris were removed and taken to ERDF along with 100-D, Group 3 waste site remediation (100-D-48:3, 100-D-49:3, and 100-D-6).		
Closure Info:	100-D-48:3, 100-D-49:3, 100-D-5 and 100-D-6 were addressed as a group. The information below documents information for the group of sites.		

The sites included in this remediation are 100-D-48:3, 100-D-49:3, 100-D-5, and 100-D-6. The entire remedial action for these sites is referred to as the 100-D-48:3/49:3 pipelines site. Remedial action at the 100-D-48:3/49:3 site began on October 28, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation was completed. The excavation design depth generally corresponded with the invert elevation of the pipelines.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 24,574 square meters (264,517 square feet) in area with a maximum depth of approximately 5.7 meters (18.7 feet). Approximately 55,561 metric tons (61,245 tons) of material from the 100-D-48:4 and 100-D-48:3/49:3 pipeline sites combined were disposed of at ERDF. Overall, approximately 107,266 metric tons (118,241 tons) from all D Area pipeline sites were disposed of at the ERDF through July 2000. Cleanup verification sampling began on June 7, 2000 (for the overburden piles), and was finished on October 4, 2000 (in the excavation). The excavation is being backfilled with appropriate materials to match the surrounding surface grade (average elevation of 143.7 meters [471 feet]).

The CVP demonstrates that the remedial action at the 100-D-48:3/49:3 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 100-D-48:3/49:3 Pipelines site and overburden have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:3/49:3 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the overburden and shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:3/49:3 Pipelines site is verified to be remediated in accordance with the ROD.

Code:	100-D-6	Classification:	Accepted
Names:	100-D-6; 118-D-4D; Burial Ground 4D; Buried VSR Thimble; Minor Construction Burial Ground #1	Reclassification:	Interim Closed Out (4/23/2001)
Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	The site was remediated and interim closed out with the 100-D, Group 3 waste sites.		
Location:	The solid waste burial ground site was located about 300 meters (1000 feet) east of the 105-D Reactor Building, outside the reactor security fence and south of the railroad spur that services the 100-D Area.		
Process Description:	The burial ground sat astride the two 152-centimeter (60-inch) reactor effluent lines. It received contaminated thimbles and other solid reactor materials related to the Ball 3X installation project in 1953.		
Waste Type:	Equipment		
Waste Description:	The burial ground contains contaminated thimbles, radioactive guides and miscellaneous waste removed from the 105-D Reactor during Ball 3X outage. The thimbles were made of aluminum, similar to that used for process tubes. Isotopic analysis of process tubes indicated the presence of manganese-54 and cobalt-60. The thimbles are expected to have similar composition. When buried, the thimbles' exterior surfaces would have been contaminated with activated graphite products and any remaining potassium borate solution from within the thimble tubes.		
Closure Info:	100-D-48:3, 100-D-49:3, 100-D-5 and 100-D-6 were addressed as a group. The information below documents information for the group of sites.		
	<p>The sites included in this remediation are 100-D-48:3, 100-D-49:3, 100-D-5, and 100-D-6. The entire remedial action for these sites is referred to as the 100-D-48:3/49:3 pipelines site. Remedial action at the 100-D-48:3/49:3 site began on October 28, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation was completed. The excavation design depth generally corresponded with the invert elevation of the pipelines.</p>		

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 24,574 square meters (264,517 square feet) in area with a maximum depth of approximately 5.7 meters (18.7 feet). Approximately 55,561 metric tons (61,245 tons) of material from the 100-D-48:4 and 100-D-48:3/49:3 pipeline sites combined were disposed of at ERDF. Overall, approximately 107,266 metric tons (118,241 tons) from all D Area pipeline sites were disposed of at the ERDF through July 2000. Cleanup verification sampling began on June 7, 2000 (for the overburden piles), and was finished on October 4, 2000 (in the excavation). The excavation is being backfilled with appropriate materials to match the surrounding surface grade (average elevation of 143.7 meters [471 feet]).

The CVP demonstrates that the remedial action at the 100-D-48:3/49:3 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 100-D-48:3/49:3 Pipelines site and overburden have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:3/49:3 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the overburden and shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:3/49:3 Pipelines site is verified to be remediated in accordance with the ROD.

Code: 100-D-7	Classification: Accepted
Names: 100-D-7; Undocumented Solid Waste Site	Reclassification: Interim Closed Out (10/10/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site contains a variety of debris such as broken concrete, brick, vitrified clay pipe, wood, rebar, various types of metal, lathe turnings, empty oil, solvent, paint cans, tar, and a white substance in two localized areas. The site appears to have additional debris buried under the surface and there is evidence of disturbance from heavy equipment. Several areas of stressed vegetation and two areas of subsidence were also observed.
Location:	The site was located northeast of the 128-D-2 Burn Pit and approximately 700 meters (2,300 feet) northeast of the 105-D Reactor Building.
Process Description:	This site received solid wastes related to the construction and/or operation of the 100-D Area.
Waste Type:	Misc. Trash and Debris
Waste Description:	Wastes include vitrified clay pipe, concrete, empty metal containers, glass, metal and wooden debris.
Closure Info:	Remediation at the 100-D-7 waste site was performed between December 22, 2009 and March 6, 2010. Because the 100-D-7 site was a debris site, the excavation focused on the areas identified by geophysics; however, the excavation extent was conducted as necessary to remove waste and debris and remove contaminated soil. The drawings, visual observations radiological surveys, and collection of in process soil samples guided the extent of excavation during remediation. Approximately 24,120 bank cubic meters (31,548 bank cubic yards) of contaminated soil and debris were removed from the 100-D-7 waste site. The soil and debris

were staged in a staging pile to the southeast of the 100-D-7 waste site before being loaded for disposal at the Environmental Restoration Disposal Facility (ERDF). The staging area includes a smaller area where topsoil from the waste sites was placed for use on top of the backfill to support successful revegetation as required by the ecological review for the 128-D-2 and 100-D-7 waste sites. All staged waste has been disposed to the ERDF. The staging area was then scraped to remove surface contaminated soil, which was disposed to the ERDF.

Only a portion of the 100-D-7 waste site within the WIDS boundary required remediation. An agreement with the Washington State Department of Ecology (Ecology) that the areas within the WIDS boundary where remediation was not performed would become a separate decision unit subject to additional sampling for closeout of the site (WCH 2009c).

Eight anomalies were initially identified during the remediation at the 100-D-7 waste site. These consisted of three 3.8-L (1-gal) bottles containing liquid (anomalies 100D-AN-10-001, 100D-AN-10-002, and 100D-AN-10-010); three areas of uncontained solid material: white powder (anomaly 100D-AN-09-082), a pink solid (anomaly 100D-AN-10-003), and a yellow/brown solid (anomaly 100D-AN-10-004). The remaining two anomalies are identified as grease and a metal cylinder (anomalies 100D-AN-10-006 and 100D-AN-10-008). The solid materials were sampled and characterized prior to removal and shipment to ERDF. Anomaly 100D-AN-09-082 was determined by the project engineer to be the same material as anomaly 100D-AN-09-065, so no sample was required for characterization. Anomalies 100D-AN-10-001, 100D-AN-10-002, 100D-AN-10-010, and 100D-AN-10-008 were overpacked and transferred to the 118-D-3:2 waste site anomaly characterization area.

Code:	100-D-8	Classification:	Accepted
Names:	100-D-8; 105-DR Process Sewer Outfall Site; 1907-DR; Undocumented Liquid Waste Site	Reclassification:	None
Type:	Outfall	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1968
Description:	In 1978, the outfall structure was demolished, leveled, and covered to blend with the riverbank appearance.		
Location:	The site is located upstream of the 181-D Pumphouse on the Columbia River bank.		
Process Description:	The outfall was constructed in 1949 as a spillway for an emergency discharge for the DR Reactor. It consisted of a 1.8-meter (72-inch) diameter, reinforced concrete pipe. The pipe discharged into a concrete box flume that spilled onto a grouted riprap surface and extended about 13.1 meters (43 feet) beyond the low-water level of the Columbia River. In 1950 it was modified to increase the discharge flow capacity. Historical records indicate the outfall ceased operation in 1968 and was idle until 1978, when it was demolished.		
Waste Type:	Water		
Waste Description:	The outfall was used to discharge waste water from the 183-DR and 190-DR Water Treatment Facilities. Effluents included filter backwash effluent, storm runoff, and chemical discharges resulting from spills or releases relating to water treatment facilities. There is a potential for radioactive contamination from the 100-D Area Cask Pad storm drains.		
Closure Info:	Remediation was performed from August 19, 2008 through February 8, 2009. Approximately 1,170 bank cubic meters (BCM) (1,530 bank cubic yards [BCY]) of concrete debris, asphalt emulsion, tan fibrous material, black plastic, grout, steel, and soil was removed from the waste site and disposed at the Environmental Restoration Disposal Facility (ERDF). An additional 0.53 BCM (0.69 BCY) of soil was removed from the area at the south degreasing pit and approximately 1.0 BCM (1.2 BCY) of soil was removed from the south radiological		

contamination area. This material was also disposed of at ERDF.

No further remediation can be conducted at the location with the cesium-137 direct exposure exceedance, without incurring significant adverse impacts to the bat colonies at the 100-D-50:2 pipeline subsite. A study conducted between June 2007 and September 2008 (WCH 2009a) showed that the bats at the 100-D-50:2, Reactor Cooling Water Pipelines from 190-DR Pumphouse subsite use the site as a maternity roost where they give birth and rear their young.

The preferred alternative to eliminate or mitigate impacts to the bat colony is to leave the structure intact and add perimeter fencing and signage to deter human entry. Therefore, institutional controls are required at the location of the cesium-137 contamination south of the 116-D-8 cask storage pad.

A summary of the cleanup evaluation for the soil results against the applicable criteria is presented in Table ES-1. The results of the verification sampling are used to make reclassification decisions for the 116-D-8 waste site in accordance with the Tri-Party Agreement Handbook Management Procedures (DOE-RL 2007).

Code:	100-D-9	Classification:	Accepted
Names:	100-D-9; 184DA; 184-DA Boiler Oil Tank	Reclassification:	Interim Closed Out (8/10/2006)
Type:	Storage Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. This site consisted of an underground fuel storage tank that was believed to have been removed during general demolition efforts of the 100-D/DR area during 1985 and 1986. It now appears as a cobble-covered field with vegetation on the surface. The elevation at the top of the tank was 141 meters (464.0 feet) and was covered by at least 0.6 meters (2 feet) of overburden.		
Location:	The tank was located in the 100-D Area, west of the northwest corner of the 184-DA Boiler House site, 55 meters (180 feet) south of Palouse Street and 165 meters (540 feet) east of Puget Avenue.		
Process Description:	The tank held fuel oil for the 184-DA Boiler House. It had a capacity of 94,600 liters (25,000 gallons). The fuel tank was installed in 1967 or 1968 to hold oil that fueled the boilers in the 184-DA Steam Generating Building (Boiler House).		
Waste Type:	Equipment		
Waste Description:			
Closure Info:	The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). Additionally, the site was evaluated in accordance with the requirements for underground storage tanks specified in Washington Administrative Code (WAC) 173-360, "Underground Storage Tank Regulations." These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario.		
	A geophysical survey was performed at the site in October 2005. Ground-penetrating radar, EM31 electromagnetic surveys, and magnetic gradiometer surveys were performed over an extended area surrounding the former tank location. Several linear anomalies were interpreted		

within the survey area, all trending roughly east-west. The former tank location appeared to be in the "disturbed" area that was near the center of the survey area. Small, relatively subtle geophysical anomalies were noted within this disturbed area, more typical of small debris or metal, but there was clearly no evidence of a tank of the documented size [94,600 Liters (25,000 gallons)].

Contaminants of potential concern (COPCs) for the site included semivolatile organic compounds (SVOCs), petroleum hydrocarbons, VOCs, arsenic, barium, cadmium, total chromium, lead, selenium, and polychlorinated biphenyls (PCBs). Suspect asbestos-containing material was observed during confirmatory sampling; however the sample results were used to eliminate asbestos as a COPC for the site.

Radionuclides were not COPCs for this site. However, the possible presence of radiological contaminants was evaluated using field radiological survey instrumentation (capable of detecting alpha, beta, and gamma radiation) during excavation. Although not specifically COPCs, antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, silver, vanadium, zinc, and mercury levels were also evaluated for the site.

Confirmatory sample results have been stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System. A summary of the samples collected and laboratory analyses performed is provided in Table 1 of the RSVP-2006-030.

A test trench approximately 10 meters (23.8 feet) long and up to approximately 3.7 meters (12.1 feet) deep (to native soil) was excavated through the former fuel oil tank location. The excavation confirms that the tank was previously removed. No COC/COPCs were detected above the RAGs during confirmatory sampling.

The waste site has been evaluated and remediated in accordance with the Remaining Sites ROD, the RDR/RAWP, and the requirements for underground storage tanks specified in WAC 173-360, "Underground Storage Tank Regulations." Focused sampling was performed and the analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the confirmatory sampling results support a reclassification of the waste site to interim closed out.

The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-D-18	Classification:	Accepted
Names:	100-D-18; 107-D Sludge Trench #4; 107-D4; 107-D-4; Sludge Trench #4	Reclassification:	Interim Closed Out (9/26/2000)
Type:	Trench	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	This site has been remediated and was interim closed out on September 26, 2000. It is no longer posted.		
Location:	The site was located north of and adjacent to the western half of the 107-D Retention Basin (116-D-7), and was directly over the 100-DR Group 2 pipelines.		
Process Description:	In the Spring of 1953 sludge was removed from the bottom of the 107-D Retention Basin (116-D-7) to facilitate repairs. The sludge was deposited in this and other nearby trenches.		

Related Sites/ Structures: This site was associated with the 116-D-7 Retention Basin.

Waste Type: Sludge

Waste Description: The site received contaminated sludge from the bottom of the 107-D Retention Basin (116-D-7).

Closure Info: The site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA,1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP).

Contaminants of concern (COCs) and contaminants of potential concern (COPCs) for 100 Area waste sites identified through process knowledge are listed in the SAP. The COCs for the site consist of americium-241, cobalt-60, cesium-137, europium-152, europium-154, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium, and polychlorinated biphenyls.

Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at Environmental Restoration Disposal Facility (ERDF). On December 3, 1998, the excavation reached the design limit at El. 127.8 meters (420.3 feet). Cleanup verification sampling began on September 13, 1999, and was finished on September 13, 1999.

Remedial action at this site began on September 8, 1997 and ended on December 3, 1998. During that time, the shallow zone sidewalls were lost to other nearby remedial activities, leaving only the floor of the excavation for the site. At the completion of remedial action, the excavation area was approximately 344.3 square meters (3,706 square feet) with a maximum depth of approximately 6.6 meters (21.7 feet). Approximately 8,700 metric tons (9,592 tons) of material from the site were disposed of at ERDF. Clean backfill is to be taken from the clean stockpile and from other sources of clean material that have been surveyed in accordance with the SAP and that are appropriate for use as backfill.

The CVP demonstrated that remedial action at the site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD and the RDR/RAWP. Materials from the site have been excavated and handled in accordance with the RDR/RAWP. As a result of remedial actions at adjacent sites, the sidewalls of the 100-D-18 site excavation have also been excavated. The consequence is that there are no residual shallow zone soils left at the site to sample and evaluate. Protection of potential future rural-residential receptors will be ensured by backfilling the site with clean soils.

For the deep zone, this CVP demonstrated that residual COC concentrations pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The site has been verified to be remediated in accordance with the ROD.

Code: 100-D-19

Classification: Accepted

Names: 100-D-19; 107-D Sludge Trench #6; Sludge

Reclassification: Interim Closed Out (3/26/2001)

Trench #6

Type:	Trench	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	This site has been remediated and closed out. It was a trench dug for disposal of sludge from the bottom of the 107-D Retention Basin. The waste was covered by about 1.8 meters (6 feet) of clean fill.		
Location:	The site is located north of the eastern half of the 107-D Retention Basin (116-D-7).		
Process Description:	HW-46715 documents that in the Spring of 1953 sludge was removed from the bottom of the 107-D Retention Basin (116-D-7) to facilitate repairs. The sludge was deposited in this and other nearby trenches.		
Waste Type:	Sludge		
Waste Description:	The site received radioactively contaminated sludge from the bottom of the 107-D Retention Basin.		
Closure Info:	100-D-48:1, 100-D-49:1, 100-D-19 and UPR-100-D-4 were addressed as a group. The information below documents information for the group of sites.		

Remedial action at the 100-D-48:1/49:1 Pipelines site began on December 28, 1998. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation reached the design limit.

Because remediation of the 100-D-48:1/49:1 Pipelines site required moving an active overhead power line, site remedial action and sampling were conducted in two phases. These separate phases are reflected by the long time period between the start and finish dates for excavation.

The excavation design depth generally corresponded with the invert elevation of the pipelines. At the completion of remedial action and removal of the engineered structure, the excavation was approximately 15,504 square meters (166,800 square feet) in area with a maximum depth of approximately 6.0 meters (20 feet) below ground surface. Approximately 107,266 metric tons (118,241 tons) of material from the D Area pipelines site have been disposed of at the ERDF through July 2000. Cleanup verification sampling began on April 3, 2000, and was finished on August 8, 2000. The ground surface in the vicinity of the site varies with an average elevation of approximately 134.4 meters (441 feet).

The CVP demonstrated that remedial action at the 100-D-48:1/49:1 Pipelines site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 100-D-48:1/49:1 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:1/49:1 Pipelines site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. Residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:1/49:1 Pipelines site (includes the 100-D-19 and UPR-100-D-4 sites) is verified to be remediated in accordance with the interim

action ROD.

Code: 100-D-20	Classification: Accepted
Names: 100-D-20; 107-D Sludge Trench #3; 107-D3; 107-D-3; Sludge Trench #3	Reclassification: Interim Closed Out (3/25/1999)
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1953

Description: This site has been remediated and interim closed out. The 100-D-20 Sludge Pit was constructed in 1953. This pit and two other identified sludge pits were associated with maintenance clean out of the 116-D-7 Liquid Effluent Retention Basin, which was constructed in the late 1940s. The 116-D-7 Liquid Effluent Retention Basin was used to hold reactor effluent water for a brief period of time, allowing radioactive decay and thermal cooling to occur before the water discharged to the Columbia River. The sludge pits were built for disposal of sludge removed from the bottom of the effluent retention basin to enable periodic maintenance and repairs to the basin during operation of the 100-D and 100-DR Reactors. There is no indication from available records that this sludge pit directly received any regular and/or high-volume liquid effluent wastes. The sludge pit consisted of an approximate 575-square meter (6,189-square feet) unlined excavation (bottom dimension) with moderately sloped side walls, extended to a depth of about 2.1 meters (7 feet) below grade, and the pit was surrounded by native sandy gravel soils at the base and side walls of the excavation. After shutdown of the 100-D and 100-DR Reactors in the 1970s, subsequent decommissioning of the effluent retention basin and associated sludge pits (as part of the Radiation Area Remedial Action Program) included placement of approximately 2 meters (7 feet) of material within the sludge pit, which consisted primarily of soil with some miscellaneous debris material from the effluent basin and surrounding area. This sequence of material placement was followed by placement of approximately 1 meter (3 feet) of clean soil cover for interim radiological, health, and safety protection purposes. The materials previously placed over the engineered pit structure (original pit excavation) are identified collectively as overburden materials. A Geophysical Survey was done in 1996 that identified this trench as a disturbed zone that may also contain buried construction debris.

Location: The trench was outside of the south perimeter of 107-D. Refer to Hanford Drawing H-1-4046.

Process Description: In the Spring of 1953 sludge was removed from the bottom of the 107-D Retention Basin (116-D-7) to facilitate repairs. The sludge was deposited in this and other nearby trenches.

Waste Type: Sludge

Waste Description: The site received radioactively contaminated sludge from the bottom of the 107-D Retention Basin. From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include the following: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium, and polychlorinated biphenyls.

Closure Info: The cleanup verification package (CVP-1998-00003) has documented that the 100-D-20 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision (ROD) (EPA 1995) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

Excavation of the 107-D3 Sludge Pit began on July 30, 1997, by removing the overburden materials and underlying contaminated soil. Based on field screening, all overburden materials were found to be contaminated and were disposed of at the Environmental Restoration Disposal Facility (ERDF). On August 1, 1997, the excavation had reached the design limits at the base

of the engineered structure (El. 132.3 meters [434 feet]) and closeout sampling was initiated.

During excavation, field screening and onsite gamma energy analysis (GEA) at the Radiological Counting Facility (RCF) were used to distinguish between potentially clean materials and contaminated materials for disposal at ERDF. Based on the size of the site, 24 random samples were collected for GEA and submitted to the RCF for analysis. Data from these samples were used to corroborate data obtained from field screening and to assist in waste characterization. Screening technologies, such as hand-held and cart-mounted sodium iodide (NaI) detectors, were used to guide day-to-day excavation activities and provided 100% coverage of the entire final excavation site. The GEA indicated a low degree of variability and contaminant levels below the lookup values. These samples were used to determine the number of final cleanup verification samples required. Four final verification composite samples were taken and sent to an offsite laboratory for analysis.

Waste materials that were excavated, loaded into shipping containers, and disposed of at the ERDF consisted of soils not meeting direct exposure RAGs based on field screening results.

For the exposed surface of the excavation, initial confirmation sampling and testing using GEA began on January 1, 1998 (El. 132 meters [434 feet]).

At the completion of the remedial action, the excavation area was approximately 575 square meters (6,189 square feet) at a depth of 2.1 meters (7 feet), and approximately 9,710 metric tons (10,700 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 134.4 meters (441 feet). Clean backfill will be taken from Borrow Pit 21, which is located due south of the 100-D-20 site. The material in the borrow pit has been surveyed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL -96-22) and is appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code: 100-D-21	Classification: Accepted
Names: 100-D-21; 107-D-2; 107-D-2; 107-DR Sludge Trench #2; Sludge Trench #2	Reclassification: Interim Closed Out (3/25/1999)
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1953
Description: The 100-D-21 Sludge Pit was constructed in 1953. This pit and two other identified sludge pits were associated with maintenance cleanout of the 116-D-7 Liquid Effluent Retention Basin (LERF), which was constructed in the late 1940s. The 116-D-7 Liquid Effluent Retention Basin was used to hold reactor effluent water for a brief period of time, allowing radioactive decay and thermal cooling to occur before the water was discharged to the Columbia River. The sludge pits were built for disposal of sludge removed from the bottom of the effluent retention basin to enable periodic maintenance and repairs to the basin during operation of the 100-D and 100-DR Reactors. There is no indication from available records that this sludge pit directly received any regular and/or high-volume liquid effluent wastes. The sludge pit consisted of an approximate 891-square meter (9,591-square feet) unlined excavation (bottom dimension) with moderately sloped side walls, extending to a depth of about 3 meters (10 feet) below grade. The pit was surrounded by native sandy gravel soils at the base and side walls of	

the excavation. After shutdown of the 100-D and 100-DR Reactors in the 1970s, subsequent decommissioning of the effluent retention basin and associated sludge pits (as part of the Radiation Area Remedial Action Program) included placement of approximately 2 meters (7 feet) of material within the sludge pit. The materials consisted primarily of soil with some miscellaneous debris material from the effluent basin and surrounding area. This sequence of material placement was followed by placement of approximately 1 meters (3 feet) of clean soil cover for interim radiological, health, and safety protection purposes. The waste was covered with about 1.8 meters (6 feet) of clean fill and marked with an above-ground concrete marker. The materials previously placed over the engineered pit structure (original pit excavation) are identified collectively as overburden materials.

Location: The site is outside the west perimeter of 107-DR Basin.

Process Description: In the Spring of 1953 sludge was removed from the bottom of the 107-DR Retention Basin (116-DR-9) to facilitate repairs. The sludge was deposited in this and other nearby trenches.

Waste Type: Sludge

Waste Description: The site received radioactively contaminated sludge from the 107-DR Retention Basin. From process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include the following (DOE/RL-96-22): Americium-241, Cobalt-60, Cesium-137, Europium-152, Europium-154, Europium-155, Plutonium-238, Plutonium-239/240, Strontium-90, Hexavalent chromium, and Polychlorinated biphenyls (PCBs).

Closure Info: Excavation of the 100-D-21 Sludge Pit (135.0 meters [443 feet]) began on December 31, 1997, by removing the overburden materials and contaminated soil. Based on field screening, all overburden materials were found to be contaminated and were disposed of at the Environmental Restoration Disposal Facility (ERDF). On January 8, 1998, the excavation had reached the design limits at the base of the engineered structure (El. 131.9 meters [433 feet]) and closeout sampling was initiated. Elevated levels of PCBs were found at this elevation (El. 131.9 meters [433 feet]) and excavation was continued. On March 17, 1998, the final excavation was completed at El. 130.5 meters (428 feet) and analysis of verification samples found the site to be clean.

During excavation, field screening and onsite gamma energy analysis (GEA) at the Radiological Counting Facility (RCF) were used to distinguish between potentially clean materials and contaminated materials for disposal at ERDF. Based on the size of the site, 24 random samples were collected for GEA and submitted to the RCF for analysis. Data from these samples were used to corroborate data obtained from field screening and to assist in waste characterization. Screening technologies, such as hand-held and cart-mounted sodium iodide (NaI) detectors, were used to guide day-to-day excavation activities and provided 100% coverage of the entire final excavation site. The GEA indicated a low degree of variability and contaminant levels below the lookup values. These samples were used to determine the number of final cleanup verification samples required. Four final verification composite samples were taken and sent to an offsite laboratory for analysis.

Waste materials that were excavated, loaded into shipping containers, and disposed of at the ERDF consisted entirely of soils not meeting direct exposure RAGs based on field screening results.

For the exposed surface excavation, initial confirmation sampling and testing using GEA began on April 29, 1998, to determine the number of final verification samples at the base of the engineered structure. Verification sampling and testing were completed on May 21, 1998 (El. 130.5 meters [14.8 feet]).

At the completion of the remedial action, the excavation area was approximately 891 square

meters (9,591 square feet) at a depth of 4.5 meters (14.8 feet). Approximately 9,943 metric tons (10,957 tons) of contaminated soil were disposed at the ERDF. The excavation will be backfilled to the reference grade of El. 135 meters (443 feet). Clean backfill will be taken from Borrow Pit 21, which is located due south of the 100-D-21 site. The material in the borrow pit has been surveyed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22) and is appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	100-D-22	Classification:	Accepted
Names:	100-D-22; 107-D1; 107-D-1; 107-DR Sludge Trench #1; Sludge Trench #1	Reclassification:	Interim Closed Out (3/25/1999)
Type:	Trench	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	The site has been remediated and interim closed out.		
Location:	The site is outside the east perimeter of the 107-DR Basin.		
Process Description:	<p>The 100-D-22 Sludge Pit was constructed in 1953. This pit and two other identified sludge pits were associated with maintenance cleanout of the 116-DR-9 Liquid Effluent Retention Basin, which was constructed in the late 1940s. The 116-DR-9 Liquid Effluent Retention Basin was used to hold reactor effluent water for a brief period of time, allowing radioactive decay and thermal cooling to occur before the water was discharged to the Columbia River. The sludge pits were built for disposal of sludge removed from the bottom of the effluent retention basin to enable periodic maintenance and repairs to the basin during operation of the 100-D and 100-DR Reactors. There is no indication from available records that this sludge pit directly received any regular and/or high-volume liquid effluent wastes. The sludge pit consisted of an approximate 340-square meter (3,658-square feet) unlined excavation (bottom dimension) with moderately sloped side walls, extended to a depth of about 3 meters (10 feet) below grade, and the pit was surrounded by native sandy gravel soils at the base and side walls of the excavation. After shutdown of the 100-D and 100-DR Reactors in the 1970s, subsequent decommissioning of the effluent retention basin and associated sludge pits (as part of the Radiation Area Remedial Action Program) included placement of approximately 2 meters (7 feet) of material within the sludge pit, which consisted primarily of soil with some miscellaneous debris materials from the effluent basin and surrounding area. This sequence of material placement was followed by placement of approximately 1 meter (3 feet) of clean soil cover for interim radiological, health, and safety protection purposes. The materials previously placed over the engineered pit structure (original pit excavation) are identified collectively as overburden materials. The site is outside the east perimeter of the 107-DR Basin. Sludge was removed from the bottom of the 107-DR Basin in the spring of 1953 and buried in a nearby trench. The waste was covered with about 1.8 meters (6 feet) of clean fill and marked with an above-ground concrete marker. The Technical Baseline Report (Carpenter, 1993) says more than one sludge trench was placed in this area. Refer to Hanford Drawing H-1-4046. A Geophysical Survey was done in 1996 that identified the trench as a disturbed zone and contains what appears to be construction debris.</p>		
Related Sites/ Structures:	The site was associated with maintenance cleanup of the 116-DR-9 Liquid Effluent Retention Basin during operation of the 100-D and 100-DR Reactors.		
Waste Type:	Sludge		

Waste Description: process knowledge, the waste site contaminants of concern (COCs) identified in the SAP include the following: Americium-241, Cobalt-60, Cesium-137, Europium-152, Europium-154, Europium-155, Plutonium-238, Plutonium-239/240, Strontium-90, Hexavalent chromium, and Polychlorinated biphenyls (PCBs). A small volume of debris containing lead was encountered during remedial action, which was subsequently transported, treated, and disposed of at the ERDF. Because of the presence of lead-containing debris, lead was included as a COC per regulator request.

Closure Info: Excavation of the 100-D-22 Sludge Pit began on March 14, 1997, by removing the overburden materials and underlying contaminated soil. Based on field screening, all overburden materials were found to be contaminated and were disposed of at the Environmental Restoration Disposal Facility (ERDF). On March 25, 1997, the excavation had reached the design limits at the base of the engineered structure [elevation 132.4 meters (434 feet)], and closeout sampling was initiated. Because of the presence of polychlorinated biphenyls (PCBs) at that depth, the excavation was extended to 4.8 meters (16 feet) below grade [elevation 130.2 meters (427 feet)] on November 11, 1997, to remove residual PCB contamination. Closeout sampling for PCBs was initiated at this depth.

During excavation, field screening and onsite gamma energy analysis (GEA) at the Radiological Counting Facility (RCF) were used to distinguish between potentially clean materials and contaminated materials for disposal at ERDF. Based on the size of the site, 24 random samples were collected for GEA and submitted to the RCF for analysis. Data from these samples were used to corroborate data obtained from field screening and to assist in waste characterization. Screening technologies, such as hand-held and cart-mounted sodium iodide detectors, were used to guide day-to-day excavation activities and provided 100% coverage of the entire final excavation site. The GEA indicated a low degree of variability and contaminant levels below the lookup values. These samples were used to determine the number of final cleanup verification samples required. Four final verification composite samples were taken and sent to an offsite laboratory for analysis.

Waste materials that were excavated, loaded into shipping containers, and disposed of at the ERDF consisted of soils not meeting direct exposure Remedial Action Goals (RAGs) based on field screening results. This included overburden material removed from the southeast portion of the excavation (to construct an equipment access ramp). A nominal amount of material was found to contain PCBs above cleanup levels and was subsequently disposed of at the ERDF.

For the exposed surface of the excavation, initial confirmation sampling and testing using GEA began on June 25, 1997, to determine the number of final verification samples at the base of the engineered structure [elevation 132.4 meters (434 feet)]. Verification sampling and testing began on July 29, 1997, and identified the presence of PCBs above cleanup criteria levels. Field screening was used to monitor PCB levels as excavation at the 100-D-22 Sludge Pit continued to a final elevation of 130.2 meters (427 feet) on November 11, 1997. The PCB samples were taken again on December 16, 1997, for clean site verification.

At the completion of the remedial action, the bottom of the excavation was approximately 340 square meters (3,658 square feet) at a depth of 4.8 meters (16 feet), and approximately 9,710 metric tons (4,960 loose cubic meters) of material from the site were disposed of at the ERDF. Upon regulatory approval, the excavation will be backfilled with clean fill materials to the reference grade of elevation 135 meters (443 feet). Clean backfill will be taken from Borrow Pit 21 (Gravel Pit 21). The material in the pit has been surveyed in accordance with the Sampling and Analysis Plan (SAP) (DOE/RL-96-22) and is appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to

shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	100-D-24	Classification:	Accepted
Names:	100-D-24; 119-D Sample Building Drywell	Reclassification:	No Action (9/19/2006)
Type:	French Drain	Start Date:	1/1/1959
Status:	Inactive	End Date:	
Description:	The site consisted of a drywell that received drainage from a floor drain in the 119-D Sample Building. The sample building has been demolished and the surrounding area has been graded.		
Location:	The drywell was located south of the 119-D Sample Building, between the intake and exhaust ducts for the 117-D Filter Building.		
Process Description:	The 119-D Sample Building was situated over the intake and exhaust ducts to the 117-D Filter Building and was used to sample effluent gases and particulates. The drywell was connected to the 119-D Sample Building by a 5-centimeter (2-inch) drainage pipe buried at least 0.9 meters (3 feet) below grade. A 1.9-centimeter (3/4-inch) drain line from the building's evaporative cooler connected into the 5-centimeter (2-inch) drain line near the southern edge of the building.		
Related Sites/ Structures:	The drywell was associated with the 119-D Sample Building.		
Waste Type:	Process Effluent		
Waste Description:	The drywell received effluent from the building's evaporative cooler. It was likely that the floor drain also received sample waste and janitorial waste since the building had no other drains or connections to the process sewer system.		
Closure Info:	In accordance with evaluation for the Remaining Sites Verification Package it was determined that site reclassification to No Action was supported by confirmatory sampling results. The results also determined that the current site conditions meet the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, (Remaining Sites ROD).		
	The contaminants of potential concern (COPCs) for the site were identified based on existing information for the site. The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included carbon-14, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, uranium-234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, semivolatile organic compounds (SVOCs), and volatile organic compounds.		
	Although not considered COPCs, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc concentrations were also measured by analyzing for the expanded inductively coupled plasma (ICP) metals analytical list. Confirmatory sampling was conducted on November 3, 2005. Because the drywell was not located during excavation, samples were taken of the soils presumed to underlie the former location of the drywell.		
	For reclassification purposes soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels were made for the site contaminants		

of potential concern and other constituents. Screening levels were not exceeded for the site constituents, with the exception of boron and vanadium. Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It was believed that the presence of these constituents does not pose a risk to ecological receptors as residual vanadium concentrations were below site background levels, and boron concentrations were consistent with those seen elsewhere at the Hanford Site (no established background value was available).

A baseline risk assessment for the river corridor portion of Hanford began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the 100-D-24 site.

Per discussion with the Washington Department of Ecology and review of historical drawings referenced by the WIDS summary report, the coordinates provided in WIDS for the drywell were determined to be incorrect. Accordingly, one test pit was excavated at the drywell location shown on historic drawings. The drywell was not identified within the test pit area and was, therefore, presumed to have been removed at the time of decommissioning and demolition activities. Therefore, in accordance with the work instruction, the excavation proceeded to 3 meters (10 feet) below ground surface (bgs), at the suspected location of the former base of the drywell. One soil grab sample was collected at 2.4 meters (8 feet) bgs, and another grab sample was collected at 3 meters (10 feet) bgs.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System and were presented in Appendix A of the RSVP.

The analytical results from soil samples were also shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-D-25	Classification:	Accepted
Names:	100-D-25; Unplanned Release: 107-DR Basin Leaks	Reclassification:	Interim Closed Out (1/6/2000)
Type:	Unplanned Release	Start Date:	1/1/1951
Status:	Inactive	End Date:	
Description:	Leakage from the 107-DR Basin was confined to the south end and beneath the basin. Today the area cannot be separately distinguished in the gravel retention basin area.		
Location:	The site was located beneath the 107-DR Retention Basin.		
Release Description:	The release involved leakage from the 107-DR Basin.		
Related Sites/Structures:	The leak was associated with the 107-DR Basin.		
Waste Type:	Water		
Waste Description:	Radioactively contaminated effluent was released to the site.		
Closure Info:	116-DR-9 and 100-D-25 were addressed as a group. The information below documents information for the group of sites.		

The Cleanup Verification Package, CVP-1999-00006, documents that the 116-DR-9 and 100-D-25 waste sites have met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 0), and the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995). A rural residential exposure scenario was assumed in calculating cleanup levels.

The retention basin received cooling water effluent from the 105-DR Reactor from 1950 until 1965. After the 105-D Reactor was deactivated in 1965, the basin remained active until 1967 as part of the 105-D Reactor effluent system. Leakage occurred as unplanned releases in 1951 beneath the basin and outside the south end of the basin when seals in the concrete floor of the basin failed and the pipes pulled away from the basin walls at the retention basin inlet. Waste site 100-D-25, an unplanned release that occurred as floor leaks beneath the basin, could not be distinguished from other contaminated soil. It was remediated with the 116-DR-9 Retention Basin under the provisions for "proximity sites."

Excavation began on October 21, 1997, by removing the overburden materials and underlying contaminated soil. Overburden materials, which were contaminated, were disposed at the ERDF. On December 28, 1998, the excavation had reached the design limits below the base of the engineered structure (El. 130.25 m [427.35 ft]) and cleanup verification sampling was initiated. At the completion of the remedial action, the excavation area floor was approximately 16,352 m² (176,013 ft²) at a depth of 4.75 m (15.6 ft), and approximately 201,519 metric tons (222,122 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 135.0 m (443 ft).

Contaminated soil associated with the process effluent pipelines was not removed completely, but remained for final remediation with the pipelines. The 100-DR process effluent pipelines are scheduled to be removed during the next year. The 116-DR-9 sidewall areas that are adjacent to future pipeline excavation areas were not sampled as part of the cleanup verification effort. These areas will be sampled and verified clean as part of the effluent pipeline remediation efforts.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that Ics actually were required. The Ics for this site have been revised accordingly.

Code: 100-D-29	Classification: Accepted
Names: 100-D-29; Effluent Line Leak #2	Reclassification: Interim Closed Out (3/25/2010)
Type: Unplanned Release	Start Date: 1/1/1951
Status: Inactive	End Date:
Description: The site is a release from the 107-DR Retention Basin. In the fall of 1952, there was extensive leakage of effluent water at the inlet end of the 107-DR retention basin that was caused by the pipes pulling loose from the basin wall from thermal expansion and contraction of the steel pipelines and the concrete basin wall. In order to repair the leak, a trench was dug to receive the leaked effluent so that repairs could be made. This trench formed a "dogleg" adjacent to the southwest corner of the basin towards the southeast end of the 107-D Retention Basin. (UNI-946)	

The trench was covered by about 1.2 meters (4 ft) of clean fill material upon completion of the basin repair. In the fall of 1952, a portion of the contaminated soils from this leak was used as fill around the pipeline anchor blocks south of the basin. All contaminated soil was then covered by 0.61 meters (2 ft) of soil. Contaminated soil associated with the pipeline anchor blocks would have been removed with the 100-D-49, 100-DR Effluent Cooling Water Pipelines.

Location: The site is located southwest of the 107-DR Basin and southeast of the 107-D Retention Basin. The site is centered at Washington State Plane coordinates, E 573832.364, N 152132.5.

Release Description: In 1951, extensive leakage of effluent water was detected above ground about 46 meters (105 feet) southeast of the 107-D Basin. A maximum dose rate of 50 millirads/hour was observed at the surface. Two excavations were made to investigate the leakage, but the effluent continued to seep to the surface.

Process Description: The site was a planned release to allow for the repair of the 107-DR Retention Basin.

Related Sites/ Structures: The site was related to the 107-DR Retention Basin.

Waste Type: Soil

Waste Description: Contaminants of potential concern (COPCs) include: Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, H-3, The waste is contaminated soil from a temporarily constructed drainage trench. In the fall of 1952, readings up to 100 mrad/hr were detected at the surface of the mud leaking from the retention basin. The source is radioactive process effluent from the 107-D Retention Basin.

Closure Info: In accordance with the Remaining Sites Verification Package, RSVP-2009-038, the verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD).

Remedial activities at the 100-D-29 waste site began on March 7, 2008, and were completed on March 28, 2008. The excavation was approximately 4.6 m (15 ft) deep and 30 m (100 ft) long with variable width. Approximately 5,200 bank cubic meters (BCM) (6,800 bank cubic yards [BCY]) of soil was excavated and stockpiled adjacent to the site.

Historical information indicated that residual radiological contamination associated with the 100-D-29 waste site would be expected to be encountered at approximately 1.2 meters (4 feet) below ground surface (bgs) because the trench that formed the site had been backfilled with 1.2 meters (4 feet) of soil. However, no field detectable contamination was encountered during excavation to this depth. Therefore, the excavation was extended to a depth of 4.6 meters (15 feet), but still with no radiological contamination detected.

Based on field observations, in combination with hand-held radiological surveys that indicate the absence of detectable contamination associated with a retention basin leak, it is suspected that the contaminated soil associated with the 100-D-29 site was removed in the fall of 1952 and used as backfill for the anchor blocks at the 107-DR Retention Basin inlet.

An alternative suggestion is that the waste site location in Waste Information Data System (WIDS)/Stewardship Information System (SIS) is an approximation. A September 1954 photograph shows a release adjacent to the basin inlet, with a dogleg to the north, similar to the

shape of the 100-D-29 waste site depicted in WIDS and SIS. This release appears to have resulted from a trench that was used to control effluent drainage away from the basin as described in the historical documents (Rupert 1953, Heid 1956).

If this is the case, it is possible that the location of the 100-D-29 waste site in WIDS and SIS may not be the actual trench location since the location was developed using historical sketches and the actual location may have been the release observed in the 1954 photograph. Contamination associated with the release shown in this photograph may have had some portion removed during remediation of the 107-DR Retention Basin (CVP-99-00006). As a result of this new information, this release will be identified as discovery site 100-D-102 in WIDS for further evaluation using the TPA-MP-14 process.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-D-30	Classification:	Accepted
Names:	100-D-30; 185-D; 185-D Sodium Dichromate Trench & Sump; 189-D Decontamination & Demolition Project; 190-D Sodium Dichromate Soil Contamination	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1967
Description:	The site is sodium dichromate contaminated soil. The site was discovered during the 185-D/189-D Subgrade Decontamination and Demolition Project. Sodium dichromate contamination was discovered in the soil along the entire length of the sodium dichromate trench of 185-D. The contamination was visually identified on concrete surfaces and on large cobbles in the soil by the yellow film on the surface. Photographs were taken during demolition of the subgrade structures and show the contaminated soil and structures.		
Location:	The site is located in 100-D Area, between the 105-D Building and the 183-D Building.		
Release Description:	Sodium dichromate solutions were released from cracks or expansion joints in the "chromate trench" which extended the length of the 185-D Building.		
Process Description:	The process water flowed from the 185-D Building into the refrigeration room of the 189-D Building where it was chilled and pumped into either or both of the two center storage tanks in the 190-D Building. Four large 6.62E+06-liter (1.75E+06-gallon) steel storage tanks were provided in the 190-D High Bay to supply water to the coolant pumps for the reactor. The water in the tanks was treated with sodium dichromate to inhibit corrosion in the reactor process tubes. The 185-D Building contained sodium dichromate mixing tanks and a pipe trench to convey sodium dichromate solutions to be added to the large 190-D Storage Tanks.		
Related Sites/ Structures:	The site was related to the 190-D, 185-D, 189-D and 105-D process piping.		
Waste Type:	Chemical Release		
Waste Description:	Sodium dichromate contamination is in the soil.		

Code:	100-D-31	Classification:	Accepted
Names:	100-D-31; 100-D Water Treatment Facilities Underground Pipelines	Reclassification:	None
Type:	Process Sewer	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1994
Description:	<p>The waste site encompasses the underground pipelines that transported pre-reactor, non radioactive cooling water and process sewer waste streams from water treatment, reactor, and laboratory facilities. All of these underground pipelines are pre-reactor (pre-irradiation) disposal and supply lines, except for the septic sewer lines that fed the 1607-D2 septic tank. All the underground process sewer and drainage piping from water treatment facilities to the 116-D-5 Outfall Structure are part of this site. The site also includes the feed pipelines from the 117-DR Filter Building and the 105-DR Reactor to the 100-D-13 septic System.</p> <p>Excluded from this site are the process sewer system that was constructed specifically for the 100-DR Reactor facilities, chemical supply, or underground effluent pipelines designed to dispose of radionuclide contaminated effluents and pipelines within buildings. These systems are addressed as separate WIDS sites. This site does not include the 120-D-1 Ponds, used for process sewer discharge from 1977 to 1994 or the 116-D-5 Outfall Structure and river pipelines. This site also does not include raw river water, potable water, or fire system water pipelines, or the sodium dichromate underground supply pipelines (100-D-56).</p>		
Location:	<p>The pipelines are located in the 100-D Area. The system is a network of underground piping that extends from water treatment facilities, the 184-D Powerhouse, 1700-Series Buildings, and 105-D Reactor to the 116-D-5 Outfall and septic tank 1607-D2. These pipelines run from the 182-D Reservoir, the 183-D Basins, Filters and Clearwells, the 185-D, 183-DR, and 189-D/190-D Complex, the 105-D Reactor and the 1700-D Series Buildings. The individual subsites contain the pipeline descriptions and associated structures.</p>		
Process Description:	<p>Water was taken from the Columbia River and treated extensively to purify it prior to use as reactor cooling water. The cooling water was used in a single pass operation and once through the reactor cores became irradiated reactor effluent. The non-radioactive overflows, process cooling waste streams, filter backwashes, and floor drains in non-radioactive areas became process sewer wastes. The 107-D Retention Basin discharged to the process sewer pipeline just prior to the 116-D-5 Outfall Structure.</p>		
Related Sites/ Structures:	<p>The process sewer received effluent from the following facilities: 182-D, 183-D, 183-DR, 184-D, 185-D 186-D, 189-D, 190-D, 105-D, and 107-D. All associated facilities except the 181-D, 182-D, 183-D, and 105-D have been demolished.</p>		
Waste Type:	Water		
Waste Description:	<p>The waste consists of steel piping, concrete, and soil (if contaminants are present). The water supply and process sewer drain pipelines at the 100-D Area provided for the supply and disposal of non-radioactive streams generated in water treatment and water treatment laboratories facilities and powerhouse operations. Known chemical additions to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained near 7.5, free chlorine residual at about 0.2 milligrams per liter, and sodium dichromate was added at a rate of about 2 milligrams per liter. The sodium dichromate product pipelines would have much greater concentrations. Sodium chloride was also used to regenerate water softeners in both water treatment and powerhouse operations.</p> <p>The process sewer system connected to the 116-D-5 (1904-D Outfall) at the Columbia River shoreline. (The outfall and the pipelines that carried the process sewer and reactor effluent to</p>		

vitrified clay pipe (VCP) and was located to the northwest of the 105-D Reactor. The pipelines fed into the 1607-D2:3 portion of the 1607-D2 sanitary sewer system, which was the main sanitary sewer servicing the 100-D Area. It transported sewage from manhole S-21D north to manhole S-25D. This system of sewers was active from 1944 to 1994 and received effluent from the 1700-D, 1704-D, 1707-D, 1707-DA, 1708-D, 1713-D, 1716-D, 1717-D, 1718-D, 1719-D, 1722-D, 182-D, 183-D, 184-D, 185-D, 186-D, 189-D, 190-D, and 108-D Buildings.

Several miscellaneous pipelines crossing over the subsites were encountered during excavation, however, none were connected. All of these pipelines will be addressed separately.

Location: The 100-D-31:1, 1607-D2 septic sewer pipeline subsite is located northwest of the 105-D Reactor in the 100 DR-1 Operable Unit. The 100-D-31:1 waste site addresses a portion of the 1607-D2 septic sewer pipeline that transported sewage from manhole S-21D north to manhole S-25D.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil.

Closure Info: 100-D-31:1 and 100-D-31:2 were addressed as a group. The information below documents information for the group of sites.

Remedial action was performed between June 18, 2007 and July 17, 2008. The final excavation depths for 100-D-31:1 and 100-D-31:2 were approximately 5 m (16 ft) and 3 m (9 ft), respectively. The excavation resulted in approximately 2,512 bank cubic meters (BCM) (3,287 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility, including 756 m (2,480 ft) of pipe.

The Contaminants of potential concern for the subsites included antimony, barium, copper, cadmium, chromium (total), lead, manganese, nickel, silver, zinc, mercury, hexavalent chromium, cesium-137, cobalt-60, europium-152, europium-154, europium-155, uranium-233/234, uranium-235, uranium-238, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs).

Verification sampling was performed on August 11 and 12, 2009. The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were also presented as Attachment 1 of the 95% upper confidence limit (UCL) calculation (Appendix B of the RSVP).

Analytical results show that residual contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:2

Classification: Accepted

Names: 100-D-31:2; 1700-D Series Buildings Septic Sewer Pipelines

Reclassification: Interim Closed Out (10/7/2010)

Type: Process Sewer**Start Date:****Status:** Inactive**End Date:**

Description: The Remaining Sites Verification Package for subsites 100-D-31:1 and 100-D-31:2, RSVP-2010-006, has documented that the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) have been met as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

Subsite two consisted of multiple segments of 8 in. diameter VCP, totaling approximately 365 m (1,200 ft) in length. This pipeline segment was located between manholes S-19D and S-21D, where it connected with the 100-D-31:1 pipeline. The pipelines from the following 1700-D Buildings were connected to the 100-D-31:2 pipelines: 1704-D, 1707-D, 1707-DA, 1713-DD, 1717-D, 1719-D, and 1722-D. Another portion of the pipeline was located east of manhole S-21D and serviced the 108-D Building.

For specific remedial information see subsite 1.

Waste Type: Not Specified**Waste Description:** The waste consists of steel piping, concrete, and soil .

Closure Info: 100-D-31:1 and 100-D-31:2 were addressed as a group. The information below documents information for the group of sites.

Remedial action was performed between June 18, 2007 and July 17, 2008. The final excavation depths for 100-D-31:1 and 100-D-31:2 were approximately 5 m (16 ft) and 3 m (9 ft), respectively. The excavation resulted in approximately 2,512 bank cubic meters (BCM) (3,287 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility, including 756 m (2,480 ft) of pipe.

The Contaminants of potential concern for the subsites included antimony, barium, copper, cadmium, chromium (total), lead, manganese, nickel, silver, zinc, mercury, hexavalent chromium, cesium-137, cobalt-60, europium-152, europium-154, europium-155, uranium-233/234, uranium-235, uranium-238, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs).

Verification sampling was performed on August 11 and 12, 2009. The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were also presented as Attachment 1 of the 95% upper confidence limit (UCL) calculation (Appendix B of the RSVP).

Analytical results show that residual contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

The SubSite is Part Of:**Code:** 100-D-31**Names:** 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

190-D High Bay - A 45.7 cm (18 in) process sewer line exited the north side to a 91.4 cm (36 in) line, which headed west to the 205.74 cm (6 ft 9 in) line to the 116-D-5 outfall, and a 76.2 cm (30 in) process sewer line exited the north side to a 91.4 cm (36 in) line, which headed west to the 205.74 cm (6 ft 9 in) line to the 116-D-5 Outfall. Three other lines exited the east side of the 190-D Building, a 10 cm (4 in) cast iron, a 15 cm (6 in) cast iron, and a 15 cm (6 in) VCP, which all joined into a 15 cm (6 in) VCP that headed north to the west side of the 1728D Building location (M-1904-D, Sheet 5, W-71477).

Location: The 190-D sewer pipelines are bound by manholes S-13D and P-9D to the east and manholes S-11D and P-13D to the west. The pipelines included in this subsection transported process sewer waste from the northeast corner of the 186-D Building and the north side of the 190-D Building toward the 116-D-5 outfall. The pipelines also transported the septic sewer waste from the 185-D, 186-D, and 190-D Buildings.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

Closure Info: Remedial action at the 100-D-31:4 pipeline subsite was performed between September 26, 2008 and December 10, 2009. Excavation continued until all debris and contamination associated with the pipeline structure had been removed. The site was excavated to depths ranging from approximately 3.8 to 4.8 m (13 to 16 ft), resulting in approximately 9,883 BCM (12,926 BCY) of soil and piping/debris being removed for disposal at ERDF. In addition, approximately 636 linear m (2,087 linear ft) of pipe were removed. This piping was sorted within the excavation and direct loaded for disposal at ERDF.

During the remediation of the 100-D-31:4 pipeline subsite, it was determined that construction of a land bridge spanning a portion of the open excavated waste site trench was needed to support both existing and future pump-and-treat lines prior to cleanup verification statistical sampling. Three focused samples were collected within 1 m (3.3 ft) of either side of the pipeline along the center line of the bottom of the 100-D-31:4 excavation. No results from focused sampling within the area of the then proposed land bridge were above shallow zone remedial action goals (RAGs). The Washington State Department of Ecology approved construction of the land bridge in a regulatory agreement titled ???Soil Bridges at 100-D-31:4 and 100-D-31:8?? (Ecology 2009). The 100-D-31:4 land bridge was constructed on November 16, 2009.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:5

Classification: Accepted

Names: 100-D-31:5; 188-D Ash Disposal Pipeline

Reclassification: Interim Closed Out (10/22/2009)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package for the 100-D-31:5 subsite, (RSVP-2008-058), documents that the subsite has achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and in the Remaining Sites ROD.

The site is a 133 meter (370 foot) long underground 20 centimeter (8 inch) diameter ashcolite pipeline. The pipeline was located in a north-south orientation between the former 184-D Powerhouse and the 188-D Ash Disposal Basin. From the powerhouse, the 100-D-31:5 pipeline

carried a slurry of coal ash and raw river water. The slurry was transported to the ash disposal basin (126-D-1 waste site).

Remedial action was performed between October 29, 2007, and January 9, 2008. There were no anomalies or stained soil discovered during remediation. Even though coal ash was present throughout the site, no ash or sediment was present in the pipeline. The 100-D-31:5 site was excavated to between 1.2 m (4 ft) and 1.7 m (5.5 ft) below grade. Approximately 852 bank cubic meters (BCM) (1,114 bank cubic yards [BCY]) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. Approximately 94 BCM (123 BCY) of material was disposed at the Environmental Restoration Disposal Facility, including removal of the pipeline.

The COPCs for verification sampling were determined using historical process knowledge. Metals were identified as site COPCs; hexavalent chromium was also included as a COPC to support an evaluation of chromium in the vadose zone soil at the 100-D Area. Analytical data from coal ash samples collected in 1992 from the 188-D ash disposal basin indicated the presence of fluoride, nitrate, sulfate, and cyanide. Therefore, these constituents were added to the list of COPCs.

A preliminary examination of the analytical data from samples collected on August 26, 2008 found hexavalent chromium data with elevated practical quantization limits. In an effort to get better quality assurance/quality control (QA/QC) values, the project recollected the entire sample set on October 13 and December 30, 2008 and analyzed them for hexavalent chromium. The resulting data returned improved QA/QC values for hexavalent chromium. Rather than pick and choose individual sample data from the two sets of data the project chose to use the second data set, with the improved QA/QC values. However, it should be noted that the analytical results for hexavalent chromium were non-detected for all samples in both data sets.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the ROD, a comparison against ecological risk screening levels has been made for the site contaminants of potential concern and other constituents. Screening levels were exceeded for barium, boron, mercury, manganese, selenium, vanadium, and zinc at the 100-D-31:5 subsite. Exceeding screening values is intended to trigger additional evaluation and does not necessarily indicate the existence of additional risk to ecological receptors. Concentrations of manganese, mercury, and vanadium are below site background levels. Concentrations of barium, selenium, and zinc are above background levels. No established background value is available for boron, although one is expected to be established as part of the Risk Assessment/Feasibility Study (RI/FS). Concentrations of barium, boron, selenium, and zinc will be evaluated in the context of additional lines of evidence for risk to ecological receptors as part of the final closeout decision for this site.

A calculation of the Hazard Quotient and Carcinogenic Risk Calculation for Protection of Groundwater was provided in Appendix A of the RSVP. A comparison of ecological risk screening levels to the barium, boron, mercury, manganese, selenium, vanadium, and zinc data was provided in Appendix E of the RSVP.

Verification sampling results support an evaluation that residual contaminant concentrations at the subsite do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep).

Location: The pipeline was located in a north-south orientation between the former 184-D Powerhouse and the 188-D Ash Disposal Basin.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

The SubSite is Part Of:**Code:** 100-D-31**Names:** 100-D-31; 100-D Water Treatment Facilities Underground Pipelines**Code:** 100-D-31:6**Classification:** Accepted**Names:** 100-D-31:6; 184-D Powerhouse Sewer Pipelines**Reclassification:** Interim Closed Out (8/24/2009)**Type:** Process Sewer**Start Date:****Status:** Inactive**End Date:**

Description: The Remaining Sites Verification Package, (RSVP-2008-054) documents that the 100-D-31:6 (184-D Powerhouse Sewer Pipelines) subsite, has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) for interim closure. The objectives were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. This subsite consists of four segments of sewer pipes, approximately 329 m (1,079 ft) of vitreous clay pipe encased in concrete and 30 m (98 ft) of steel pipe that serviced the 184-D Powerhouse: two 30.48 cm (12 in) process sewer lines exited the south side, each joining a 45.72 cm (18 in) line to the 205.74 cm (6 ft 9 in) line to the 116-D-5 outfall; & two 38.1 cm (15 in) process sewer lines exited the north side and headed east, connecting to the 205.74 cm (6 ft 9 in) line to the 116-D-5 outfall.

Location: The 100-D-31:6 subsite is located northwest of the 105-D Reactor and included a total of four pipeline segments, two on the north side and two on the south side of the 184-D Powerhouse.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

Closure Info: Remedial action at the subsite was performed between November 1, 2007 and March 5, 2008. The site was excavated between 1.5 m (5 ft) and 3.3 m (7.5 ft) below grade resulting in approximately 371 bank cubic meters (BCM) (485 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility, including approximately 329 m (1,079 ft) of vitreous clay pipe encased in concrete and 30 m (98 ft) of steel pipe. Approximately 2,440 BCM (3,192 BCY) of soil (overburden) was removed and stockpiled for evaluation as clean backfill.

The 100-D Area Technical Baseline Report indicated sodium sulfate, tri-sodium phosphate, and chromates were used to treat the 184-D powerhouse boiler water; therefore, analysis for anions by ion chromatography was added primarily to measure levels of sulfate. Verification sampling was performed on October 7, 2008, to collect data to determine if the remedial action goals had been met. The contaminants of potential concern for verification sampling included total chromium, lead, mercury, anions, pesticides, and polycyclic aromatic hydrocarbons. Although not COPCs, arsenic, antimony, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were included in the analyses of inductively coupled plasma (ICP) metals.

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and are presented in the RSVP in Attachment 1 of the 95%

UCL calculations.

Soil cleanup levels were established in the ROD based on a limited ecological risk assessment. Although not required by the ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern and other constituents and is presented in Appendix C. Screening levels were exceeded for antimony, barium, boron, manganese, mercury, vanadium, and zinc. Exceeding screening values is intended to trigger additional evaluation and does not necessarily indicate the existence of risk to ecological receptors. Because concentrations of antimony, manganese, and vanadium are below background levels, it is believed that the presence of these constituents does not pose a risk to ecological receptors. Background values for Washington State are used only when Hanford Site specific background values are not available. An established background value is not available for boron at this time. Mercury (95% upper confidence limit [UCL] value above background), barium (95% UCL value below background but individual statistical sample results above background), and boron (no established background), will be evaluated in the context of additional lines of evidence for risk to ecological receptors as part of the final closeout decision for this site.

The subsite has been remediated in accordance with the Remaining Sites ROD and the RDR/RAWP. Analytical results for the sampling decision units were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Accordingly, an interim closure reclassification is supported for the 100-D-31:6 subsite. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:7

Classification: Accepted

Names: 100-D-31:7; 116-D-5 and D-Pond Sewer Pipeline

Reclassification: Interim Closed Out (10/14/2010)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package for the 100-D-31:7, RSVP-2010-046, has documented that the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) have been met as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Remaining Sites Record of Decision (ROD).

Subsite 7 consisted of pipelines that transported process and septic sewer waste from 1944 to 1994. This subsite is a 2-meter (6-foot, 9-inch) square pipeline that collected sewer wastes from smaller pipelines and fed into the 116-D-5 Outfall. The pipeline was approximately 480 meters (1,574.9 feet) long. The 116-D-5 and D-Pond sewer pipeline transported process waste from junction box P 13D north to the 116-D-5 outfall. It also includes the vitrified clay pipe transporting septic sewer waste from manhole S-19D to manhole S-18D.

Location: The 100-D-31:7 is a north-south oriented pipeline located north-northwest of the 105-D Reactor.

Waste Type: Not Specified

Waste The waste consists of steel piping, concrete, and soil .

Description:

Closure Info: Remedial action at the subsite began on November 5, 2007, and continued through December 9,

2009. The site was excavated to depths between 12 m (40 ft) and 16 m (53 ft) below grade, resulting in approximately 17,684 bank cubic meters (BCM) (23,130 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility, including approximately 480 m (1,574.9 ft) of pipe.

An intact 946.3-L (250-gal) motor oil storage tank was found within the layback of the subsite approximately 12 m (36 ft) west of the demolished 1716-D Building. The tank was identified as being associated with the 130-D-1, 1716 Gasoline Storage Tank waste site.

While relocating the tank from the excavation layback, approximately 95 L (25 gal) of oily fluid spilled onto a polyethylene-lined containment area set up adjacent to the tank. No oily fluid was released to the soil. The oily fluid was sampled for waste designation, and the remaining fluid was absorbed using soil from the surrounding area. The soil underneath the tank was inspected and it was determined that no leaks had occurred from the pipe that was previously attached to the tank. All piping associated with the 130-D-1 waste site that was present within the 100-D-31:7 excavation was removed. The remaining soil will be assessed during remediation and closeout verification of the 130-D-1 waste site.

Contaminants of potential concern for the subsite were identified based on process knowledge and existing information about the 100-D-31 pipelines sites plus those identified in the 100 Area RDR/RAWP included: chromium (total) and mercury, antimony, barium, copper, cadmium, lead, manganese, nickel, silver, zinc, hexavalent chromium, cesium-137, cobalt-60, europium-152, europium-154, europium-155, strontium-90, uranium-233/234, uranium-235, uranium-238, pesticides, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and polychlorinated biphenyls.

On February 10, 2010, four verification soil samples were collected to support the construction of a land bridge at the northern end of the 100-D-31:7 pipeline subsite. The remaining statistical and focused verification soil samples were collected on April 27 and 29, 2010. All sampling was performed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan. The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were also presented as part of the 95% UCL calculation in Appendix B of the RSVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:8

Classification: Accepted

Names: 100-D-31:8; 183-D and 186-D Northern Sewer Pipelines

Reclassification: Interim Closed Out (10/18/2011)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-D-31:8 pipeline subsite is made up of piping from two different sewer systems (sanitary and process sewers).

The following are part of the process sewer:

A 121.94 cm (48 in) reinforced concrete process sewer line exited the north side of the 183-D filter Plant connecting to a 144.2 cm (4 ft 9 in) concrete box pipe, connecting to a 167.54 cm (5 ft 6 in) concrete box pipeline, to the 205.74 cm (6 ft 9 in) line (100-D-31:7) to the 116-D-5 outfall (W-72688).

The following are part of the sanitary sewer:

A 20 cm (8 in) vitrified clay pipeline north of the 183-D filter plant and extending to above the northwest side of the 186-D Building and connecting to the 100-D-31:4 pipeline (W-72688).

Location: The 183-D and 186-D northern sewer pipelines are vitrified clay pipelines and reinforced concrete pipelines exiting the north side of the 183-D Building, as well as an east-west trending reinforced concrete pipeline segment from junction box P-3D to junction box P-13D.

Process Description: The process sewer received raw water drained from the 182-D and 183-D Buildings (also see 100-D-31:11). It also received waste water (backwash) and overflow from the 183-D Filter Building. The sanitary sewer received septic waste from the lavatories in the 182-D Pump House and 183-D Headhouse. The 100-D-31:8 pipelines received waste water from the north side of the 182-D and 183-D Buildings via the 100-D-31:11 pipelines at junction box P-3D and at a second connection along the same pipeline approximately 23 meters (75 ft) to the south. The 100-D-31:8 pipelines also received waste water from the 186-D Building where it connected to the 100-D-31:9 pipelines at manhole S-10D and at a second connection approximately 18 meters (59 ft) to the east along the same pipeline. The waste water was then transferred to the 100-D-31:4 and 100-D-31:7 pipeline segments at junction box P-13D and manhole S11D.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

Closure Info: 100-D-31:8, 100-D-31:9 and 100-D-31:10 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-31:8 subsite was performed between August 27, 2009, and May 19, 2010. The final excavation depth for 100-D-31:8 was approximately 9 meters (30 ft). The excavation resulted in approximately 5,732 bank cubic meters (BCM) (7,509 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility (ERDF). Additionally, approximately 535 meters (1,755 ft) of pipe were removed and disposed at the ERDF. Approximately 61,330 BCM (80,432 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. It was determined that construction of a land bridge spanning a portion of the open excavated waste site trench was needed to support both existing and future pump-and-treat lines prior to conducting cleanup verification sampling. Demolition of the 1902-D water tank in January 2010 resulted in a rust stained area outside the north end of the 100-D-31:8 waste site footprint. This area was sampled (J19KJ9) for characterization and the impacted surface soils were disposed of at ERDF.

Remedial action at the 100-D-31:9 subsite was performed between July 15, 2009, and April 21, 2010. The final excavation depth for 100-D-31:9 was approximately 7 meters (23 ft). The excavation resulted in approximately 11,485 BCM (15,045 BCY) of material removed for disposal at the ERDF. Additionally, approximately 705 meters (2,313 ft) of pipe were removed and disposed of at the ERDF. Approximately 44,310 BCM (57,957 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill.

Remedial action at the 100-D-31:10 subsite was performed between December 29, 2009, and January 27, 2010. The final excavation depth for 100-D-31:10 was approximately 3 meters (10 ft). The excavation resulted in approximately 208 BCM (272 BCY) of material removed for disposal at the ERDF. Additionally, approximately 128 meters (420 ft) of pipe were removed and disposed of at the ERDF. Approximately 1,544 BCM (2,019 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. A section of the 100-D-31:10 pipeline subsite is located adjacent to the active 199-D5-33 groundwater monitoring well. To maintain structural integrity of the well, a section of the 100-D-31:10 pipeline subsite was left in place, resulting in a small land bridge measuring 11 meters (36 ft) wide across the pipeline excavation.

On February 22, 2010, confirmatory sampling was being conducted at 100-D-63, test pit 16. While backfilling the test pit, a piece of concrete fell out of the backhoe bucket and struck one of the two pipes in the bottom of the excavation, causing it to leak water. Approximately 37,854 liters (10,000 gal) of raw water was released due to this pipeline not being properly valved off from the export water line. It was unclear whether the leaking water was contaminated. Therefore, Ecology agreed to allow the released raw water to be pumped to the 100-D-31:9 open excavation. In the course of isolating and draining the export water pipeline to repair the leak, and waiting for approval to pump the water into the 182-D Reservoir, approximately 7,571 liters (2,000 gal) of water was pumped from the export water line to the 100-D-31:8 subsite. On March 2, 2010, in-process samples were collected from inside the water release footprints within the 100-D-31:8 and 100-D-31:9 open excavations. On March 4, 2010, an in-process soil sample (J19L76) was collected from outside the water release footprint in 100-D-31:9. Based on results of these in-process samples, the soil from within the water release footprints was placed in the associated overburden stockpiles. These in-process sample results were not used for determining the interim closure.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:9

Classification: Accepted

Names: 100-D-31:9; 183-D and 186-D Process Sewer Pipelines

Reclassification: Interim Closed Out (10/18/2011)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-D-31:9 pipeline subsite is made up of piping from two different sewer systems (sanitary and process sewers).

The following are part of the process sewer:

A 106.7 cm (42 in) process sewer line exiting the east side of the 183-D Building to junction P-6D, connecting to a 114.3 cm (3 ft 9 in) pipe (100-D-31:8) that runs north to a 167.54 cm (5 ft 6 in) line, east to the 205.74 cm (6 ft 9 in) line (100-D-31:7) to the 116-D-5 outfall (W-72883, W-72688, W-72689). Two concrete process sewer pipes running north-south between the 183-D and 186-D buildings, joining together to a 114 cm (45 in) reinforced concrete box pipe between the buildings (M-1904-D, Sheet 5).

The following are part of the sanitary sewer:

A 20 cm (8 in) vitrified clay pipeline that exited the east side of the 183-D building and turned

north to connect to the 100-D-31:8 pipeline (W-72883). Two 15 cm (6 in) vitrified clay pipelines that exited the west side of the 186-D Building and connected to the 20 cm (8 in) main sanitary sewer trunkline (W-71788).

Location: The 183-D and 186-D process sewer pipelines extend from the intersection with the reinforced concrete pipe (RCP) exiting the east side of the 183-D Building to manhole S-10D, and comprise the vitrified clay pipe and RCP pipelines from the east side of the 183-D Building and the west side of the 186-D Building.

Process Description: The process sewer received waste water from floor drains and sumps in the 183-D Pump House and drainage from the 186-D Waste Acid Reservoir (120-D-2). A portion of the process sewer was the main trunkline that was downstream from the 100-D-50:7 pipeline. The sanitary sewer received septic waste from the lavatories in the 183-D Pump House and 186-D Demineralization Plant. The 100-D-31:9 pipelines consist of the 183-D and 186-D Buildings process sewer. These pipelines exit the buildings at various locations, including a 24 inch diameter vitrified clay pipe (VCP) and a 54 inch diameter concrete pipe, which are continuations of the 100-D-50:7, 183DR Head House Floor Drain and Catch Basins Pipelines, and connect to the 100-D-31:8 pipelines at manhole S-10D and a second connection approximately 18 meters (59 ft) to the east along the same pipeline.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

Closure Info: 100-D-31:8, 100-D-31:9 and 100-D-31:10 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-31:8 subsite was performed between August 27, 2009, and May 19, 2010. The final excavation depth for 100-D-31:8 was approximately 9 meters (30 ft). The excavation resulted in approximately 5,732 bank cubic meters (BCM) (7,509 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility (ERDF). Additionally, approximately 535 meters (1,755 ft) of pipe were removed and disposed at the ERDF. Approximately 61,330 BCM (80,432 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. It was determined that construction of a land bridge spanning a portion of the open excavated waste site trench was needed to support both existing and future pump-and-treat lines prior to conducting cleanup verification sampling. Demolition of the 1902-D water tank in January 2010 resulted in a rust stained area outside the north end of the 100-D-31:8 waste site footprint. This area was sampled (J19KJ9) for characterization and the impacted surface soils were disposed of at ERDF.

Remedial action at the 100-D-31:9 subsite was performed between July 15, 2009, and April 21, 2010. The final excavation depth for 100-D-31:9 was approximately 7 meters (23 ft). The excavation resulted in approximately 11,485 BCM (15,045 BCY) of material removed for disposal at the ERDF. Additionally, approximately 705 meters (2,313 ft) of pipe were removed and disposed of at the ERDF. Approximately 44,310 BCM (57,957 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill.

Remedial action at the 100-D-31:10 subsite was performed between December 29, 2009, and January 27, 2010. The final excavation depth for 100-D-31:10 was approximately 3 meters (10 ft). The excavation resulted in approximately 208 BCM (272 BCY) of material removed for disposal at the ERDF. Additionally, approximately 128 meters (420 ft) of pipe were removed and disposed of at the ERDF. Approximately 1,544 BCM (2,019 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. A section of the 100-D-31:10 pipeline subsite is located adjacent to the active 199-D5-33 groundwater monitoring well. To maintain structural integrity of the well, a section of the 100-D-31:10 pipeline subsite was

left in place, resulting in a small land bridge measuring 11 meters (36 ft) wide across the pipeline excavation.

On February 22, 2010, confirmatory sampling was being conducted at 100-D-63, test pit 16. While backfilling the test pit, a piece of concrete fell out of the backhoe bucket and struck one of the two pipes in the bottom of the excavation, causing it to leak water. Approximately 37,854 liters (10,000 gal) of raw water was released due to this pipeline not being properly valved off from the export water line. It was unclear whether the leaking water was contaminated. Therefore, Ecology agreed to allow the released raw water to be pumped to the 100-D-31:9 open excavation. In the course of isolating and draining the export water pipeline to repair the leak, and waiting for approval to pump the water into the 182-D Reservoir, approximately 7,571 liters (2,000 gal) of water was pumped from the export water line to the 100-D-31:8 subsite. On March 2, 2010, in-process samples were collected from inside the water release footprints within the 100-D-31:8 and 100-D-31:9 open excavations. On March 4, 2010, an in-process soil sample (J19L76) was collected from outside the water release footprint in 100-D-31:9. Based on results of these in-process samples, the soil from within the water release footprints was placed in the associated overburden stockpiles. These in-process sample results were not used for determining the interim closure.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:10

Classification: Accepted

Names: 100-D-31:10; 182-D North Septic Sewer Pipeline

Reclassification: Interim Closed Out (10/18/2011)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite is a 20 cm (8 in) vitrified clay process sewer pipeline about 144 meters long.

Location: The pipeline exited the northwest corner of the 182-D Building, turns east and continues on the north side of the 182 Building, and ends at manhole P-20D.

Process Description: The process sewer receives drainage from the 182-D Inlet House No. 1. The structure contains the main level control cone valves for the inlet pipes to the reservoir. The second floor contains the chlorinating equipment for treating the incoming water (HAN-10970, Volume 3). The 100-D-31:10 pipelines consist of the 182-D Building septic sewer. These pipelines exit the building at various locations and connect to the 100-D-31:11 pipelines at manhole P-20D. The 100-D-31:11 pipelines transported the waste water to the 100-D-31:8 pipelines at the junction box P-3D and a second connection along the same pipeline approximately 23 meters (75 ft) to the south.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil.

Closure Info: 100-D-31:8, 100-D-31:9 and 100-D-31:10 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-31:8 subsite was performed between August 27, 2009, and May 19, 2010. The final excavation depth for 100-D-31:8 was approximately 9 meters (30 ft). The excavation resulted in approximately 5,732 bank cubic meters (BCM) (7,509 bank cubic yards [BCY]) of material removed for disposal at the Environmental Restoration Disposal Facility (ERDF). Additionally, approximately 535 meters (1,755 ft) of pipe were removed and disposed

at the ERDF. Approximately 61,330 BCM (80,432 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. It was determined that construction of a land bridge spanning a portion of the open excavated waste site trench was needed to support both existing and future pump-and-treat lines prior to conducting cleanup verification sampling. Demolition of the 1902-D water tank in January 2010 resulted in a rust stained area outside the north end of the 100-D-31:8 waste site footprint. This area was sampled (J19KJ9) for characterization and the impacted surface soils were disposed of at ERDF.

Remedial action at the 100-D-31:9 subsite was performed between July 15, 2009, and April 21, 2010. The final excavation depth for 100-D-31:9 was approximately 7 meters (23 ft). The excavation resulted in approximately 11,485 BCM (15,045 BCY) of material removed for disposal at the ERDF. Additionally, approximately 705 meters (2,313 ft) of pipe were removed and disposed of at the ERDF. Approximately 44,310 BCM (57,957 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill.

Remedial action at the 100-D-31:10 subsite was performed between December 29, 2009, and January 27, 2010. The final excavation depth for 100-D-31:10 was approximately 3 meters (10 ft). The excavation resulted in approximately 208 BCM (272 BCY) of material removed for disposal at the ERDF. Additionally, approximately 128 meters (420 ft) of pipe were removed and disposed of at the ERDF. Approximately 1,544 BCM (2,019 BCY) of soil (overburden) was removed and stockpiled for evaluation for use as clean backfill. A section of the 100-D-31:10 pipeline subsite is located adjacent to the active 199-D5-33 groundwater monitoring well. To maintain structural integrity of the well, a section of the 100-D-31:10 pipeline subsite was left in place, resulting in a small land bridge measuring 11 meters (36 ft) wide across the pipeline excavation.

On February 22, 2010, confirmatory sampling was being conducted at 100-D-63, test pit 16. While backfilling the test pit, a piece of concrete fell out of the backhoe bucket and struck one of the two pipes in the bottom of the excavation, causing it to leak water. Approximately 37,854 liters (10,000 gal) of raw water was released due to this pipeline not being properly valved off from the export water line. It was unclear whether the leaking water was contaminated. Therefore, Ecology agreed to allow the released raw water to be pumped to the 100-D-31:9 open excavation. In the course of isolating and draining the export water pipeline to repair the leak, and waiting for approval to pump the water into the 182-D Reservoir, approximately 7,571 liters (2,000 gal) of water was pumped from the export water line to the 100-D-31:8 subsite. On March 2, 2010, in-process samples were collected from inside the water release footprints within the 100-D-31:8 and 100-D-31:9 open excavations. On March 4, 2010, an in-process soil sample (J19L76) was collected from outside the water release footprint in 100-D-31:9. Based on results of these in-process samples, the soil from within the water release footprints was placed in the associated overburden stockpiles. These in-process sample results were not used for determining the interim closure.

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:11

Classification: Accepted

Names: 100-D-31:11; 182-D and 183-D Sewer Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-D-31:11 pipeline subsite is made up of piping from two different sewer systems (sanitary and process sewers).

The following are part of the process sewer:

A 91.4 cm (36 in) line exits northeast side of the 182-D Reservoir, east to the 121.9 cm (48 in) process sewer line, ending up at the 116-D-5 outfall (W-71520).

A 106.7 cm (42 in) process sewer line exits the east corner of the building to the 121.9 cm (48 in) line heading to the 116-D-5 outfall (W-72845).

A 20 cm (8 in) vitrified clay sewer pipe exits the northeast corner of the 182-D building and connects to the 91.4 cm (36 in) line mentioned above (W-72835).

A 45.5 cm (18 in) vitrified clay pipe exited the west side of 183-D and connected to the 121.9 cm (48 in) north-south concrete pipe between the 182-D and 183-D Buildings.

Also, see the site comments for additional short segments subsequently added to this subsite (W-72688).

The following are part of the sanitary sewer:

A 15 cm (6 in) vitrified clay sewer pipe exits the east side of the 182-D building and joins with the 20 cm (8 in) vitrified clay pipe traveling north between the 182-D and 183-D buildings (H-1-26378).

Location: The 182-D and 183-D sewer pipelines transported process sewer and septic sewer waste from the east side of the 182-D building and the west side of the 183-D Building. The subsite is bounded to the south by the concrete manhole, and it is bounded at the north end by junction box P-3D. Additional short segments, transferred from other subsites, are connected to the 183-D and 182-D Buildings.

Process Description: The process sewer received raw water drained from the suction wells in the 182-D Pump House; raw water from the 182-D Reservoir overflow and drainage from the 182-D Inlet House No. 1 (100-D-31:10). The sanitary sewer received septic waste from the lavatories in the 182-D Pump House and 183-D Headhouse.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

The SubSite is Part Of:

Code: 100-D-31

Names: 100-D-31; 100-D Water Treatment Facilities Underground Pipelines

Code: 100-D-31:12

Classification: Accepted

Names: 100-D-31:12; 183-D West Process Sewer Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 183-D west process sewer pipelines transported treated cooling water from eight process sewer pipelines exiting the west side of the 183-D Building. The pipeline subsite is bounded on the north end by junction box P-2D.

Location: Between the west side of the 183-D Building and the junction box P-2D to the north.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil .

The SubSite is Part Of:**Code:** 100-D-31**Names:** 100-D-31; 100-D Water Treatment Facilities Underground Pipelines**Code:** 100-D-32**Classification:** Accepted**Names:** 100-D-32; Minor Construction Burial Ground #6**Reclassification:** Interim Closed Out (12/10/2009)**Type:** Burial Ground**Start Date:** 1/1/1956**Status:** Inactive**End Date:****Description:** The site has been evaluated and reclassified to interim closed out. It consisted of a small 3.0-meter (10-foot) by 3.0-meter (10-foot) burial ground. During the March 1999 visit, there was no evidence of the site.**Location:** The site is approximately 150 meters (500 feet) southeast of the 105-D Reactor Building and 25 meters (82 feet) north of the railroad tracks (north of 118-D-3 Burial Ground).**Process Description:** The trench was excavated in the Fall of 1956. HW-46715 states the site will be used for disposal of contaminated material and equipment. It has been assumed that the site was used as planned.**Waste Type:** Equipment**Waste Description:** The burial ground was excavated to receive contaminated reactor and effluent system equipment. Potential contaminants include: Co-60, Ni-63, No-59, Sm-151, Pd-107, Sr-90, Ag-108, Am-241, Ba-133, C-14, H-3, Cs-137, Eu-152 and 154, Pu-238, 239 and 241, Ca-41, Cd-113, Kr-85, U-238, Tc-99, Zr-93, chromium, lead and mercury.**Closure Info:** The Cleanup Verification Package for 100-D-32 Minor Construction Burial Ground #6, (CVP-2009-00003), has documented that site verification sampling results support a reclassification to Interim Closed Out. The waste site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), Benton County, Washington (Burial Grounds ROD).

Remedial action began on August 28, 2007, with the removal of 375 bank cubic meters (BCM) (490 bank cubic yards [BCY]) of overburden material. The overburden was stockpiled east of the burial ground. Excavation continued through September 5, 2007, to a remedial design depth of approximately 3 m (10 ft), resulting in approximately 600 BCM (785 BCY) of material removed for disposal at ERDF. Only a small amount of concrete debris was unearthed in the northwest corner of the site.

Given that only a small amount of concrete debris was encountered during excavation, the floor of the excavation had not reached beyond the limit of disturbed soil, and the uncertainty of the depth of the burial ground, further exploratory excavation was completed on July 31, 2008, at the base of the burial ground excavation to verify that no waste was present below the 3 m (10 ft) remedial design limit. An additional 525 BCM (687 BCY) of soil was removed from the side slopes and excavation floor and placed on the overburden stockpile. Exploratory excavation was performed to a depth of 6 m (20 ft), with native soil encountered at a depth of approximately 5 m (17 ft) below surface grade.

During remedial excavation only a minor amount of concrete debris was unearthed in the northwest corner of the 100-D-32 Burial Ground. No spent nuclear fuel, anomalous material

(containers, stained soils, or other waste forms), or other waste indicative of the disposal of contaminated material or equipment were discovered. It is likely that the 100-D-32 Burial Ground was never used and, as reported in Heid (1956), it had been excavated and discussed in the context of potential future use (i.e., "will be used").

The contaminants of potential concern (COPCs) for the 100-D-32 Burial Ground are cobalt-60, cesium-137, europium-152, europium-154, americium-241, nickel-63, strontium-90, plutonium-238, plutonium-239, plutonium-240, uranium-238, chromium (total), lead, and mercury as specified in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 2001a). Due to a site-wide effort to identify the source of chromium contamination in the groundwater, hexavalent chromium was added as a COPC for closeout.

Results of the verification sampling, laboratory analyses, and data evaluations for the site (which includes the remediation footprint and the overburden stockpile) indicated that all RAOs and RAGs for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Verification sampling results show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code: 100-D-42	Classification: Accepted
Names: 100-D-42; Buried VSR Thimble Site	Reclassification: Interim Closed Out (5/13/2010)
Type: Burial Ground	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1955
Description:	The site is a solid waste burial ground. The burial ground is east of the two 152-centimeter (60-inch) reactor effluent lines.
Location:	The site is located east of the 100-D Reactor Building, outside the reactor security fence and south of the railroad spur that services 100-D.
Waste Type:	Equipment
Waste Description:	The waste is a buried Vertical Safety Rod (VSR) thimble. The VSR thimbles were made of aluminum similar to that used in the process tubes and should contain similar isotopic composition. Sampling of process tubes was conducted in March 1967. The radionuclide levels, when decay corrected by Dorian and Richards to March 1977, were 5.9E+03 picocuries of manganese-54 per gram of aluminum and 2.5E+07 picocuries of cobalt-60 per gram of aluminum. When buried, the thimble's exterior surfaces would also have been contaminated with activated graphite products and potassium borate.
Closure Info:	100-D-42, 100-D-43 and 100-D-45 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP-2009-00004) demonstrates that the 100-D-42, 100-D-43, and 100-D-45 waste sites have met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Records of Decision (EPA 1999 and 2000). The 100-D-42 Buried VSR Thimble Site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (EPA, 2004). The 100-D-43 and 100-D-45 Buried VSR Thimble Sites were included in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2, Operable Units (EPA 2000).

Due to the close proximity to each other and the type of debris encountered during excavation, the three sites were included in one CVP and interim closed out as one decision unit.

Remedial action at the sites began on September 6, 2007, and was completed on April 22, 2008. Contaminated soil and debris were excavated and removed from the burial grounds for shipment to ERDF. Field observations during excavation indicated the presence of VSR thimbles in two of the three burial grounds. Only concrete debris and plastic sheeting were found to be present in the 100-D-42 Burial Ground. The 100-D-43 Burial Ground contained VSR thimbles and other reactor hardware. Mastic, aluminum pipe, VSR thimbles, reactor hardware, and a drum containing rags were found in the 100-D-45 Burial Ground.

One anomaly was encountered in the 100-D-43 Burial Ground. A 57-L (15-gal) metal container partially filled with liquid was found during excavation. The container was found to have been breached and the contained liquid is suspected to have been water used for dust suppression during excavation activities. No suspect spent nuclear fuel was present in the burial grounds.

The remaining soils at the 100-D-42, 100-D-43, and 100-D-45 waste sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials containing COCs/COPCs at concentrations exceeding RAGs have been excavated and disposed at ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The excavation area has a maximum depth of approximately 7 m (23 ft). However, the entire excavation area is considered one decision unit and meets the more restrictive shallow zone cleanup criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code: 100-D-45	Classification: Accepted
Names: 100-D-45; 118-D-4B; Burial Ground 4B; Buried VSR Thimble Site	Reclassification: Interim Closed Out (5/13/2010)
Type: Burial Ground	Start Date:
Status: Inactive	End Date:
Description: The site is a solid waste burial ground. The burial ground is in close proximity to the (exhumed) 152-centimeter (60-inch) effluent lines.	
Location: The site is located east of the 105-D Reactor Building, outside the security fence and south of the railroad spur that services 100-D.	
Waste Type: Equipment	
Waste Description: The waste is a buried Vertical Safety Rod (VSR) thimble. The VSR thimbles were made of aluminum similar to that used in the process tubes and should contain similar isotopic composition. Sampling of process tubes was conducted in March 1967. The radionuclide levels, when decay corrected by Dorian and Richards to March 1977, were 5.9E+03 picocuries of manganese-54 per gram of aluminum and 2.5E+07 picocuries of cobalt-60 per gram of aluminum. When buried, the thimble's exterior surfaces would also have been contaminated with activated graphite products and potassium borate. Potential contamination includes: Co-60, Ni-63	
Closure Info: 100-D-42, 100-D-43 and 100-D-45 were addressed as a group. The information below documents information for the group of sites.	

The Cleanup Verification Package (CVP-2009-00004) demonstrates that the 100-D-42, 100-D-43, and 100-D-45 waste sites have met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Records of Decision (EPA 1999 and 2000). The 100-D-42 Buried VSR Thimble Site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (EPA, 2004). The 100-D-43 and 100-D-45 Buried VSR Thimble Sites were included in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2, Operable Units (EPA 2000).

Due to the close proximity to each other and the type of debris encountered during excavation, the three sites were included in one CVP and interim closed out as one decision unit.

Remedial action at the sites began on September 6, 2007, and was completed on April 22, 2008. Contaminated soil and debris were excavated and removed from the burial grounds for shipment to ERDF. Field observations during excavation indicated the presence of VSR thimbles in two of the three burial grounds. Only concrete debris and plastic sheeting were found to be present in the 100-D-42 Burial Ground. The 100-D-43 Burial Ground contained VSR thimbles and other reactor hardware. Mastic, aluminum pipe, VSR thimbles, reactor hardware, and a drum containing rags were found in the 100-D-45 Burial Ground.

One anomaly was encountered in the 100-D-43 Burial Ground. A 57-L (15-gal) metal container partially filled with liquid was found during excavation. The container was found to have been breached and the contained liquid is suspected to have been water used for dust suppression during excavation activities. No suspect spent nuclear fuel was present in the burial grounds.

The remaining soils at the 100-D-42, 100-D-43, and 100-D-45 waste sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials containing COCs/COPCs at concentrations exceeding RAGs have been excavated and disposed at ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The excavation area has a maximum depth of approximately 7 m (23 ft). However, the entire excavation area is considered one decision unit and meets the more restrictive shallow zone cleanup criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	100-D-48	Classification:	Accepted
Names:	100-D-48; 100-D Reactor Cooling Water Effluent Underground Pipelines	Reclassification:	Interim Closed Out (4/23/2001)
Type:	Radioactive Process Sewer	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1967
Description:	All four subsites have been remediated and interim closed out. The 100-D-48 site includes those underground pipelines that transported radioactive treated and untreated waste water from the 105-D Reactor Building to the 116-D-7 (107-D) Retention Basin and the 116-D-5 Outfall. The included pipeline components are listed below. There are many small drain pipelines that leave from the east and south sides of the 105-D Reactor Building and terminate at the 132-D-3 (1608-D) Building site. The pipelines that run from the 105-D Reactor and the 132-D-3 (1608-D) Building to either the 116-D-1A Trench and 116-D-1B Trench or connect to the main cooling water effluent pipelines are part of this site. The main cooling water effluent pipeline is a large 1.5-meter (60-inch) diameter reinforced concrete pipeline that exits the 105-D Reactor		

Building on the north side and continues north to the 116-D-7 (107-D) Retention Basin. A map in the Dorian and Richards document, UNI-946, indicates that some sections of the pipeline were replaced at least once (as does M-1904-D Sheet 8). The second (replacement) pipeline begins at a junction box south of the 116-D-7 (107-D) Retention Basin and runs parallel to the original pipeline up to the 116-D-7 (107-D) Retention Basin. Currently, a portion of the steel replacement pipeline remains in place above grade at the retention basin, and a soil berm indicates the location of the pipeline. This pipeline system also includes a 1.5-meter (60-inch) diameter by 1.3-centimeter (0.5-inch) thick wall, carbon steel cross-tie pipeline to the 105-DR effluent pipelines that begins adjacent to the 103-D Building and connects at a junction box to the west 100-DR Reactor Cooling Water Effluent Pipeline (site 100-D-49). This site includes a single pipeline that runs from the west end of the 116-D-7 (107-D) Retention Basin to the 116-DR-1 Trench and 116-DR-2 Trench and two pipelines from the west end of the 116-D-7 (107-D) Retention Basin to the 116-D-5 Outfall. Because of their length, these pipelines have been broken into four subsites: 100-D-48:1, the pipelines from 116-D-7 to the outfalls; 100-D-48:2, the pipelines from D Avenue to 116-D-7; 100-D-48:3, the pipelines from D Avenue to the 105-D Reactor; and 100-D-48:4, the small cooling water effluent pipelines at the 105-D Reactor. The site does not include the facilities where the pipelines terminate, or the pipelines (100-D-60) from the 116-D-5 Outfall to the bottom center of the Columbia River. The pipelines associated with (100-D-49) 100-DR Reactor Cooling Water Effluent Underground Pipelines or (100-D-50) 100-DR Reactor Process Sewer Underground Pipelines [pipelines that transported nonradioactive treated and untreated waste water from the 183-DR, 183-DR Clearwell area and the 105-DR Reactor Buildings to the 100-D-8 (1907-DR) Outfall] are not included in this site.

Location: Generally, the underground pipelines run in a north-south direction north of the 105-D Reactor, go to the 116-D-7 Retention Basin, and from there end at the 116-D-5 Outfall. Pipeline descriptions and associated structures are as follows. 105-D Reactor: - a 20 centimeter (8 inch) vent pipe exits the north side and extends to a junction box in the cross-tie pipeline - a 15 centimeter (6 inch) line and a 20.32 centimeter (8 inch) line exit the northeast corner to a 76 centimeter (30 inch) pipe, to a diversion box for the 116-D-1A trench - a 30 centimeter (12 inch) effluent line exits the northeast corner and runs to the 152.4 centimeter (60 inch) DR effluent mainline to 116-DR-9 - a 41 centimeter (16 inch) effluent pipe exits the east side and runs to a junction box, then to 116-D-1A - a 66 centimeter (26 inch) effluent line exits the south side and runs to a 76.2 centimeter (30 inch) line - a 152 centimeter (60 inch) main line runs to the 116-D-7 Retention Basin from the north side. A new main line was made just east of the original, crossing the original line approximately 160 meters (530 feet) south of the basin - a 152 centimeter (60 inch) cross-tie line connects the D and DR effluent lines, approximately 75 meters (250 feet) north of the 105-D Reactor. 1608-D Waste Water Pump House: - a 15 centimeter (6 inch) waste pipe exits the south side and proceeds east to the 116-D-1A Trench - a 61 centimeter (24 inch) pipe exits the east side, then runs north to the new 168 centimeter (66 inch) effluent line to 116-D-7 - a 66 centimeter (26 inch) line exits the east side and continues to the southeast corner of the 105-D Reactor. 107-D Retention Basin: - a 107 centimeter (42 inch) bypass line flows from the north west corner east to the 116-DR-1&2 Trench - a 107 centimeter (42 inch) line flows out the west end to the 116-D-5 Outfall - a 152 centimeter (60 inch) bypasses the before- mentioned 107 centimeter (42 inch) line, and flows northwest intersecting the 152 centimeter (60 inch) line coming from the DR retention basin.

Process Description: The pipelines were used to dispose of radioactive cooling and waste water from the reactor facility. One large main effluent pipelines drained cooling water from the 105-D Reactor. The small effluent pipelines that drained process waste from the sides (east and south) of the 105-D were joined into a single pipeline that ran to the 1608-D Building (Waste Water Pumping Station or Process Lift Station). The 1608-D Building was a rectangular shaped, two-story, reinforced concrete structure that was half below grade elevation. The purpose of this facility was to pump process effluent to the main effluent pipeline.

Related Sites/ Structures: The associated structures are the 105-D Building, the 132-D-3 (1608-D), the 116-D-7 Retention

Structures: Basin and the 116-D-5 Outfall. Other related sites are the 116-D-1A, 116-D-1B Trenches, and 116-DR-1, 116-DR-2 Trench, 100-D-85 105D Reactor Effluent Pipelines, 100-D-49.

Waste Type: Process Effluent

Waste Description: The waste is contaminated steel piping, concrete, and soil. Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, diatomaceous earth (a scouring agent), and sodium dichromate. Water pH was maintained at about 7.5, and free chlorine residual was about 0.2 milligrams per liter. Radionuclides discovered at the retention basin during sampling by Dorian and Richards (1978) included the following: plutonium-238, cesium-134, plutonium 239/240, cesium-137, strontium-90, hydrogen-3, uranium, europium-152, europium-154, europium-155, nickel-63, cobalt-60, and carbon-14.

This Site has the Following SubSites:

Code: 100-D-48:1

Names: 100-D-48:1; North Pipelines from 116-D-7 to the Outfalls

Code: 100-D-48:2

Names: 100-D-48:2; West Pipelines from D Avenue to 116-D-7

Code: 100-D-48:3

Names: 100-D-48:3; Effluent Pipelines from D Avenue to 105-D Reactor

Code: 100-D-48:4

Names: 100-D-48:4; Small Cooling Water Effluent Pipelines at 105-D Reactor

Code: 100-D-48:1

Classification: Accepted

Names: 100-D-48:1; North Pipelines from 116-D-7 to the Outfalls

Reclassification: Interim Closed Out (3/19/2001)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-D-48:1 pipeline sections were located north of the 116-D-7 Retention Basin and went to the 116-D-7 (1904-D Outfall). Pipeline components consisted of a 106.7 cm (42 in) reinforced concrete pipeline (RCP) from the retention basin to the outfall structure, a 106.7 cm (42 in) bypass pipeline, a 152.4 cm (60 in) steel pipeline, and a cross-tie pipeline from the 106.7 cm (42 in) RCP to the 152.4 cm (60 in) steel pipeline. These pipelines have been removed.

Location: Generally, the underground pipelines run in a north-south direction north of the 105-D Reactor, go to the 116-D-7 Retention Basin, and from there end at the 116-D-5 Outfall. Pipeline descriptions and associated structures are as follows.

107-D Retention Basin:

- a 107 centimeter (42 inch) bypass line flows from the north west corner east to the 116-DR-1&2 Trench
- a 107 centimeter (42 inch) line flows out the west end to the 116-D-5 Outfall
- a 152 centimeter (60 inch) bypasses the before- mentioned 107 centimeter (42 inch) line, and flows northwest intersecting the 152 centimeter (60 inch) line coming from the DR retention basin.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Waste Description:

Closure Info: 100-D-48:1, 100-D-49:1, 100-D-19 and UPR-100-D-4 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:1/49:1 Pipelines site began on December 28, 1998. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation reached the design limit.

Because remediation of the 100-D-48:1/49:1 Pipelines site required moving an active overhead power line, site remedial action and sampling were conducted in two phases. These separate phases are reflected by the long time period between the start and finish dates for excavation.

The excavation design depth generally corresponded with the invert elevation of the pipelines. At the completion of remedial action and removal of the engineered structure, the excavation was approximately 15,504 square meters (166,800 square feet) in area with a maximum depth of approximately 6.0 meters (20 feet) below ground surface. Approximately 107,266 metric tons (118,241 tons) of material from the D Area pipelines site have been disposed of at the ERDF through July 2000. Cleanup verification sampling began on April 3, 2000, and was finished on August 8, 2000. The ground surface in the vicinity of the site varies with an average elevation of approximately 134.4 meters (441 feet).

The CVP demonstrated that remedial action at the 100-D-48:1/49:1 Pipelines site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 100-D-48:1/49:1 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:1/49:1 Pipelines site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. Residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:1/49:1 Pipelines site (includes the 100-D-19 and UPR-100-D-4 sites) is verified to be remediated in accordance with the interim action ROD.

The SubSite is Part Of:

Code: 100-D-48

Names: 100-D-48; 100-D Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-48:2

Classification: Accepted

Names: 100-D-48:2; West Pipelines from D Avenue to 116-D-7

Reclassification: Interim Closed Out (9/26/2000)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This section contained two parallel pipelines that ran from D Avenue to the 116-D-7 Retention Basin. The most westerly of the pipelines was a 152.4 cm (60 in) reinforced concrete pipeline (RCP). The other was a 152.4 cm (60 in) steel pipeline. At approximately 237 m (777 ft) south of the entrance to the 116-D-7 Retention Basin the steel pipeline entered a junction box. In the junction box, a new 152.4 cm (60 in) pipeline was added. This pipeline continues north to the 116-D-7 Retention Basin.

Location: This segment ran from D Avenue north to the 116-D-7 Retention Basin.

Location:**Waste Type:** Not Specified**Waste Description:** The waste was contaminated steel piping, concrete, and soil.**Closure Info:** 100-D-48:2, 100-D-49:2, UPR-100-D-2 and UPR-100-D-3 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:2/49:2 Pipelines site began in July 1997. Excavation of the site involved removing the overburden materials, contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. In August 1999, the excavation reached the design limit. The excavation design depth generally corresponded with the invert elevation of the pipelines. The pipeline excavation profiles are in the sample design calculation briefs in Appendix D.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 20,475 square meters (220,280 square feet) in area with a maximum depth of approximately 6 meters (20 feet) below ground surface. During the time of excavation and waste disposal (December 1998 through September 1999) at the 100-D-48:2/49:2 Pipelines site, approximately 57,106 metric tons (62,960 tons) of material from 100-DR-1 Operable Unit pipelines were disposed of at the ERDF. Cleanup verification sampling began on August 23, 1999, and was finished on October 20, 1999. Because of the length of the pipeline site, the top-of-excavation elevation ranges from 138 meters (453 feet) near the retention basins to 143 meters (469 feet) near D Avenue.

The CVP demonstrated that remedial action at the 100-D-48:2/49:2 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). Materials from the 100-D-48:2/49:2 Pipelines site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils, including pipeline overburden stockpiles, have been sampled, analyzed, and modeled to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site and in overburden soils pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:2/49:2 Pipelines site is verified to be remediated in accordance with the ROD and may be backfilled. The pipeline overburden is verified as suitable for use as backfill in accordance with the ROD.

The SubSite is Part Of:**Code:** 100-D-48**Names:** 100-D-48; 100-D Reactor Cooling Water Effluent Underground Pipelines**Code:** 100-D-48:3**Classification:** Accepted**Names:** 100-D-48:3; Effluent Pipelines from D Avenue to 105-D Reactor**Reclassification:** Interim Closed Out (4/23/2001)**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** This subsite is the last section of the 105-D Reactor cooling water effluent pipelines, extending south from D Avenue to about 1.5 meters (5 feet) from the wall of the reactor foundation. The

subsite includes a 1.5 meter (60 inch) diameter reinforced concrete pipeline extending south from D Avenue to about 1.5 meters (5 feet) from the wall of the reactor foundation, a parallel 2 meter (66 inch) steel pipe that extends south from D Avenue to an east-west trending cross-tie line to 100-D-49:3, a 1.5 meter (60 inch) steel east-west trending cross-tie line connecting these subsite pipelines to 100-D-49:3 and two 20 centimeter (8 inch) steel lines ending south from the cross-tie to about 1.5 meters (5 feet) from the wall of the reactor foundation. The Decontamination and Decommissioning project is responsible for the remaining stub as part of the foundation removal.

Location: These pipelines extend south from D Avenue to about 1.5 meters (5 feet) from the wall of the reactor foundation. The site is located near the center of the 100-D/DR Area and is approximately 750 meters (2,461 feet) from the Columbia River at the nearest location.

Process Description: The pipelines were used to dispose of large quantities of radioactive cooling and waste water from the 105-D Reactor facility to the 116-D-7 (107-D) Retention Basin.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Closure Info: 100-D-48:3, 100-D-49:3, 100-D-5 and 100-D-6 were addressed as a group. The information below documents information for the group of sites.

The sites included in this remediation are 100-D-48:3, 100-D-49:3, 100-D-5, and 100-D-6. The entire remedial action for these sites is referred to as the 100-D-48:3/49:3 pipelines site. Remedial action at the 100-D-48:3/49:3 site began on October 28, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation was completed. The excavation design depth generally corresponded with the invert elevation of the pipelines.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 24,574 square meters (264,517 square feet) in area with a maximum depth of approximately 5.7 meters (18.7 feet). Approximately 55,561 metric tons (61,245 tons) of material from the 100-D-48:4 and 100-D-48:3/49:3 pipeline sites combined were disposed of at ERDF. Overall, approximately 107,266 metric tons (118,241 tons) from all D Area pipeline sites were disposed of at the ERDF through July 2000. Cleanup verification sampling began on June 7, 2000 (for the overburden piles), and was finished on October 4, 2000 (in the excavation). The excavation is being backfilled with appropriate materials to match the surrounding surface grade (average elevation of 143.7 meters [471 feet]).

The CVP demonstrates that the remedial action at the 100-D-48:3/49:3 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 100-D-48:3/49:3 Pipelines site and overburden have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:3/49:3 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the overburden and shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone

(i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:3/49:3 Pipelines site is verified to be remediated in accordance with the ROD.

The SubSite is Part Of:

Code: 100-D-48

Names: 100-D-48; 100-D Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-48:4

Classification: Accepted

Names: 100-D-48:4; Small Cooling Water Effluent Pipelines at 105-D Reactor

Reclassification: Interim Closed Out (4/23/2001)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite has been remediated and reclassified to interim closed out. It includes the many small drain pipelines that leave from the east and south sides of the 105-D Reactor Building and terminate at the 132-D-3 (1608-D) Building site. The pipelines that run from the 105-D Reactor and the 132-D-3 (1608-D) Building to either the 116-D-1A Trench and 116-D-1B Trench or connect to the main cooling water effluent pipelines are also part of this subsite.

Location: These pipelines are on the north, east, and south sides of the 105-D Reactor.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Closure Info: Remedial action at the 100-D-48:4 site began on October 28, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation reached the design limit at El. 136 meters (446 feet).

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 3,291 square meters (35,420 square feet) in area with a maximum depth of approximately 7 meters (23 feet). Approximately 27,738 metric tons (30,576 tons) of material from the site were disposed of at ERDF. Cleanup verification sampling began on September 11, 2000, and was completed on October 18, 2000. The excavation is to be backfilled with appropriate materials to the reference grade of El. 143 meters (469 feet).

The CVP demonstrates that remedial action at the 100-D-48:4 site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 100-D-48:4 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:4 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF, that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The SubSite is Part Of:

Code: 100-D-48
Names: 100-D-48; 100-D Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-49
Classification: Accepted
Names: 100-D-49; 100-DR Reactor Cooling Water Effluent Underground Pipelines
Reclassification: Interim Closed Out (1/15/2004)
Type: Radioactive Process Sewer
Start Date: 1/1/1950
Status: Inactive
End Date: 1/1/1967

Description: There are four subsites associated with this site. The entire site includes those underground pipelines that transported radioactive treated and untreated waste water from the 105-DR Reactor Building, and the 132-DR-1 (1608-DR) Building to the 116-DR-9 (107-DR) (107-DR) Retention Basin and both of the 116-D-5 and 116-DR-5 Outfalls. The included pipeline components are listed below. There are many small drain pipelines that originate on the east side of the 105-DR Reactor Building and terminate at the 132-DR-1 (1608-DR) Building site. The drain pipelines that run from the 132-DR-1 (1608-DR) to either the 116-DR-6 Trench or connect to the main cooling water effluent pipelines are part of this site. The main cooling water effluent pipelines are two large 1.5-meter (60-inch) diameter by 1.3-centimeter (0.5-inch) thick wall carbon steel pipelines. The east pipeline exits the 105-DR Reactor Building on the south side and runs due east to the corner of the building and then heads northeast to a point about 75 meters (210 feet) east of the existing exclusionary fence and then north to the 116-DR-9 (107-DR) Retention Basin. The west pipeline exits the 105-DR Reactor Building on the north side and heads northeast to a point 55 meters (154 feet) east of the existing exclusionary fence and then north to the 116-DR-9 (107-DR) Retention Basin. The pipelines run parallel to each other and are separated by about 25 meters (70 feet). This site also includes the discharge pipelines from the 116-DR-9 (107-DR) Retention Basin to the 116-DR-1 and 116-DR-2 Trench and both 116-D-5 and 116-DR-5 Outfalls. At the outlet of the 116-DR-9 (107-DR) Retention Basin, two 1.5-meter (60-inch) carbon steel pipelines are combined into a single 1.5-meter (60-inch) pipeline at a junction box. This pipeline then runs to the outfall structure. The outfall discharge pipeline is a 1.7-meter (66-inch) carbon steel pipeline that continues to the center of the Columbia River. Because of its length, this site has been broken into four subsites: 100-D-49:1, the pipelines from 116-DR-9 to the Outfalls; 100-D-49:2, the pipelines from D Avenue to 116-DR-9; 100-D-49:3, the pipelines from D Avenue to the 105-D Reactor; and 100-D-49:4 the effluent pipelines within 60 meters of the reactor. The facilities where these pipelines terminate are not included as part of this site. The following pipelines are not included as part of this site (included as part of 100-D-48): Opposite the 105-D Reactor Building, the west 105-DR Reactor effluent pipeline is cross-tied to the 105-D Reactor 1.5-meter (60-inch) effluent pipeline by a 1.5-meter (60-inch) diameter by 1.3-centimeter (0.5-inch) thick wall, carbon steel pipeline. The underground pipelines (100-D-50) that transported nonradioactive treated and untreated waste water from the 183-DR, 183-DR Clearwell area, and the 105-DR Reactor Buildings to the 100-D-8 (1907-DR) outfall are not included in this site.

Location: Generally, the pipelines run in a north-south direction east of the 100-D Reactors. Several expansion boxes are apparent at the ground surface along the length of the pipelines. Pipeline descriptions and associated structures are as follows. 105-DR Reactor: - a 20.32 centimeter (8 inch) effluent line exits the south side and runs to the east side of 1608-DR - a 45.72 centimeter (18 inch) effluent line exits the south side and also runs to the east side of 1608-DR - two 152.4 centimeter (60 inch) effluent pipe exit the northeast side and run to the 116-DR-9 Retention Basin 116-DR-9 Retention Basin: - two 152.4 centimeter (60 inch) lines exit the north end and flow, parallel, west to the 116-D-5 Outfall. - a 152.4 centimeter (60 inch) bypass line intersects the southern DR basin to the outfall effluent line, and flows north to the 116-DR-5 Outfall. - a 10.16 centimeter (4 inch) line exits the south end and flows into the 100-D-4 Trench. - two 30.48 centimeter (12 inch) lines flow east from the north end into the 116-DR-1&2 Trench.

Process The pipelines were used to dispose of radioactive cooling and waste water from the reactor

Process Description: facility. Two large main effluent pipelines drained cooling water from the 105-DR Reactor. The small effluent pipelines that drained process waste from the sides (east and south) of the 105-DR were joined into a single pipeline that ran to the 132-DR-1 [1608-DR Building] Waste Water Pumping Station or Process Lift Station). The 132-DR-1 (1608-DR) Building was a rectangular shaped, two-story, reinforced concrete structure that was half below grade elevation. The purpose of this facility was to pump process effluent to the main effluent pipeline.

Related Sites/ Structures: The associated structures are the 105-DR Building, the 132-DR-1 (1608-DR), the 116-DR-9 (107-DR) Retention Basin, the 116-D-5 Outfall and 116-DR-5 Outfall. Other related sites are the 116-DR-1 and 116-DR-2 Trench, and the 116-DR-6 Trench, 100-D-85 105D Reactor Effluent Pipelines.

Waste Type: Process Effluent

Waste Description: The waste is contaminated steel piping, concrete, and soil. Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, diatomaceous earth (a scouring agent), and sodium dichromate. Water pH was maintained at about 7.5, and free chlorine residual was about 0.2 milligrams per liter. Radionuclides discovered at the retention basin during sampling by Dorian and Richards (1978) for UNI-946, included: plutonium-238, cesium-134, plutonium 239/240, cesium-137, strontium-90, hydrogen-3, uranium, europium-152, europium-154, europium-155, nickel-63, cobalt-60, and carbon-14.

This Site has the Following SubSites:

Code: 100-D-49:1

Names: 100-D-49:1; North Pipelines from 116-DR-9 to the Outfalls

Code: 100-D-49:2

Names: 100-D-49:2; East Pipelines from D Avenue to 116-DR-9

Code: 100-D-49:3

Names: 100-D-49:3; Effluent Pipelines from D Avenue to About 60 Meters from the 105-DR Reactor

Code: 100-D-49:4

Names: 100-D-49:4; 100-DR Effluent Pipelines Within About 60 Meters of the Reactor

Code: 100-D-49:1

Classification: Accepted

Names: 100-D-49:1; North Pipelines from 116-DR-9 to the Outfalls

Reclassification: Interim Closed Out (3/26/2001)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-D-49:1 pipeline sections were located north of the 116-D-7 Retention Basin and went to the 116-D-5 (1904-D Outfall). Pipeline components consisted of a 1.5 meter (60 inch) steel pipeline, part of another 1.5 meter (60 inch) steel pipeline coming from the 116-DR-9 Retention Basin, up to its connection with the 1.5 meter (60 inch) steel pipeline associated with the 116-D-7 Retention Basin), and part of a 1.1 meter (42 inch) bypass pipeline (up to the northeast end of 116-D-7).

Location: These pipelines are north of the 107-D and 107-DR Retention Basins, extending to the 1904-D and 1904-DR Outfalls.

Process Description: These pipelines drained radioactive cooling water from the retention basins to the 1904-D and 1904-DR Outfalls structures.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Closure Info: 100-D-48:1, 100-D-49:1, 100-D-19 and UPR-100-D-4 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:1/49:1 Pipelines site began on December 28, 1998. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation reached the design limit.

Because remediation of the 100-D-48:1/49:1 Pipelines site required moving an active overhead power line, site remedial action and sampling were conducted in two phases. These separate phases are reflected by the long time period between the start and finish dates for excavation.

The excavation design depth generally corresponded with the invert elevation of the pipelines. At the completion of remedial action and removal of the engineered structure, the excavation was approximately 15,504 square meters (166,800 square feet) in area with a maximum depth of approximately 6.0 meters (20 feet) below ground surface. Approximately 107,266 metric tons (118,241 tons) of material from the D Area pipelines site have been disposed of at the ERDF through July 2000. Cleanup verification sampling began on April 3, 2000, and was finished on August 8, 2000. The ground surface in the vicinity of the site varies with an average elevation of approximately 134.4 meters (441 feet).

The CVP demonstrated that remedial action at the 100-D-48:1/49:1 Pipelines site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 100-D-48:1/49:1 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:1/49:1 Pipelines site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. Residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:1/49:1 Pipelines site (includes the 100-D-19 and UPR-100-D-4 sites) is verified to be remediated in accordance with the interim action ROD.

The SubSite is Part Of:

Code: 100-D-49

Names: 100-D-49; 100-DR Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-49:2

Classification: Accepted

Names: 100-D-49:2; East Pipelines from D Avenue to 116-DR-9

Reclassification: Interim Closed Out (9/26/2000)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This section of two parallel pipelines runs from D Avenue to 116-DR-9. The two pipelines were

constructed of 1.5 m (5 ft)-diameter by 1.3 cm (0.5 in.)-thick carbon steel with welded joints. The two parallel pipelines were about 25 m (66 ft) apart.

Location: This section of two parallel pipelines runs from D Avenue to the 116-DR-9 Retention Basin.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Closure Info: 100-D-48:2, 100-D-49:2, UPR-100-D-2 and UPR-100-D-3 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:2/49:2 Pipelines site began in July 1997. Excavation of the site involved removing the overburden materials, contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. In August 1999, the excavation reached the design limit. The excavation design depth generally corresponded with the invert elevation of the pipelines. The pipeline excavation profiles are in the sample design calculation briefs in Appendix D.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 20,475 square meters (220,280 square feet) in area with a maximum depth of approximately 6 meters (20 feet) below ground surface. During the time of excavation and waste disposal (December 1998 through September 1999) at the 100-D-48:2/49:2 Pipelines site, approximately 57,106 metric tons (62,960 tons) of material from 100-DR-1 Operable Unit pipelines were disposed of at the ERDF. Cleanup verification sampling began on August 23, 1999, and was finished on October 20, 1999. Because of the length of the pipeline site, the top-of-excavation elevation ranges from 138 meters (453 feet) near the retention basins to 143 meters (469 feet) near D Avenue.

The CVP demonstrated that remedial action at the 100-D-48:2/49:2 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). Materials from the 100-D-48:2/49:2 Pipelines site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils, including pipeline overburden stockpiles, have been sampled, analyzed, and modeled to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site and in overburden soils pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:2/49:2 Pipelines site is verified to be remediated in accordance with the ROD and may be backfilled. The pipeline overburden is verified as suitable for use as backfill in accordance with the ROD.

The SubSite is Part Of:

Code: 100-D-49

Names: 100-D-49; 100-DR Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-49:3

Classification: Accepted

Names: 100-D-49:3; Effluent Pipelines from D Avenue to About 60 Meters from the 105-DR Reactor

Reclassification: Interim Closed Out (4/23/2001)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive**End Date:**

Description: This subsite extends south from D Avenue to about 60 meters (200 feet) from the wall of the reactor foundation, longer for the east pipeline and shorter for the west pipeline. These two parallel pipelines were constructed of 1.5 m (5 ft) diameter carbon steel with welded joints. The Decontamination and Decommissioning project is responsible for the remaining pipelines as part of the foundation removal.

(Note: Figure 3 in the CVP is incorrect. It does not show the total length of the excavation at the south end. Refer to Attachment 3 of the CVP for a map of the entire excavation, including sampling locations.)

Location: These pipelines run from the 105-DR Reactor to D Avenue.

Waste Type: Not Specified

Waste Description: The waste was contaminated steel piping, concrete, and soil.

Closure Info: 100-D-48:3, 100-D-49:3, 100-D-5 and 100-D-6 were addressed as a group. The information below documents information for the group of sites.

The sites included in this remediation are 100-D-48:3, 100-D-49:3, 100-D-5, and 100-D-6. The entire remedial action for these sites is referred to as the 100-D-48:3/49:3 pipelines site. Remedial action at the 100-D-48:3/49:3 site began on October 28, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On July 24, 2000, the excavation was completed. The excavation design depth generally corresponded with the invert elevation of the pipelines.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 24,574 square meters (264,517 square feet) in area with a maximum depth of approximately 5.7 meters (18.7 feet). Approximately 55,561 metric tons (61,245 tons) of material from the 100-D-48:4 and 100-D-48:3/49:3 pipeline sites combined were disposed of at ERDF. Overall, approximately 107,266 metric tons (118,241 tons) from all D Area pipeline sites were disposed of at the ERDF through July 2000. Cleanup verification sampling began on June 7, 2000 (for the overburden piles), and was finished on October 4, 2000 (in the excavation). The excavation is being backfilled with appropriate materials to match the surrounding surface grade (average elevation of 143.7 meters [471 feet]).

The CVP demonstrates that the remedial action at the 100-D-48:3/49:3 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 100-D-48:3/49:3 Pipelines site and overburden have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-D-48:3/49:3 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the overburden and shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:3/49:3 Pipelines site is verified to be remediated in accordance with the ROD.

The SubSite is Part Of:

underwater collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. This zone was located entirely within the deep zone.

Zone 2 consisted of the valve pit that received wastewater from the reactor building. During the cleanup verification sampling, high levels of hexavalent chromium and polychlorinated biphenyls (PCBs) were discovered on the valve pit concrete floor. Therefore, the floor was removed and disposed of at the ERDF, then the valve pit walls and soil underneath the concrete floor were sampled and analyzed for hexavalent chromium and PCBs for verification purposes. Zone 2 was entirely within the deep zone.

Zone 3 consisted of the solids feed area, the north water tunnel, and the trench under the accumulator room. The below-grade rooms, tunnel, and trench have been wetted by isolated spills and standing rainwater that may have acted as a hydraulic driver for potential contamination. Only concrete floors were sampled and analyzed for these areas, as the walls are expected to contain little or no contamination. Ceilings were removed and disposed of at the ERDF. Zone 3 was within the shallow zone

Zone 4 consisted of the gas tunnel, exhaust plenum, gas recirculation tunnel, and the instrument room. Similar to Zone 3, these rooms and tunnels would have been wetted by isolated spills and standing rainwater, which may have acted as a hydraulic driver for potential contamination. Therefore, only the concrete floors were sampled and analyzed. Zone 4 was entirely within the deep zone.

Zone 5 consisted of the side slope soils around the FSB, the south effluent pipeline, and the soil under the slab. The soils adjacent to the 105-DR FSB were sampled to verify that shallow zone soil cleanup levels would be met if the walls of the FSB were removed. The soils beneath the slab were sampled for mercury because of the potential for mercury contamination from a floor drain in the slab.

Also included in Zone 5 was a section of 105-DR process effluent pipeline located adjacent to the south side of the FSB that was removed and the soil was sampled as part of the adjacent soils beneath the FSB. The concrete was removed from this location and the soil was sampled for verification purposes. This area was included in Zone 5 because of its proximity to the side slopes of the FSB. Zone 5 was within the shallow zone.

The three decon areas were located around the reactor for the purpose of equipment decontamination. The northwest decon area was approximately 8.0 meters by 8.8 meters (26 feet by 29 feet). The northeast decon area was approximately 12 meters by 9.8 meters (39 feet by 32 feet), and the south decon area was approximately 16 meters by 17 meters (52 feet by 56 feet).

An individual calculation of contaminated material removed for cleanup of the pipeline area was not provided in the CVP. A total of approximately 7,220 cubic meters (25,500 cubic feet) of contaminated materials were disposed at the ERDF. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at the ERDF.

These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The site is verified to be remediated in accordance with the Action Memorandum (EPA et al. 1998) and can be backfilled.

The SubSite is Part Of:

Code: 100-D-49
Names: 100-D-49; 100-DR Reactor Cooling Water Effluent Underground Pipelines

Code: 100-D-50
Classification: Accepted
Names: 100-D-50; 100-DR Water Treatment Facilities
Underground Pipelines
Reclassification: None
Type: Process Sewer
Start Date: 1/1/1950
Status: Inactive
End Date: 1/1/1965

Description: This site includes those underground pipelines that transported nonradioactive treated and untreated waste water from the 183-DR, 183-DR Clearwell area, and the 105-DR Reactor Buildings to the 100-D-8 (1907-DR) Outfall. It consists of 0.3-meter (12-inch) to 1.8-meter (72-inch) reinforced concrete piping located to the south of the facilities listed above.

Location: Generally, these pipelines run in an east-west direction with north-south lines connecting to the individual facilities. Several manhole access points are located along the length of the system. Pipeline descriptions and associated structures are as follows. 183-DR - three 30 centimeter (12 inch) process sewer lines exit from the south side and join the 183 centimeter (72 inch) reinforced concrete pipe at manhole MH T-3. The reinforced concrete pipe runs to the 100-D-8 outfall 183-DR Clearwells - 122 centimeter (48 inch) drain borders the south and southeast sides of the Clearwells - 91 centimeter (36 inch) drain borders the west side - 76 centimeter (30 inch) and 46 centimeter (18 inch) drains the north side of the Clearwells. - two pipelines, a 61 centimeter (24 inch) and a 46 centimeter (18 inch) pipe went between the Clearwells All of these lines are connected and flow south to the 183 centimeter (72 inch) line that flows west to 100-D-8 105-DR Reactor - a 107 centimeter (42 inch) line exits the west side, flows south of the 183-DR Clearwells in a 137 centimeter (54 inch) pipe, which then becomes the 183 centimeter (72 inch) pipe to the 100-D-8 outfall.

Process Description: This site was used to dispose of nonradioactive waste water from water treatment facilities associated with the 100-DR Reactor. These pipelines discharged to the 100-D-8 (1907-DR) Outfall just upstream of the 181-D Building. The 100-D-8 (1907-DR) Outfall and the facilities connected to this system are not addressed by this site, nor are the 100-D-56 sodium dichromate pipelines.

Related Sites/Structures: The site is associated with the 116-D-8 Cask Storage Pad, 183-DR, the 183-DR Clearwell Area, the 105-DR Reactor Buildings, and the 1907-DR Outfall (100-D-8).

Waste Type: Water

Waste Description: The waste is steel pipelines, concrete, and soil (if contaminants are present). Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, free chlorine residual was about 0.2 milligrams/liter, and sodium dichromate was added at a rate of about 2 milligrams per liter. Water and chemical storage tank overflows and other drains discharged to this disposal system. Drawings indicate that it also received storm drainage from the 183-DR Tank Clearwell Basin.

Sodium dichromate was used to treat reactor cooling water to assist in the control of process tube corrosion. Sodium dichromate storage tanks may have discharged to this system and potentially act as a source of elevated chromium found in the 100-D groundwater. However, unless there was a deliberate discharge of sodium dichromate to the system, only very dilute discharges would have occurred.

This Site has the Following SubSites:

Code: 100-D-50
Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:2
Classification: Accepted
Names: 100-D-50:2; Reactor Cooling Water Pipelines from 190-DR Pumphouse
Reclassification: None
Type: Process Sewer
Start Date:
Status: Inactive
End Date:

Description: The 100-D-50:2 subsite consists of the residual process cooling water supply lines between the 183-DR clearwells and the 105 DR Reactor Building.

The administrative boundaries for the 100-D-50:2 pipelines encompass those process supply lines from the points of discharge at the former 183-DR clearwells to the boundaries of demolition of the 190-DR Pumphouse and from the points of discharge from the 190-DR valve houses to the boundaries of interim safe storage activities at the 105-DR Reactor Building. The pipelines formerly connecting these two groups have been removed as part of decommissioning and demolition of the 190-DR facility. Residual supply piping within the boundaries of the interim safe storage project has been encased in concrete.

The process lines upstream of the former 190-DR Pumphouse consist of four 0.61-m (24-in.) subsurface steel pipelines. Downstream of the 190-DR facility, these pipelines are housed in two separate tunnels that converge upstream of the 105-DR Reactor Building. Several small diameter water lines are also located in the pipe tunnels, including raw water, filtered water, fire protection water, and potential dichromate-treated process water piping. Raw water, fire protection water piping, and filtered water piping are expected to be part of the 100-D/DR clean water/service water pipelines (100-D-63 waste site). This functional pipeline group has been rejected from consideration as a WIDS site based on process knowledge at other production reactor areas (100-B-7, 100-C-5, 100-H-35, and 100-K-59), but potential process water lines (i.e., the lines labeled "SOUTH RISER," "NORTH RISER," "SOUTH PROCESS WATER," and "NORTH PROCESS WATER") will be considered as part of the 100-D-50:2 subsite.

Location: The 100-D-50:2 pipelines are located between the former 183-DR Clearwells and 190-DR Pumphouse and the former 190-DR Pumphouse and 105-DR Reactor Building. The pipelines downstream of the former 190-DR facility are located within subsurface pipe tunnels.

Waste Type: Not Specified
Waste: The waste is any potentially contaminated pipelines
Description:

The SubSite is Part Of:

Code: 100-D-50
Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:3
Classification: Accepted
Names: 100-D-50:3; Reactor Cooling Water Pipelines from 190-D High Bay
Reclassification: None
Type: Process Sewer
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of steel piping designed to deliver treated cooling water from the 190-D High Bay to the 105-DR Reactor.

Location:

Waste Type: Not Specified

Waste The waste is any potentially contaminated pipelines

Description:

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:4

Classification: Accepted

Names: 100-D-50:4; Gas Recirculation Pipelines (Unused) **Reclassification:** None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of the steel piping in the subsurface tunnel between the former 115-D Gas Recirculation Facility and the 105-DR Reactor. The 100-D-50:4 subsite is composed of two 0.41 m (16- n.) steel pipelines with a combined length of approximately 270 m (900 ft). These pipelines presently exist within the collapsed subsurface tunnel between the former 115-D/DR Gas Recirculation Facility and the 105-DR Reactor. Characterization of analogous pipelines in the gas recirculation wing of the 105-H Reactor revealed the accumulation of oil sludge containing multiple radionuclides at levels above remedial action goals (RAGS). These pipelines may never have been used.

In a 4/19/2005 Remove, Treat, and Dispose Report based on a review of historical site information and analogous analytical data, it was cited that this subsite contains hazardous constituents at levels in accordance of RAGs. Remedial action was recommended for this site in accordance with the ROD (EPA, 1999).

Location: The surface area of the 100-D-50:4 subsite is currently within the southern portion of the decommissioning equipment laydown yard between the 105-D and 105-DR Reactors, but no surface expressions of the site are present. Design drawings with as-built verification show the pipelines stacked vertically along the eastern wall of the tunnel (H-1-853ODR 1948). The exact present depth of the pipelines is unknown, but the invert elevation of the tunnel was up to 3 m (10 ft) below presently existing grade. The tunnel was a 1.5 m (5 ft) wide by 2.0 m (6.5 ft) deep structure, narrowing to 1.2 m (4 ft) wide approximately 9.1 m (30 ft) before entering the 115-D/DR facility.

Waste Type: Not Specified

Waste The waste is the pipelines and any contaminated soil associated with this site.

Description:

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:5

Classification: Accepted

Names: 100-D-50:5; 183-DR Sedimentation Basin Drain Pipelines **Reclassification:** No Action (11/6/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite encompassed the southern process sewers for the 183-DR coagulation and

sedimentation basins, The subsite consisted of approximately 200 meters (650 feet) of pipeline: three 0.15-meters (6-inches) drain lines immediately south of the former 183-DR coagulation and sedimentation basins, which discharged to a 0.30-meter (12-inch) reinforced concrete collection line, trending generally north-south. A 0.30-meter (12-inch) feeder line also connected a runoff collection drain (catch basin U) to the collection line.

As part of the coolant water treatment facilities for the 105-DR Reactor, the 183-DR coagulation and sedimentation basins used physical and chemical treatment to condition raw river water for reactor use. The chemicals added at the 183-DR coagulation basins or at the upstream 183-DR Headhouse included: sulfuric acid, lime chlorine, and commercial coagulants containing primarily ferrous sulfate or alum. Sodium dichromate was also added to cooling water as a corrosion inhibitor, but was injected downstream of the sedimentation basins.

Located on the southern side of the 183-DR facility, these sewers were designed to provide underflow drainage for the 183-DR coagulation and sedimentation basins and possibly overflow drainage as well. Several surface runoff collection drains for the area south of the 183-DR facility also discharged to this sewer. The subsite process sewers discharged to the 100-D-50:1 process sewer collection line, which ultimately discharged to the Columbia River at the 100-D-8 outfall. Additional drainage for the 183-DR basins was also provided by higher capacity process sewers on the northern side of the 183-DR facility (100-D-50:7 subsite).

- Location:** The 100-D-50:5 process sewers are on the south side of the 183-DR facility.
- Waste Type:** Not Specified
- Waste Description:** The waste is the pipelines, pipeline sediments, and any contaminated soil associated with this site.
- Closure Info:** Results of the confirmatory sampling event conducted on November 7 and December 28, 2005 were used to make decisions for reclassification of the site. Evaluation of the confirmatory results has been documented in the Remaining Sites Verification Package (RSVP) 2006-025. The report indicated that the 100-D-50:5 subsite has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) for No Action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) for subsite included cobalt-60, cesium-137, europium-152, europium-154, strontium-90, lead, hexavalent chromium, and metals. While process knowledge of the subsite does not suggest historic discharge of radionuclides, cobalt-60, cesium-137, europium-152, europium-154, and strontium-90 were identified as COPCs for the 100-D-50 site in its entirety and retained for the 100-D-50:5 subsite. Polychlorinated biphenyls (PCBs) were also identified as COPCs for the process sewers based on the potential presence of rubber gaskets and other PCB-containing materials in the water treatment facilities serviced by the pipelines. At the request of the Washington Department of Ecology, total uranium evaluation by kinetic phosphorescence analysis (KPA) was also included in confirmatory analysis.

The laboratory-reported results for all constituents have been stored in the Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS) and were included in Appendix A of the RSVP. The results of confirmatory sampling confirmed that residual contaminant concentrations did not preclude any future uses (as bounded by the rural-residential scenario) and allowed for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River.

The subsite has been evaluated in accordance with the Remaining Sites ROD, and a no action decision is supported based on the confirmatory investigation and sampling results. The analytical results from the subsite pipe sediment and underlying soil samples were shown to meet the remedial action objectives for direct exposure, groundwater protection, and river protection. The subsite has no deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:6

Classification: Accepted

Names: 100-D-50:6; 183-DR Clearwell Drain Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite includes three functional groups of piping at the 183-DR Clearwells: 1) process piping used to deliver water from the filter building to the clearwells, 2) process piping used to deliver water from the clearwells to 190-DR Pumphouse, and 3) drain piping servicing the clearwells and pumphouse floor drains and discharging to the 100-D-50:1 Emergency Discharge Pipeline. The subsite also includes the four concrete pads remaining from the 190-DR Clearwells, and surrounding soil.

Location: 1) piping running from filter building to the clearwells, 2) piping running from the clearwells to the 190-DR Pumphouse. 3) piping running from the clearwells and pumphouse to the Emergency Discharge Pipeline. This site is directly east of the 183-DR Water Treatment Facility (demolished) and west of 190-DR. It is southwest of the 105-DR Reactor Building.

Waste Type: Not Specified

Waste The waste includes piping, concrete pads and surrounding contaminated soils.

Description:

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:7

Classification: Accepted

Names: 100-D-50:7; 183-DR Head House Floor Drain and Catch Basins Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite includes the pipelines that provided drainage for the 183-DR Coagulation Basins, floor drains and catch basins at the 183-DR Head House, and mixing tanks in the vicinity of the 186-D Waste Acid Reservoir. These pipelines ultimately discharged to the 100-D Area process sewer systems.

Process sewers for the 183-DR Head House floor drains, 183-DR Coagulation and Sedimentation Basins, and nearby catch basins are:

- 82 m (269 ft) of 0.20-m (8-in.) vitrified clay pipe (VCP)
- 40 m (131 ft) of 0.25-m (10-in.) VCP

- 36 m (118 ft) of 0.51-m (20-in.) cast iron pipe
- 158 m (518 ft) of 0.69-m (27-in.) reinforced concrete pipe (RCP)
- 332 m (1,089 ft) of 1.37-m (54-in.) RCP

The pipe for the 186-D Mixing Tank process sewer is:
- 90 m (295 ft) of 0.61-m (24-in.) VCP.

Location: These pipelines extend from the 183-DR Head House north to the 186-D Building..

Waste Type: Not Specified

Waste The waste is any potentially contaminated pipelines

Description:

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:8 **Classification:** Accepted

Names: 100-D-50:8; 117-DR Condensate Drain Pipelines **Reclassification:** None

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The 100-D-50:8 subsite is a 10 cm (4 in) diameter nonfriable asbestos cement distribution pipe that connected the 117-DR Filter Building to the 116-DR-8 Seal Pit Crib. The distribution pipe had a total length of 83 m (272 ft) and operated independently from all other pipelines. The distribution pipe received radioactive process effluent from the 117-DR HEPA Filter Building.

Location: The 117-DR Filter Building was located south of the 105-DR Reactor Building. The pipeline and crib are located south of 117-DR Filter Building.

Waste Type: Not Specified

Waste The waste is potentially contaminated piping and soil.

Description:

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:9 **Classification:** Accepted

Names: 100-D-50:9; 1607-DR3 Sanitary Sewer Pipelines **Reclassification:** None

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The 100-D-50:9 site encompasses two functional pipeline groups: (1) the overflow drain line and (2) the residual sanitary sewer lines. The overflow drain line begins north of the 105-DR Reactor Building, travels south along the western side of the building, and then turns west to join the sanitary sewage system. The sanitary sewer cuts across the southeast corner of the 116-D-8 cask storage pad and was accessible through a manhole set in the concrete pad.

The Hanford Site Waste Management Units Report (DOE/RL-88-30) stated the pad was designed with a drain to facilitate pad decontamination and rain runoff, and the drain discharged into the 105-DR sewer (100-D-50:9). The residual sanitary sewer lines are located south and southeast of the 105-DR Reactor Building. Both pipeline functional groups discharged into the

100-D-13 septic tank. Although sections of the former sewer system have been removed under past Group 3 remedial efforts for coexistent sites (the 116-DR-6 Liquid Disposal Trench and the 100-D-48 Reactor Cooling Water Effluent Underground Pipelines), excavations for confirmatory sampling established that portions of the 100-D-50:9 pipelines still remain.

During remediation of 118-D-5 Burial Ground (CVP-2009-00008) a concrete junction vault located in the southern portion of the burial ground was opened prior to the start of the burial ground excavation and found to contain a breached 15-cm (6-in.) vitrified clay pipe. The pipeline was part of the 100-D-50:9, 1607-DR-3 Sanitary Sewer. The concrete junction vault and pipe located within the excavation were removed for disposal to ERDF.

Location: The overflow drain line (1) begins north of the 105-DR Reactor Building, travels south along the western side of the building, and then turns west to join the sanitary sewage system. The residual sanitary sewer lines (2) are located south and southeast of the 105-DR Reactor Building.

Waste Type: Not Specified

Waste Description: The waste is the pipelines, pipeline sediments, and any contaminated soil associated with this site.

The SubSite is Part Of:

Code: 100-D-50

Names: 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines

Code: 100-D-50:10

Classification: Accepted

Names: 100-D-50:10; Construction Camp Potable Water Supply Pipelines

Reclassification: No Action (6/29/2005)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of the residual cast iron pipelines used to supply potable water to the temporary construction camp southeast of the 105-DR Reactor. The exact operational period of the subsite is uncertain, but is believed to be limited to 1947 to 1949 when the construction camp was in use. The system was supplied with water via the fire protection loop piping, which in turn was supplied by the 100-D Area water treatment train at a point prior to any chemical treatment. The subsite is composed of approximately 680 m (2,220 ft) of 0.15-m (6-in.) cast iron pipe around the northern, eastern, and southeastern sides of the 105-DR Reactor. Portions of the former supply system were removed under past Group 3 remedial efforts for coexistent sites (the 116-DR-6 Liquid Disposal Trench and the 100-D-48 Reactor Cooling Water Effluent Underground Pipelines). No evidence has been located to suggest that operation of these sites impacted the 100-D-50:10 pipelines beyond the boundaries of previous remedial efforts.

Location: These pipelines are on the north, east, and south sides of the 105-DR Reactor.

Closure Info: The 100 Area Remedial Action Sampling and Analysis Plan identifies contaminants of potential concern (COCs) for the 100-D-50 pipelines, but they were not applicable to this subsite given process knowledge of the operational history of the pipelines. Further, the same process knowledge provides no basis for the introduction of any hazardous or dangerous wastes to these pipelines. Therefore, no further evaluation or confirmatory sampling is necessary for this subsite.

The Remaining Sites Verification Package (RSVP) report demonstrates that the subsite meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County,

Washington. The evaluation shows that there is no hazardous/dangerous materials present at the subsite and, accordingly, no residual contamination in the soil. Therefore, the current status of the subsite is protective of human health, groundwater, and the Columbia River, and no institutional controls are required.

The SubSite is Part Of:**Code:** 100-D-50**Names:** 100-D-50; 100-DR Water Treatment Facilities Underground Pipelines**Code:** 100-D-52**Classification:** Accepted**Names:** 100-D-52; 105-D Downcomer Insulation Space Dry Well**Reclassification:** Interim Closed Out (11/8/2000)**Type:** French Drain**Start Date:** 1/1/1955**Status:** Inactive**End Date:**

Description: This site has been remediated and interim closed out. The site consisted of a french drain (dry well). The 1-meter (3-foot) diameter dry well was filled with 2.2 meters (5 feet) of 2.5 to 5-centimeter (1 to 2-inch) gravel from the bottom at 6.9 meters (22 feet) below grade to the top at 5.2 meters (17 feet) below grade. The dry well was fed by a 10.2-centimeter (4-inch) steel drain pipe from Room 38A that entered the dry well at 5.8 meters (19 feet) below grade. The drain line discharged into the annulus between a vertical 25.4-centimeter (10-inch) diameter distributor pipe and vertical 10.2-centimeter (4-inch) diameter radiation monitor housing pipe in the center of the dry well. The monitor was used to ensure detection of radiation in the water (condensate or cooling water leakage) from Room 38A. (Room 38A of the 105-D Building is the concrete enclosure for the 105-D Downcomer.) The concentric distributor pipe and radiation monitoring housing pipe ended 30 centimeters (1 foot) above the bottom of the dry well. The radiation monitor pipe extended about 0.6 meters (2 feet) above grade with a valve on the upper end.

Location: The site was located next to the 105-D Reactor Building at Washington Coordinate System (WCS83S) Easting 573797.076, Northing 151625.344.

Process Description: This drywell was installed in 1955 to drain noncontaminated condensate water and contaminated cooling water from the space between the D Reactor process effluent downcomer and the reactor wall. The contaminated cooling water resulted from potential leakage from the downcomer (a metal baffled structure through which collected reactor cooling water cascaded prior to entry into the effluent discharge line). This site also contained a pipe providing access for radiation monitoring that extended from the bottom of the drywell to just above grade.

Related Sites/ Structures: The site was related to 105-D Reactor Building Room 38A.

Waste Type: Water

Waste Description: No record could be found that indicated any radiological or chemical contamination data.

Description: Based on available information it was assumed that contamination would be limited to those radionuclides found in reactor effluent water that potentially leaked from the metal downcomer and collected nonradioactive condensate water. The COPCs for the remedial action were developed in the Sampling and Analysis Plan.

Closure Info: The cleanup verification package (CVP-2000-00018) has documented that the 100-D-52 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP). The COPCs that were detected during field sampling (i.e., during remediation) were reclassified as COCs and are addressed in the CVP. These COCs are cesium-137, europium-152, uranium-233/234, uranium-238, total chromium, and lead.

Hexavalent chromium is not a COC or COPC at the 100-D-52 Downcomer Insulation Space Drain Dry Well because this was a small site that was known not to have received process effluent and was not associated with disposal of liquids containing hexavalent chromium.

Remedial action began on January 4, 2000, the excavation involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Contaminated materials were disposed at ERDF. On February 25, 2000, the excavation reached the design limit at elevation 134.9 meters (443 feet).

At the completion of remedial action the excavation was approximately 415 square meters (4,467 square feet) in area with a maximum depth of approximately 7.6 meters (25 feet). Approximately 199 metric tons (219 tons) of material from the site were disposed at ERDF. Cleanup verification sampling began on March 21, 2000, and was finished on the same day. The excavation will be backfilled with appropriate materials to the reference grade of elevation 142.5 meters (468 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-D-56	Classification:	Accepted
Names:	100-D-56; 100-D Area Sodium Dichromate Underground Supply Lines	Reclassification:	None
Type:	Product Piping	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consists of two abandoned 7.6-centimeter (3-inch) underground sodium dichromate supply lines that transported concentrated liquid sodium dichromate between the 108-D, 185-D, 189-D, 190-D, 183-DR, and the 100-D Sodium Dichromate Transfer Station.		
Location:	The underground lines run between the former 108-D, 185-D, 189-D, 190-D, 183-DR Buildings, and the 100-D Sodium Dichromate Transfer Station. The north pipeline exited the north side the 190-D Pump Room and flowed to the west side of 108-D. 183-D Filter Plant - 7.62centimeter (3inch) line exits west side and flows south to near the 100-D-12 pump station 183-DR - Two 7.62centimeter (3inch) lines exit the west side of 183-DR Head House and flow east to 185-D		
Process Description:	Sodium dichromate was used to treat reactor cooling water to assist in the control of process tube corrosion. Sodium dichromate was received in solid and liquid form. The solid form was dissolved in the 189-D Building.		
Related Sites/ Structures:	Co-located with the lines is 100-D-92 the encasement for the lines.		

Waste Type: Equipment
Waste Description: The waste is abandoned 7.6-centimeter (3-inch) pipe contaminated with sodium dichromate.

This Site has the Following SubSites:

Code: 100-D-56:1
Names: 100-D-56:1; Pipeline Exiting North Side of 185-D
Code: 100-D-56:2
Names: 100-D-56:2; Pipelines Exiting South Side of 185-D

Code: 100-D-56:1 **Classification:** Accepted
Names: 100-D-56:1; Pipeline Exiting North Side of 185-D **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**

Description: The 100-D-56 site consists of two abandoned 7.6 cm (3 in) underground pipelines that transported sodium silicate and sodium dichromate liquids between the 108-D, 190-D, 185-D, and 189-D facilities; the 100-D-12 Sodium Dichromate Pumping Station; and the 183-DR Building. Pipeline descriptions and associated structures are as follows:

183-DR - Two 7.62 cm (3 in) lines (one sodium dichromate and one sodium silicate) exit the west side of 183-DR Head House and flow east to 190-D.

190-D Pump Room - Two 7.62 cm (3 in) (one sodium dichromate and one sodium silicate) pipelines exit the north side and flow to the west side of 108-D. 100-D-56:1 site addresses the northern portion of the pipeline. The pipelines exiting the north side of the 185-D Building were used during the initial dry material handling operations. The pipeline ran from 190-D to 108-D. The total length was approximately 272 meters (892 feet).

Location: The northern portion of the 100-D-56 pipeline ran from the 108-D Building to the 185-D Building. The 108-D Building was located north of the 105-D Reactor and east of the 1709-D Building. The 185-D Building was located west of the 105-D Reactor.

Waste Type: Not Specified
Waste Description: The waste is potentially contaminated equipment (pipelines) and any contaminated soil associated with the pipeline.

The SubSite is Part Of:

Code: 100-D-56
Names: 100-D-56; 100-D Area Sodium Dichromate Underground Supply Lines

Code: 100-D-56:2 **Classification:** Accepted
Names: 100-D-56:2; Pipelines Exiting South Side of 185-D **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**

Description: The 100-D-56 site consists of two abandoned 7.6 cm (3 in) underground pipelines that transported sodium silicate and sodium dichromate liquids between the 108-D, 190-D, 185-D, and 189-D facilities; the 100-D-12 Sodium Dichromate Pumping Station; and the 183-DR Building. 100-D-56:2 subsite addresses the southern portion of the pipeline. The pipelines

exited the south side of the 185-D Building to 100-D-12 and continued to the 183-DR building. This pipeline continued to be used after the transition to concentrated liquid sodium dichromate. The pipeline measured a total of 788 meters (2,585 feet).

Location: The southern portion of the 100-D-56 pipeline ran from the 185-D Building to the 183-DR Head House. The 185-D Building was located west of the 105-D Reactor. The 183-DR Head House is located west of the 190-DR Building.

Waste Type: Not Specified

Waste: The waste is abandoned 7.6 cm (3 in) pipe contaminated with sodium dichromate.

Description:

The SubSite is Part Of:

Code: 100-D-56

Names: 100-D-56; 100-D Area Sodium Dichromate Underground Supply Lines

Code: 100-D-60

Classification: Accepted

Names: 100-D-60; 100D River Lines; 100D/DR River Effluent Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This site includes the river effluent pipelines (river lines) that extend from the two outfalls in the 100D/DR area into the main channel of the Columbia River.

Location: The river effluent pipelines extend from the discharge (river side) face of their respective outfall structure. The river lines are located in the Columbia River, adjacent to the 100-D/DR area. The lines extend northwest from two outfall structures located near the river shore, through D Island, into the main channel of the river.

Process Description: Reactor cooling water and process sewer wastes were collected and temporarily stored in the 107-D and 107-DR Retention Basins before being pumped to the river via the 116-D-5 and 116-DR-5 outfall structures and associated river effluent pipelines. The river pipeline extends from the 116-D-5 (1904-D Outfall) via two buried 107-centimeter (42-inch) diameter reinforced concrete/steel pipes. The steel pipes have a 1.3-centimeter (1/2-inch) thick wall. The pipe extends approximately 400 meters (1300 feet) into the river, passing through D Island. The pipelines are buried along their entire run to a depth of 0.6 meters (2 feet) to 2.1 meters (7 feet). The outlets are not exposed on the river bed. The riverpipe line extends from the 116-DR-5 (1904-DR Outfall) via a buried 168-centimeter (66-inch) diameter carbon steel pipe with a 1.3-centimeter (1/2-inch) thick wall pipe. The line also extends approximately 400 meters (1300 feet) into the river, passing through D Island (100-D-67, D Island Contamination). The pipeline is buried along its entire run to a depth of 0.6 meters (2 feet) to 1.8 meters (6 feet). The DR outlet is exposed on the river bed.

Related Sites/Structures: The site is associated with the 116-D-5 (1904-D outfall), 100-D-65 Spillway, the 116-DR-5 (1904-DR outfall), 100-D-66 Spillway, 100-D-48 (the 100D process effluent lines), 100-D-49 (the 100DR process sewer lines), and the 100-D-31 (100D water treatment facilities underground pipelines).

Waste Type: Equipment

Waste: The waste includes the pipelines and the contaminated scale contained within them.

Description:

The contaminants of potential concern are based on those for the outfalls themselves. The contaminants of concern for all D/DR river effluent pipelines include C-14, Cs-137, Sr-90, U-

235, -238, and Pu-239/240.

Code: 100-D-61 **Classification:** Accepted
Names: 100-D-61; Utility Pole and Fixture Debris Piles **Reclassification:** Interim Closed Out (10/22/2009)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site consisted of debris piles containing utility poles, lead-tipped bolts, railroad ties, light fixtures, scrap wire and cable, scrap construction wood, and other miscellaneous debris from tearing down electrical utility poles. The exact history of the site was unknown.

Location: The site was located northwest of the 105-D Reactor on the northern side of Palouse Street, occupying a surface area of approximately 500 m² (5,400 ft²). The coordinates as reported by Ron Del Mar are N152838, E573481, northeast of the 183-D Filter Plant.

Related Sites/ Structures: Underlying the debris pile was a segment of 100-D-31:6 pipeline.

Waste Type: Misc. Trash and Debris

Waste Description: The waste includes creosote-treated wood poles and cross beams, wood pallets, metal debris, lead-tipped bolts and other debris.

Closure Info: The Remaining Sites Verification Package for the 100-D-61, RSVP-2008-047, has documented that site verification sampling results support a reclassification to Interim Closed Out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 1004U-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Initial remediation of the waste site was performed from November 12, 2007, through January 24, 2008. Approximately 270 metric tons (300 U.S. tons) of surface debris and soil was removed including utility poles, railroad ties, light fixtures, scrap wire and cable, scrap construction wood, and other miscellaneous debris. The soil within the waste site footprint was excavated to a depth of 0.3 m (1 ft) below ground surface (bgs); the resulting 100 bank cubic meters (BCM) (130 bank cubic yards [BCY]) of soil was disposed at the Environmental Restoration Disposal Facility (ERDF).

A global positioning survey was used to delineate the boundaries of the excavation footprint for the purpose of the verification sampling design. The site footprint was located above a section of vitrified clay sewer pipeline associated with the 100-D-31:6 waste site. Subsequent to the initial 100-D-61 excavation, the 100-D-31:6 pipeline was removed. The area associated with the 100-D-31:6 remediation trench was excavated to 1.5 m (5 ft) below grade.

Verification sampling at the site was conducted on June 18, 2008. A statistical sample design was selected for verification sampling because the distribution of potential residual soil contamination was uncertain. The contaminants of potential concern (COPCs) were identified based on types of material (e.g., railroad ties, light fixtures) located at the site and included: lead, barium, cadmium, chromium (total), mercury, selenium, silver, hexavalent chromium, creosote, arsenic, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), pesticides, and polycyclic aromatic hydrocarbons (PAHs).

The analytical results indicated residual contamination exceeding cleanup criteria in the

southern portion of the waste site. Further (Phase II) remediation was conducted at the location on October 13, 2008. The soil within the Phase II waste site footprint was excavated to a depth of 1 m (3 ft) bgs. The resulting 50 BCM (65 BCY) of soil was disposed at ERDF. A global positioning survey was used to delineate the boundaries of the Phase II excavation footprint for the purpose of the verification sampling design. A Phase II sample design was developed with regulator concurrence and included a statistical sample design with 10 samples to be analyzed for the COPCs that previously exceeded cleanup criteria. These COPCs included ICP metals, hexavalent chromium, and PAHs.

Phase II verification sampling at the site was conducted on January 21, 2009. The analytical results indicated that the residual concentrations of COPCs at the site have met the remedial action objectives for direct exposure, groundwater protection, and river protection.

All verification samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The complete laboratory results were stored in the WCH Environmental Restoration project-specific database prior to being submitted to the Hanford Environmental Information System for archiving, and were provided in Appendix C of the RSVP.

In accordance with the RSVP evaluation, the verification sampling results support an Interim Closed Out reclassification for the site. These results show that residual soil concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination was limited to the shallow zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	100-D-63	Classification:	Accepted
Names:	100-D-63; 100-D/DR Clean Water Pipelines; 100-D/DR Service Water Pipelines	Reclassification:	None
Type:	Product Piping	Start Date:	
Status:	Active	End Date:	
Description:	The waste site is comprised of the 183-D acid addition facility. It includes a concrete trench that protected the service piping (air, steam, filtered water, lime slurry, sulfuric acid) and drained acid waste to the neutralization pit. The underground piping contained in the trench are part of the site with the exception of the filtered water line which is assigned to 100-D-63. The site also includes a dry well, two sumps (exterior to the trench), two storm drains, a storm sewer and an acid/silica supply line.		
Location:	These pipelines were located in the 100-D Area within 100-DR-1 and 100-DR-2 Operable Units.		
Process Description:	The pipelines were designed to supply raw river water from the 181-D River Pump House, treated and filtered at the 183-D Filter Plant to 100-D Area facilities, including the 184-D Boiler House, 182-D Pump House, 190-D and 190-D Annex Pump Houses, 190-DR and 190-DR Annex Pump Houses, 105-D and 105-DR Reactor Buildings, and the 187-D and 187-DR elevated water tanks adjacent to the 105-D and 105-DR Reactor Buildings. The 183-D and DR Filter Plants were used to remove suspended fine solids from river water using chemical flocculation and pH additives, sedimentation basins, and sand/coal bed filters for the physical and chemical treatment of river water to provide solids-free water suitable for reactor cooling, producing steam, and to supply the ancillary water uses within the 100-D and 100-DR Areas, e.g. water makeup, fire water, emergency cooling water (high towers), etc. Prior to 1956 - 1957, the 182-D reservoir was used as the principal water supply source for the 183-D filter		

plants. Following implementation of Project CG-558, the purpose of the reservoir was to provide reserve (emergency) water for reactor cooling, condenser water for the steam condensers, and raw water (export water) to the 200 Areas. The 182-D Reservoir consists of a rectangular, sloped, reinforced concrete basin. The reservoir was divided into two sections by a 25.4 centimeters (10 inches) reinforced concrete wall running parallel to the short dimension of the structure. The inlet section of the reservoir, known as the reserve section, held 56.8 million liters (15 million gallons) of water, while the other, or working section, holds 37.9 million liters (10 million gallons). The Columbia River water was filtered and chemically treated to prevent filming in the reactor process tubes. Alum, sulfuric acid and chlorine were proportioned in the 183-D Head House (component of the 183-D Filter Plant). Raw bauxite was stored in bunkers in the 183-D Filter Building Head House and flowed to a proportional dry chemical feeder which supplied bauxite at the required rate. From the conveyor belt of the proportional feeders, the bauxite fell into a lead-lined mixing chamber together with sulfuric acid and water. The sulfuric acid was used to control the pH of the water. The reaction of the bauxite and diluted sulfuric acid formed a solution of alum and excess diluted sulfuric acid. Chlorine was added at this point for algae control in the settling basins. There were two flocculators in series for each settling basin in the 183-D Filter Plant. The purpose of the settling basins was to allow heavier particulate matter to settle out of the water before entering the filters. The filter media consisted of 0.31 meters (12 inches) of graded gravel, 0.15 meters (6 inches) of sand, and 0.61 meters (24 inches) of crushed and graded anthracite coal. Water entered the gullet from the influent flume through an influent valve and flowed to both halves of the filter through port openings. An organic polyelectrolyte filter aid to improve filter efficiency was added to the water in the gullet to improve water quality. The filtered water collected in the false bottom below the filter and flowed through effluent piping to the effluent flumes. Valves controlled the amount of water passing through the effluent flumes and into the 183-D Clearwells (still within the 183-D Filter Building). The 183-D pump room was the primary supply point for filtered water for the entire production reactor plant. The eastern most clearwell provided the filtered water for power house water, fire and sanitary water (chlorinated before delivery), and for emergency filtered water. Separate pumps and clearwells provided water for the primary reactor cooling water. Filter backwashing was supplied from the clearwells by backwash pumps located in the 183-D Filter Building Pump Room. Backwash water entered the filter collection area, flowed upward through the filter media into the gullet and through a waste valve into a sewer. The backwash water for the 183-DR filters was supplied from the 183-D Pump Room via a 0.76 meters (30 inches) cross-tie pipeline to the 183-DR Pipe Gallery. There was no equivalent to the 183-D Filter Plant Clearwells at 183-DR Filter Plant. This same pipeline was also used to supplement the 183-DR water requirements. The 183-D and 183-DR Filter Plant Pump Rooms were the primary supply points for filtered water for each reactor area and the associated limited area (outside the reactor exclusion area). For the primary reactor cooling system, pumps were provided to transfer water to the 190-D and 190-DR Storage Tanks via 0.91 meter (36 inch) and 0.41 meter (16 inch) pipelines, backwash water for the filters and filtered water for the emergency high tanks. The pumps that supplied the four 1,135,624 Liter (300,000 gallon) high tanks (two at 105-D and two at 105-DR) also provided filtered water for cooling the primary coolant pumps and motors, filter controls and service, reactor thermal loop and control rod cooling. Pumps at 183-D Filter Plant were provided to supply the power house water, fire and sanitary water and for additional emergency filtered water. Four pumps at the 183-D Filter Plant were connected to the combined sanitary and fire protection system. For the 184-D Power House, boiler feed water was provided from four sources of supply, the first three from the 183-D Filter Plant Pump Room and a last ditch source of raw water from the 182-D Reservoir. At the 184-D Power House, three Zeolite water softeners were used to soften the filtered water. In the 184-D, boiler water treatment chemicals, sodium sulfite and tri-sodium phosphate, were used to reduce scale. In the event of total failure of the electric power to the Hanford Site, a secondary power source was available. It was independent of the electrical or primary source, and was capable of providing adequate cooling water to the reactor until the primary system could be re-established.

Related Sites/ Structures: The structures related to this site were the 184-D Boiler House, 182-D Pump House, 190-D and 190-D Annex Pump Houses, 190-DR and 190-DR Annex Pump Houses, 105-D and 105-DR Reactor Buildings, and the 187-D and 187-DR elevated water tanks adjacent to the Reactor Buildings. Related WIDS sites include: 100-D-63, 100-D/DR Service Water Pipelines, 100-D/DR Clean Water Pipelines, 100-D-31, 100-D Water Treatment Facilities Underground Pipelines (See Subsites), 100-D-77, DR Reactor Water Treatment Facility, Acid Facility, 183-DR Head House, 183-DR Filter Building, Sodium Dichromate Systems, 183-DR Flocculation Basins, 183-DR Sedimentation Basins.

Waste Type: Water

Waste Description: The pipelines were the waste, they were associated with the raw water, filtered water, sanitary water, and fire water systems in the 100-D Area. Chemical treatment included pH adjustment (with sulfuric acid or lime), chlorination for algae control, the addition of flocculants, (primarily alum prepared at the 183-D Filter Plant (Head House component) with bauxite and sulfuric acid), and a commercial organic polymer flocculation/filtration aid. This site also includes the potable and fire water that was delivered to the 1700 (site service buildings) series buildings.

Contaminants of potential concern include radiological contaminants.

Code: 100-D-65	Classification: Accepted
Names: 100-D-65; 116-D-5 Outfall Spillway; 1904D Spillway; 100-D-60:1 Flume	Reclassification: None
Type: Outfall	Start Date:
Status: Inactive	End Date:
Description: The site consists of a concrete spillway (a.k.a. flume) that served as an alternate discharge point for the 1904-D Outfall Structure.	
Location: The site is located northwest of 116-D-7 (the 107-D Retention Basin) and upstream of 116-DR-5 (the 1904 DR Outfall Structure). There is an engineered erosion barrier of heavy riprap beginning at the discharge end and extending for an additional 6 meters (20 feet).	
Process Description: The spillway was an alternate discharge point for the 1904-D Outfall Structure. It was planned to be used only if the 100-D-60 river effluent pipelines were blocked, damaged, or undergoing maintenance. There is no corroborated physical or historical evidence that the spillway was ever used.	

Related Sites/ Structures: The site is associated with 100-D-60 (the 100-D River Effluent Pipelines) and 116-D-5 (the 1904-D Outfall Structure).

Waste Type: Construction Debris

Waste Description: No evidence has been found that the spillway was ever put into service, the COPCs for the 100-D-65 spillway would be the same as those for the 116-D-5 outfall structure. The contaminants of concern include carbon-14, cesium-137, strontium-90, uranium-235/238, and plutonium-239/240.

Code: 100-D-66	Classification: Accepted
Names: 100-D-66; 116-DR-5 Outfall; 1904-DR Spillway; 100-D-60:1 Flume	Reclassification: None
Type: Outfall	Start Date:
Status: Inactive	End Date:
Description: The site consisted of a concrete spillway (also referred to as a flume).	

Location: The site is located northwest of 116-D-7 (the 107-D Retention Basin) and downstream of 116-D-5 (the 1904-D Outfall Structure).

Process Description: The spillway was an alternate discharge point for the 116-DR-5 Outfall Structure. It was planned to be used only if the 100-D-60 river effluent pipelines were blocked, damaged, or undergoing maintenance. There is no corroborated physical or historical evidence that the spillway was ever used. Originally the spillway exited the east side of the 116-DR-5 outfall structure, made a rounding 90-degree turn, and continued to the river shoreline. The majority of the spillway was covered over with soil, about 1978 when the outfall structure was demolished. During a site visit on February 7, 2005, a portion of one wall of the spillway was visible.

Related Sites/ Structures: The site is associated with the 100-D-60 River Effluent Pipelines and the 116-DR-5 Outfall Structure.

Waste Type: Construction Debris

Waste Description: No evidence has been found that the spillway was ever put into service, the COPCs for the 100-D-66 spillway would be the same as those for the 116-DR-5 outfall structure. The contaminants of concern include carbon-14, cesium-137, strontium-90, uranium-235/238, and plutonium-239/240.

Code: 100-D-67

Classification: Accepted

Names: 100-D-67; D Island; D Island Contamination

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of contamination spread from vent risers that extended from the buried river effluent pipelines (100-D-60).

Location: D Island is a tapered, 213 meter (700 foot) wide island, located approximately 183 meters (600 feet) from the shoreline, directly across from the D and DR outfalls.

Process Description: The island received contamination from the 116-D-5 and 116-DR-5 Outfall Structures via vented river effluent pipelines during operation of 100D/DR Area.

Related Sites/ Structures: 100D River Effluent Pipelines (100-D-60), 100-DR Outfall Structure, (116-DR-5), 1904-D Outfall Structure, (116-D-5)

Code: 100-D-69

Classification: Accepted

Names: 100-D-69; Sodium Dichromate Found Near Pacific Avenue and Paddock Street

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of a stained concrete foundation and potentially contaminated soil.

Location: The site is located in a parking lot southwest of the intersection of Pacific Avenue and Paddock Street (the "T" intersection southwest of 105-D Reactor and northeast of the 151-D Substation). The center of the site is estimated at E573695.26, N151358.74.

Process Description: Reportedly, during early D&D activities at 100D, involving the 100D water plants, concrete debris was crushed and spread in-lieu of gravel fill. Adjacent areas have been covered with

gravel as part of field remediation's parking lot construction activities. Likely, the material has been there for approximately 10 years. Gravel covered areas are not characterized.

Related Sites/ Structures: The site may have been related to the decommissioning of the 190-D Complex in 1996.

Waste Type: Chemical Release

Waste Description: The waste is sodium dichromate contaminated concrete. Sodium dichromate was the only contaminant of potential concern.

Code: 100-D-70

Classification: Accepted

Names: 100-D-70; 184-DA; 184DA Steam Generating Plant Dry Well

Reclassification: No Action (7/7/2011)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The waste site consists of a 122 centimeter (48 inches) diameter drywell located on the south side of the 184-DA Building. It received steam separator discharge from equipment within the former 184-DA (demolished) Building. The pipeline from the building to the dry well is part of site 100-D-88. Confirmatory sampling results supported a reclassification of the 100-D-70 waste site to No Action.

Location: The drywell is on the south west side of the former 184DA Building. The 184DA building was located just south of the 1719D First Aid Station, southeast of the 1716D Gas Station, and north of the 189D building.

Process Description: The 184DA Building was a metal building constructed in 1968 and was designed as a steam generating facility. The facility contained a steam generator, fuel oil storage tank, fuel oil pump, deaerator, water softener, chemical treatment, fuel tank, steam separator, heater, diesel generator, liquid level gauges, and steam flow meter. One fuel tank (100-D-9) was located near the northwest corner of the building and has been removed. The other fuel tank was located near the southeast corner of the building. GPR was conducted in the southeast corner of the building and could not confirm if the tank was present.

Related Sites/ Structures: The site was associated with 184-DA Building only.

Code: 100-D-71

Classification: Accepted

Names: 100-D-71; Vertical Safety Rod Tower Components

Reclassification: None

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: The site currently consists of the following components: A 1.2 meter (4 foot) diameter by 2.2 meter (7 foot) deep concrete drywell, a below grade pit that is approximately 30.5 centimeters (12 inches) square, a 7.6 centimeter (3 inch) diameter underground cast iron process waste pipe, originating at the bottom of the tower's elevator shaft, and any potentially contaminated soil. It is unknown to whether the components are still at the site. The cast iron pipe extended underground from the pit, on the north side of 195-D Building, west about 12 meters (39 feet) to the drywell. Wastes generated in the tower collected in a floor pit located at the bottom of the tower's elevator, which then drained to a drywell.

Location:	french drain is centered at coordinates E573542.5, N151538.6. The pit is centered at coordinates E573558.9, N151541.4.
Process Description:	Constructed in 1957 (Project CA-548), the structure was a steel tower built to replace the original wooden VSR at White Bluffs. It was constructed of corrugated steel wall over steel framing and sat on a 1 meter (3 feet) thick underground octagonal shaped concrete base. Its construction coincided with major upgrades and expansions of the pumping and piping systems of the Hanford reactors to allow increased power levels. At the time these power level increases were proposed, an intensive review was performed of all of the safety and control equipment associated with the eight reactors.
	The Ball 3X systems were investigated in 1959 and in-pile ball removal equipment was designed and tested in the 195-D building. By the late 1960s, the N Reactor was experiencing multiple problems with the Ball 3X system. During N Reactor's next 15 years of operation, tests were conducted to evaluate various aspects of ball mechanics and operation and of the issues and difficulties raised by graphite distortion effects on the ball channels. The testing in this tower helped establish criteria for the ball system upgrade that actually occurred in 1984. Following these tests, very little work was done in the building.
Related Sites/ Structures:	This site relates to the 195-D VSR Tower. The tower was a stand-alone test facility.
Waste Type:	Oil
Waste Description:	Potential contaminants of concern (COPCs) would include oils and PCBs.
	No testing with radiological materials was known to have occurred in the tower. A transformer bearing PCB oil was located inside the tower on the ground floor. Industrial chemicals and lubricating oils were used in the building. It is not known what, if any, dangerous or hazardous chemical wastes may have been discharged to the dry well.

Code:	100-D-72	Classification:	Accepted
Names:	100-D-72; 183D Acid Facility	Reclassification:	None
Type:	Process Unit/Plant	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site is comprised of the 183-D acid addition facility. It includes a concrete trench that protected the service piping (air, steam, filtered water, lime slurry, sulfuric acid) and drained acid waste to the neutralization pit. The underground piping contained in the trench are part of this waste site, with the exception of the filtered water line which is assigned to 100-D-63. The site also includes a dry well, two sumps (exterior to the trench), two storm drains, a storm sewer and an acid/silica supply line.		
Location:	The site is south of the 183-D Head House, east of the railroad car spot and on the west side of the flocculation basins.		
Release Description:	All activities associated with this waste site are related to the unloading, storage and use of acid to support water treatment in the 183-D Head House.		
Process Description:	All components were associated with the storage and flow of sulfuric acid to the 183-D Head House where it was added for water treatment. The 183-D Head House was designed to treat raw river water before it entered the reactor. Chemicals were added to the river water in the head house. The head house was used for the storage, preparation, and addition of alum, sulfuric acid, and chlorine for water treatment. Alum was used as a flocculating agent and the excess sulfuric acid was used to control the acidity of the water. Bauxite was stored in bunkers		

on the third floor and used at a required rate. Chlorine was added to control algae. Concentrated sulfuric acid was received by railroad car and stored in the outside acid storage tanks. It was pumped from the storage tank to the head tank through black iron pipelines. The building also contained a laboratory, restrooms, janitor's room, electrical switchgear room, and locker room. As of August 2006, the 183-D Head House is inactive, but still intact.

Related Sites/ Structures: The site was associated with the 183-D Head House, flocculation basins and 100-D-31 water treatment facilities underground pipelines.

Waste Type: Soil

Waste Description: Contaminants of potential concern (COPCs) include lead and mercury. Sulfuric acid used at the head house may have contaminated impurities, such as lead and mercury.

The trench exits the south side of the 183-D Head House and continues toward the two sulfuric acid storage tanks. The trench is 0.76 m (2 ft 6 in) wide and depending on the location contains different piping. From the south side of the 183-D Building to the sulfuric acid pumps, the trench contains a 2.5 cm (1 in) steam line, a 5 cm (2 in) filtered water line, a 5 cm (2 in) lime slurry line and a 1.9 cm (0.75 in) air line. From the sulfuric acid pumps to the two sulfuric acid storage tanks, the trench contains 1 steam line, a 5 cm (2 in) lime slurry line, a 5 cm (2 in) sulfuric acid line that goes to the storage tank, a 5 cm (2 in) sulfuric acid line that goes to the head tank, and 2-5 cm (2 in) PVC storage tank drains in the bottom of the trench.

Code: 100-D-73

Classification: Accepted

Names: 100-D-73; 108-D Chemical Pump House

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The site is the soil and possibly the demolition debris under the former 108-D Building. It was identified as part of the Orphan research for sodium dichromate investigation conducted for the D/DR Reactor area.

Location: The 108-D Building was located north of the 105-D Reactor and east of the 1709-D Building.

Release Description: A mixing tank may have discharged high concentrations of sodium dichromate into the soil. It was reported that "several sodium dichromate storage tanks associated with the water treatment facilities overflowed or drained into the process sewer and outfall. Monitoring wells near the 108-D Building indicate that up gradient well 199-D5-15 contained chromium concentrations higher than the down gradient well 199-D5-14. Suggesting sodium dichromate may have originated from this area.

Process Description: From about 1944 until 1950, the receiving, mixing, and transfer of sodium dichromate were conducted in the 108-D Building. The 108-D facility received, stored, and prepared various chemicals for the preparation of solution concentrations. Chemicals were unloaded from railcars at the weather-proof unloading railroad car spot in either bags or barrels (Spec. HW-2036). The method utilized for the mixing of sodium dichromate chemicals in the 108-D Building was referred to as the "batch method" that consisted of dichromate in crystalline form. The crystalline material was dissolved in water and diluted to a 10% to 15% dichromate solution, mixed, and transferred to feed tanks in the 105-D and 185-D Buildings. Although the total quantity of material used in the facility is unknown, some indication is available; for example, from January 29 through February 25, 1945, 8,960 kilograms (19,736 pounds) were mixed into solution (HW-7-1388 Del). Required additives were prepared in batches and emptied into the conical mix tank (HAN-10970). Water was added and a 10% concentration of sodium dichromate solution was prepared and pumped by two transfer pumps to one of two

solution feed tanks located near the #1 deaerator on the mezzanine floor in the 185-D Building. Each tank in the 185-D Building had a 3,800 Liter (1,000 gallon) capacity and dimensions of 1.6 meters by 2.4 meters (5 feet 4 inches by 8 feet) (Spec. 2017). From the tanks, sodium dichromate was added to the process water at the exit side of the deaerators in the 190-D Building. The above grade structures of the 185-D and 190-D Buildings have been demolished. Mixed sodium dichromate was pumped from the 108-D Building through two different pipelines. One overhead pipeline connected to the 105-D Reactor and the other below grade to the 185-D Building (W-74552). Pumps in the 108-D Building transferred sodium dichromate to the 105-D Reactor through a 7.6 centimeter (3 inches) diameter overhead pipeline to the valve pit extension into a storage tank located in the acid mixing area (Spec. HW-2036 and W-73176). The second pipeline was a 7.6-centimeter (3 inches) diameter sodium dichromate pipeline (100-D-56) that extended from the west side of the 108-D Building to the north side of the 185-D Building. Mixed solutions were injected into the process water systems in the 105-D and 185-D Buildings (Spec. HW-2036). These pipelines were active until about 1950 when the mixing facility was relocated to the 185-D Building as part of Project C-396 (H-1-2901). Research suggests that the mixing of sodium dichromate into solution in the 108-D Building and associated pipelines was discontinued in 1950. Previous investigations stated that sodium dichromate storage tanks were located on the west side of the 108-D Building. Historical research indicates that no sodium dichromate storage tanks ever existed outside the west side of the 108-D Building. The only tanks located on the west sides of the facility were two sulfuric acid tanks and two sodium silicate tanks.

Related Sites/ Structures: A total of eight pipelines were associated with the 108-D Building. The 108-D Building was associated with the two sodium dichromate lines (100-D-56) that exited the west side of the facility and extended to the 185-D Building. It is also associated with a 7.6 centimeter (3 inches) diameter overhead sodium dichromate line that extended from the 108-D to the 105-D Reactor (removed). There are also two pipelines (100-D-63) that exit the northwest corner of the facility. Three pipelines are associated with 100-D-31. Structures associated with the sodium dichromate system included the 185-D, 190-D Pump Room and sodium dichromate tank and the 183-DR Head House.

Waste Type: Chemicals

Waste Description: The waste is potentially contaminated soil because of the releases from the 108-D Building. There is a potential for sodium dichromate, oxalic acid, sodium silicate, and radionuclides under the existing below grade footprint of the 108-D Building.

Soil samples collected in 1994 indicate the presence of radionuclide contamination that may include Carbon-14, Potassium K-40, radium Ra-226, Thorium-228, and Thorium-232 (DOE/RL-93-29). The possibility also exists for sodium dichromate. It is not known what would cause the presence of radionuclide contamination.

Code: 100-D-74	Classification: Accepted
Names: 100-D-74; Drywell Well	Reclassification: No Action (6/15/2011)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site is a drywell.	
Location: The drywell is located north of the northwest side of original 105D Reactor footprint. The coordinates of the dry well are E 573744.2, N 151316.3.	
Process Description: Drawing H-1-8522-DR, indicates the purpose of the dry well was to receive steam condensate from the heaters inside the 105-DR Building. In conjunction with the dry well is a flash tank (flash steam to condensate) and a 5.1 cm (2 in) line to the dry well. Although the drawing is not	

clear, it also appears that some floor drains were connected also. Steam heating is a non-contact system isolated from radiological contaminated portions of the facility. The entire building was a negative draft system vented through the 117-D Filter Building eliminating the possibility of radiological contamination in this part of the building.

Related Sites/ The site is associated with the 105-DR Reactor.

Structures:

Waste Type: Steam Condensate

Waste The site received steam condensate from the heating units inside the 105-DR Reactor.

Description:

Code: 100-D-75 **Classification:** Accepted

Names: 100-D-75; 151-D Primary Electrical Substation; **Reclassification:** None
152-C1-D & 152-E1-D Secondary Electrical Substations

Type: Electrical Substation

Start Date:

Status: Inactive

End Date:

Description: The waste site contains of three components: the area within the fence at the 151-D Primary Substation, and two Secondary Electrical Substations (152-C1-D and 152-E1-D). Electrical substations are automatically categorized as New Discovery Sites because historically leaks and spills of PCBs from the electrical transformers, circuit breakers, and transfer systems during the early years of operation went unreported. An analogous site, the 151-H Primary Substation (100-H-24) was remediated in 2000, by removing and disposing of more than 21,000 tons of PCB-contaminated material. All three substations are inactive (not providing any electrical power to D Area), although live 230KV power lines will be routed across the 151-D switchyard for the foreseeable future. The site has been divided into three subsites as follows:

100-D-75:1, 151-D Primary Electrical Substation

100-D-75:2, 152-E1-D Secondary Electrical Substation, Substation C4-S1

100-D-75:3, 152-C1-D Secondary Electrical Substation

Location: The 151-D Building and associated switchyard are located approximately 350 m (107 ft) southwest of the 105-D Reactor building and 235 m (72 ft) northwest of the 105-DR Reactor building, with the center point of the yard at N 151328, E 573542.

The 152-C1-D Secondary Electrical Substation, centered at (N 151584, E 573369), is near the 183-D Filter Building.

The 152-E1-D Secondary Electrical Substation, centered at (N 151692.84, E 572833.69), is near the 181-D Pump House.

Release Description: The only significant reported release of transformer oil was in 1995 in the 151-D switchyard. The site was remediated, and reclassified to Closed Out. See WIDS General Summary Report 100-D-27 for details.

Process Description: The Midway Station fed 230KV power to the 31,250KVA transformers located in the 151-D switchyard. From these transformers, power was transmitted via overhead and underground cables to secondary and distribution substations located throughout the 100-D/DR Area. Circuit breakers were also in service to support the switchyard operations. PCB-containing oil was transferred, as needed, from a rail tanker on the railroad spur through over ground hoses and piping to transformers and oil circuit breakers in the yard. The smaller transformers at the

secondary and distribution substations were also filled via over ground hoses from oil trucks.

Related Sites/ Structures: The 151-D Primary Substation distributed 13.8KV power to transformers located at the 181-D River Pump House, 182 Head Houses, 183 Filter Houses, 184-D Power House, 186-D Water Treatment Plant, 190 Pump Houses, and 105-D/DR Reactors, which in turn distributed power to associated facilities. The 151-D Switch House is essentially a one-story building, having a sub-level cable pit equipped with a sump pump. All duct lines originate/terminate at the Switch House. The cable pit is a completely enclosed reinforced concrete pit with floor slab, varying from 0.3 to 0.4 meters (1 to 1.5 feet) in thickness, and with 0.3 meters (1 foot) thick walls. Switchgear is located on the main floor directly above the cable pit. The overall dimensions of the Switch House are 25 meters by 9.3 meters by 8.7 meters (83 feet by 30.5 feet by 28.5 feet.)

Waste Type: Soil

Waste Description: PCB contamination of the soil surrounding the transformer and circuit breaker pads is the

primary waste concern. PCB-contaminated soil could also exist along the railroad spur.

This Site has the Following SubSites:

Code: 100-D-75:1

Names: 100-D-75:1; 151-D Primary Electrical Substation

Code: 100-D-75:2

Names: 100-D-75:2; 152-E1-D Secondary Electrical Substation; Substation C4-S1

Code: 100-D-75:3

Names: 100-D-75:3; 152-C1-D Secondary Electrical Substation

Code: 100-D-75:1

Classification: Accepted

Names: 100-D-75:1; 151-D Primary Electrical Substation

Reclassification: None

Type: Electrical Substation

Start Date:

Status: Inactive

End Date:

Description: The substation consists of a fenced, gravel-bed yard measuring approximately 165 m (541 ft) on a side with the 151-D Switch House along the northern fence line. A railroad spur enters the yard from the east, and parallels the north fence line. Concrete pads of various sizes protruded from the crushed gravel bed throughout the yard, supporting a variety of electrical equipment, including transformers, circuit breakers, and power line towers and stands.

The 31,250 KVA transformers were originally located at N 151338, E 573515; and N 151338, E 573556. Sometime after 1956 a third very large ground transformer was added at N 151374, E 573516. The circuit breakers were located at N 151300, E 573494; N 151300, E 573536; and N 151300, E 573576.

Location: The 151-D Building and associated switchyard are located approximately 350 m (107 ft) southwest of the 105-D Reactor building and 235 m (72 ft) northwest of the 105-DR Reactor building, with the center point of the yard at N 151328, E 573542.

Process Description: The Midway Station fed 230KV power to the 31,250KVA transformers located in the 151-D switchyard. From these transformers, power was transmitted via overhead and underground cables to secondary and distribution substations located throughout the 100-D/DR Area. Circuit breakers were also in service to support the switchyard operations.

PCB-containing oil was transferred, as needed, from a rail tanker on the railroad spur through over ground hoses and piping to transformers and oil circuit breakers in the yard.

An oil spill from one of the 151-D switchyard transformers was remediated in 1995 (100-D-27). This may not have been the extent of transformer leaks and spills, because such events were not consistently recorded before about 1985. And there is anecdotal information from power operators that transformer spills and leaks were not uncommon. Therefore, any transformer or circuit breaker pad and surrounding soil may have PCB contamination.

According to the Electrical Utilities Craft Supervisor, the equipment in the 151D yard is inactive. The only thing energized is the overhead lines going through the yard. Because there is a section of energized 230kV buswork that runs through the substation yard, the yard is off-limits to all except qualified T system workers. Most of the equipment within the substation has already been drained of oil.

The circuit breakers stored in the northeast corner of the switchyard are disconnected and drained. These circuit breakers could not have been in use at this location. When in service the circuit breakers would have to be put on a concrete pad and bolted to the overhead bus.

Two smaller transformers that were added at the switchyard are old 181D transformers (100-D-75:2). Both PCB Contaminated Transformers were drained on 7/12/2005. This action stopped the 5-year TSCA time requirement. Based on the available aerial photography it is evident that the two smaller transformers were added to the switchyard sometime between April 2008 and August 2009.

The switch house was used as a regulatory component to the switchyard. Historically, there are no processes that indicate any type of contamination to be associated with this structure.

Related Sites/ Structures: The 151-D Primary Substation distributed 13.8KV power to transformers located at the 151-D Switch House, 181-D River Pump House, 182 Head Houses, 183 Filter Houses, 184-D Power House, 186-D Water Treatment Plant, 190 Pump Houses, and 105-D/DR Reactors, which in turn distributed power to associated facilities.

Waste Type: Soil

Waste Description: There may be PCB contaminated soil at these substation sites.

The SubSite is Part Of:

Code: 100-D-75

Names: 100-D-75; 151-D Primary Electrical Substation; 152-C1-D & 152-E1-D Secondary Electrical Substations

Code: 100-D-75:2

Classification: Accepted

Names: 100-D-75:2; 152-E1-D Secondary Electrical Substation; Substation C4-S1

Reclassification: None

Type: Electrical Substation

Start Date:

Status: Inactive

End Date:

Description: The secondary substation consists of a small fenced area with concrete pads for the former transformers and inactive electrical components.

Location: The 152-E1-D Secondary Electrical Substation, centered at (N 151692.84, E 572833.69), is near the 181-D Pump House.

The shape of the 152-E1-D Secondary Electrical Substation is rectangular and has a perimeter of 478.9 m (1571.2 ft). Its length is 137.6 m (451.44 ft), width 91.25 m (299.38 ft), Square Area

12959.5 m2 (139494.9 ft)

Process Description: The Midway Station fed 230KV power to the 31,250KVA transformers located in the 151-D switchyard. From these transformers, power was transmitted via overhead and underground cables to secondary and distribution substations located throughout the 100-D/DR Area. The smaller transformers at the secondary and distribution substations were filled with PCB-containing oil via over ground hoses from oil trucks.

Based on the historical photograph (P-4479) originally the two transformers existed behind the power poles. According to the D-Area, National Code Inspector, two concrete pads that are currently located at this secondary substation is suspected to have housed two smaller transformers after downsizing to provide power for 181D Pump House. The transformers have since been removed, but the concrete pads remain. The transformers were added to the 151-D switchyard (100-D-75:1). The transformers were drained of PCB-containing oil on 7/12/2005. This action stopped the 5-year TSCA time requirement. Based on the available aerial photography it is evident that the two smaller transformers were added to the switchyard sometime between April 2008 and August 2009.

Waste Type: Soil

Waste Description: There may be contaminated soil at these substation sites.

The SubSite is Part Of:

Code: 100-D-75

Names: 100-D-75; 151-D Primary Electrical Substation; 152-C1-D & 152-E1-D Secondary Electrical Substations

Code: 100-D-75:3

Classification: Accepted

Names: 100-D-75:3; 152-C1-D Secondary Electrical Substation

Reclassification: No Action (8/8/2011)

Type: Electrical Substation

Start Date:

Status: Inactive

End Date:

Description: Three transformers were located at this substation, but have since been removed; leaving the three concrete pads that supported the transformers.

Location: The 152-C1-D Secondary Electrical Substation, centered at (N 151584, E 573369), is near the 183-D Filter Building.

The 152-C1-D Secondary Electrical Substation has a rectangular perimeter of 42.3 m (138.8 ft). Length 8.60 m (28.22 ft), width 13.6 m (44.62 ft)

Process Description: The Midway Station fed 230KV power to the 31,250KVA transformers located in the 151-D switchyard. From these transformers, power was transmitted via overhead and underground cables to secondary and distribution substations located throughout the 100-D/DR Area. The smaller transformers at the secondary and distribution substations were filled with PCB-containing oil via over ground hoses from oil trucks.

A portion of the 100-D-31:9 pipeline was located directly beneath the 152-C1-D Secondary Electrical Substation. During the remediation of the 100-D-31:9 waste site the three concrete pads at the 152-C1-D Secondary Electrical Substation and portions of the surrounding soil were removed and disposed of at the Environmental Restoration Disposal Facility (ERDF). Additional surrounding soil was collected as part of the overburden for the 100-D-31:9 waste site. The 152-C1-D secondary substation will be addressed using the sample results associated

with the 100-D-31:9 closeout sampling.

Waste Type: Soil

Waste Description: There may be PCB contaminated soil and concrete at these substation sites.

Description:

The SubSite is Part Of:

Code: 100-D-75

Names: 100-D-75; 151-D Primary Electrical Substation; 152-C1-D & 152-E1-D Secondary Electrical Substations

Code: 100-D-76

Classification: Accepted

Names: 100-D-76; Potential Crib Next to 108D; Potential Former 116-D-3 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1967

Description: The site is possible crib located near the former 108D building. It was identified during a geophysical investigation. The waste site is either a french drain or crib. It may be the crib formerly known as 116-D-3. Historical documentation, a construction drawing, and GPR results indicate that waste site 116-D-3 probably remains near the southeast corner of the 108-D Building.

Location: The site is located just off the edge of southeast corner of the former 108D building.

Related Sites/Structures: The crib is associated with the 108-D Building and a vitrified clay pipe known as 100-D-31:3 that crosses this waste site in a north/south direction. It is also associated with 116-D-3.

Waste Type: Process Effluent

Waste Description: Due to the confusion of the location of the crib, the same historical documentation may apply to waste sites 116-D-3 and 116-D-4. Historical information suggests the crib may have received low level fission product wastes from the contaminated maintenance shop and cask decontamination pad in the 108-D Building. The crib received 0.08180 curies of Cs-134 and 30,000 liters. (7,920 gallons) of liquids. The contaminants of potential concern are assumed to be the same for 116-D-4 that were uranium-238 and hexavalent chromium.

Code: 100-D-78

Classification: Accepted

Names: 100-D-78; 100D Yellow Stained Soils

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of four locations of contaminated soil between the 183-D and 186-D Buildings. The staining for these locations is yellowish in color with some areas of white crusty material. Stain one and two are in the area where the acid trench was located and may parallel nearly the entire length of the west wall of the 186-D Building. Stain three is near the southwest corner of the Waste Acid Trench (120-D-2). Stain four is southwest of the Waste Acid Reservoir.

Location: The patches of yellow-stained soil are scattered throughout the 100D area.

Process Description: The potentially contaminated soil may have originated from activities associated with the 186-D Building, which was initially constructed as a demineralization plant to remove dissolved calcium, magnesium, and salts through sulfonated coal. However, the building was not used for

this purpose. Historical information is very limited for this facility. Although the exact historic use of the facility is unknown, it is believed that it was used for a period of time for storage. The overall dimensions of the building were 204 by 39 by 27 meters (670 feet by 128 feet by 87 feet). The demineralization plant was a two story structure with a reinforced concrete foundation, reinforced concrete slab floor, steel framework, concrete block superstructure and built-up roofing over precast concrete tile slabs. The ground floor contained two banks of twelve wood mixing tanks located on the east side of the facility. Between the mixing tanks were four wood acid reclaiming tanks and two steel soda reclaiming tanks. Two steel soda dissolving tanks were located at the southern end of the facility. The second floor contained 24 wood tanks along the east wall. The building contained acid tanks, pumps, clearwells and associated equipment. The clearwells were mostly below grade and were located along the east side of the facility with dimensions of 166 by 17 by 9 meters (545 feet by 55 feet by 30 feet). The clearwells and pump building adjoined the 185-D Building. Adjacent to and east of the center portion of the clearwells was a pump house that contained seven stainless steel water pumps. Along the west wall is an acid-proof brick trench approximately 1.2 meter by 1.8 meters (4 feet deep by 6 feet wide), that extends almost the entire length of the building. The trench empties into the 186-D Waste Acid Reservoir (120-D-2). Approximately 3 meters (10 feet) west of the plant at the south end of the building were six, outside, horizontal sulphuric acid steel tanks. West of the 186-D Building was the Waste Acid Reservoir (120-D-2) used for the disposal of waste acid from the facility. The Waste Acid Reservoir was constructed of acid proof brick with a 3 ply water proof membrane. Drain pipes were connected to the D-Area process sewer system. It was demolished in 1979 and buried in place.

Related Sites/ Structures: Related structures included: the 186-D Waste Acid Reservoir waste site 120-D-2 and the 186-D Building.

Waste Type: Soil

Waste Description: The 186-D Waste Acid Reservoir has been identified as a site requiring remediation as stated in the interim ROD for the 100-DR-1, 100-DR-2 Operable Units, so the waste is potentially contaminated soil.

Contaminants of Potential Concern indicated by sample data are asbestos, ICP metals, mercury, PCB, herbicide, pesticide, and hexavalent chromium were present.

Code: 100-D-80

Classification: Accepted

Names: 100-D-80; 100D Tar Stained Soils & Miscellaneous Debris

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of four areas that were discovered during the 2006 Orphan Site's Evaluation (OSE) field investigation (EL-1583-6). The areas contain a broken light bulb, tar like material, oil staining and a valve box. The site has been divided into two subsites as follows: 100-D-80:1 Tar Stained Soil & Miscellaneous Debris (Areas 1, 2 and 3) and 100-D-80:2, Valve Box with Possible Asbestos Insulation (Area 4).

Location: The debris and patches of tar-stained soil are scattered throughout the 100D area. See subsites for precise locations.

This Site has the Following SubSites:

Code: 100-D-80:1

Names: 100-D-80:1; Tar Stained Soil & Miscellaneous Debris (Areas 1, 2 and 3)

Code: 100-D-80:2
Names: 100-D-80:2; Valve Box with Possible Asbestos Insulation (Area 4)

Code: 100-D-80:1
Classification: Accepted
Names: 100-D-80:1; Tar Stained Soil & Miscellaneous Debris (Areas 1, 2 and 3)
Reclassification: No Action (3/30/2011)
Type: Dumping Area
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of three areas identified during the 2006 100-D Area Orphan Site Evaluation (OSR-2006-0001). These areas are not associated with any particular process other than by proximity. Area 1 was identified on April 10, 2006. Area 2 was identified on April 11, 2006. Area 3 was identified on May 8, 2006.

Area 1 was identified as a single broken light bulb (Orphan Site ID# D48), located approximately 100 m (328 ft) south of the 118-D-1 waste site. Area 1 is centered at coordinates E 573068.8, N 151491.248. The bulb had a metal base, a clear glass cover, and two internal fluorescent-type bulbs. The bulb was approximately 6.4 cm (2.5 in.) in diameter and 0.61 m (2 ft) in length. Fixtures were not associated with this bulb, and the bulb may have been an early intrinsically safe bulb with hand-blown glass. During a site visit on November 4, 2009, no evidence of a light bulb was found at this location.

Area 2 contained a tar-like material with a fiber matrix that appeared to have been dumped (Orphan Site ID# D49). The area lies within the 118-D-3 Burial Ground sorting cells and has been previously removed during 118-D-3 remediation activities. Area 2 was located approximately 260 m (853 ft) southeast of the 100-DR Reactor and 110 m (387 ft) northwest of the 100-D-17 waste site and centered at coordinates E 574022.38, N 151103.16. A 1948 photo indicates that the site was east of construction support buildings and apparent lay down areas.

Area 3 is classified as a tar-and oil-stained area (Orphan Site ID# D65), located approximately 50 m (164 ft) south of the southwest corner of the 182-D Reservoir. Area 3 is centered at coordinates E 573757.9, N 150857.4. The site is vegetated with native grasses. Area 3 appears to be a possible oil changing location. Confirmatory sampling was performed on this portion of the waste site in August 2010.

Location: Area 1 is located approximately 100 m (328 ft) south of the 118-D-1 waste site. Area 1 is centered at coordinates E 573068.8, N 151491.248.

Area 2 is located approximately 260 m (853 ft) southeast of the 100-DR Reactor and 110 m (387 ft) northwest of the 100-D-17 waste site. Area 2 is centered at coordinates E 574022.38, N 151103.16.

Area 3 is located approximately 50 m (164 ft) south of the southwest corner of the 182-D Reservoir. Area 3 is centered at coordinates E 573757.9, N 150857.4.

Waste Type: Soil
Waste Description: The waste is any potentially contaminated soil.

Closure Info: One shallow soil sample (0 to 0.15 m [0 to 6 in.] below ground surface) and one duplicate soil sample were collected from Area 3 at the location where evidence of tar and oil staining were observed during the orphan sites investigation in 2006. No radiological activity or volatile organic compounds (VOCs) were detected during confirmatory sampling. Analysis was performed to evaluate if contamination associated with tar or oil was present. Confirmatory

sampling at the 100-D-80:1 subsite indicated that environmental contamination was not present, and remedial action was not necessary. The confirmatory sampling data has been used for a No Action determination. Table 1 identifies the locations and analyses for each confirmatory sample.

The SubSite is Part Of:

Code: 100-D-80

Names: 100-D-80; 100D Tar Stained Soils & Miscellaneous Debris

Code: 100-D-80:2

Classification: Accepted

Names: 100-D-80:2; Valve Box with Possible Asbestos Insulation (Area 4)

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: Subsite two consists of Area 4, located south of the 182-D Reservoir and northwest of the 183-DR Head House. This area contained a small wooden structure, which contained piping (Orphan Site ID# D76). This structure is believed to be a valve box cover, possibly to prevent freezing pipes during the winter months. A raw water pipeline was known to have existed in the area. The proximity of the valve box to the 91 cm (36 in) raw water pipeline would suggest that it is associated with the 100-D-63 pipelines. Due to the presence of friable asbestos, this structure will be recommended for remediation without further confirmatory evaluation.

Location: This subsite is located south of the 182-D Reservoir and northwest of the 183-DR Head House. Area 4 is centered at coordinates E 573111.347, N 151295.8. The area dimensions are 1 m (3 ft) by 1 m (3 ft).

Waste Type: Not Specified

Waste Description: The waste is potential asbestos containing materials that have been abandoned.

The SubSite is Part Of:

Code: 100-D-80

Names: 100-D-80; 100D Tar Stained Soils & Miscellaneous Debris

Code: 100-D-81

Classification: Accepted

Names: 100-D-81; 100D Burn Areas and Other Stained Areas

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: During the 4/26/06 Orphans Sites field walk down a total of eight soil areas were identified as either stained soil or a burn area.

Location: The burned and stained areas are scattered throughout the 100D area.

Code: 100-D-82

Classification: Accepted

Names: 100-D-82; 100D Garnet Sand Sites

Reclassification: No Action (1/6/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site has three areas. They were all discovered during the WCH Orphan Site's Evaluation

field investigation during 2007. Area 1 was located during the OSE field investigation on 4/11/06, area ID 77, photos 10 and 11. The site contains garnet sand. Area 2 is a garnet sand location discovered during the OSE field investigation. The garnet sand was recorded on 5/4/06, area ID 291, photos 9 and 10. Area 3 was discovered during the OSE field investigation on 5/2/06, point ID 265, photo 40. The garnet sand is located in an area with what appears to be a concrete sidewalk.

Location: Area 1 is located southeast of the 105-DR Reactor. The site is centered at coordinates E 573909.37, N 151021.07. Area 2 is located just west of the 1716-D Building. It is centered at coordinates E 573516.8, N 151794.9. Area 3 is located northwest of the 105-D Reactor and northeast of the 190-D Building. It is centered at E 573695.229, N 151676.929.

Process Description: Garnet sand was recorded as waste sites due to their potential to contain contaminants. Garnet grit was commonly used in sandblasting operations to remove rust, paint, and other contaminants from the surface of metal components. The garnet sand itself is not hazardous.

Related Sites/ Structures: Area 1 was associated with 105-DR (Reactor). Area 2 was associated with 1717-D (Maintenance Shop) and 184-D (Power House). Area 3 was associated with 105-D (Reactor) and 190-D (Main Pump House). Also with waste sites 100-D-31:1, 31:2, and 31:7.

Waste Type: Soil

Waste Description: Garnet grit was commonly used in grit-blasting operations to clean rust, paint, or contamination from the surface of metal components. The garnet material is not a hazardous substance, but there was a potential for contamination from the surface material that was removed by grit blasting. Contaminants of potential concern include lead, mercury and polychlorinated biphenyls (PCBs).

Closure Info: The Remaining Sites Verification Package (RSVP) for the 100-D-82 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD). The RSVP and sampling results support a reclassification of the site to No Action.

A site visit was performed in October 2009. Areas 2 and 3 were observed to have been removed as a part of the 100-D-31:1, 100-D-31:2 and 100-D-31:7 pipelines remediation. Area 1 of 100-D-82 was readily identifiable; it existed as flat terrain and could be readily accessed for confirmatory sampling.

Due to the extent of the 100-D-31 excavations, Areas 2 and 3 of the 100-D-82 waste site were fully removed and disposed at the Environmental Restoration Disposal Facility. Only Area 1 was addressed by the confirmatory work instruction for this waste site.

The COPCs included polychlorinated biphenyls (PCBs), mercury, chromium, lead, and the remaining inductively coupled plasma (ICP) metals. While it was not considered a COPC, analysis for hexavalent chromium was performed to support the effort to identify hexavalent chromium sources across the 100-D Area.

Confirmatory sampling was performed, and the analytical results indicate that the residual concentrations of COPCs at this site meet the RAOs for direct exposure, groundwater protection, and river protection. The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Different (RPD) calculation in Appendix C of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The 100-D-82 waste site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code:	100-D-83	Classification:	Accepted
Names:	100-D-83; 100D Treated Water Pipelines	Reclassification:	None
Type:	Product Piping	Start Date:	
Status:	Inactive	End Date:	
Description:	The site includes 56 additional treated water pipe segments that were not previously identified within an existing waste site. The pipelines supported the pre-reactor non-radioactive cooling water processing facilities. The pipelines were used to transfer chemical products to the water treatment building and treated cooling water to the reactor and laboratory facilities. The additional pipeline segments also include any associated manholes (with associated drains), catch basins, junction boxes, valve control systems or any other below surface related feature. The site has been divided into four subsites as follows: 100-D-83:1 183-DR Acid Addition Pipelines 100-D-83:2 183-DR Filter Backwash Connection 100-D-83:3 108-D Acid Addition Facility Pipelines 100-D-83:4 Additional Treated Water Pipelines 100-D-83:5 186-D Acid Neutralizing System Pipelines		
Location:	The treated water pipelines are located adjacent to related facilities 108D, 183D, 186D, 190D, 183DR, and 187-DR).		
Process Description:	The 2009 WCH 100-D Area Orphan Site Evaluation identified a number of treated water pipe segments that were not accounted for in other waste sites. Some of the pipe segments connect to (or are extensions of) other waste sites. In some cases the pipe segments have been previously removed by remediation of co-located waste sites. See individual subsites for detailed process descriptions.		
Related Sites/ Structures:	The 108D, 183D, 185D, 186D, 189D, 190D, 183DR, 190DR, annexes, pipe tunnels and associated rail/car unloading spots are associated with this pipeline classification. Associated waste sites include: 100-D-31, 100-D-56, 100-D-77 100-D-77, DR Reactor Water Treatment Facility, Acid Facility, 183-DR Head House, 183-DR Filter Building, Sodium Dichromate Systems, 183-DR Flocculation Basins, 183-DR Sedimentation Basins, 100-D-73.		

This Site has the Following SubSites:

Code:	100-D-83:1
Names:	100-D-83:1; 183-DR Acid Addition Pipelines
Code:	100-D-83:2
Names:	100-D-83:2; 183-DR Filter Backwash Connection
Code:	100-D-83:3
Names:	100-D-83:3; 100-D-83:3 108-D Acid Addition Facility Pipelines
Code:	100-D-83:4
Names:	100-D-83:4; Additional Treated Water Pipelines
Code:	100-D-83:5
Names:	100-D-83:5; 186-D Acid Neutralizing System Pipelines

Code: 100-D-83:1 **Classification:** Accepted
Names: 100-D-83:1; 183-DR Acid Addition Pipelines **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**
Description: This subsite consists of the pipeline segments associated with the 100-D-77 (183-DR Acid Facility) and includes low pressure steam, sulfuric acid, and lime slurry. The compressed air lines and the above ground piping at the acid storage tanks were excluded. A filtered water line is also present in the trench but was assigned to site 100-D-63.

Sulfuric acid was received by railroad car and stored in two outside aboveground acid storage tanks. The acid was fed by gravity to the 183-DR Head House by maintaining the supply in the Acid Head Tank. The piping between the head tank and the 183-DR Head House was all above grade. Sulfuric Acid was added to the raw water supply before coagulation and filtration to reduce the pH below 7.5 and to aid in the suspension of solids. After filtration, lime was added to the water to raise the pH to between 7.5 and 7.8 (BHI-01771). Lime slurry was returned to the acid trench for neutralization of the waste acid. The sulfuric acid was reportedly purchased from a mining company and contained mercury and lead.

Location: The facility was located on the north side of the 183-DR Head House. The majority of the pipeline segments were contained in the acid pipe trench.

Waste Type: Not Specified

Waste Description: The waste is the pipelines and any contaminated soil associated with leaks from the pipelines.

The SubSite is Part Of:

Code: 100-D-83
Names: 100-D-83; 100D Treated Water Pipelines

Code: 100-D-83:2 **Classification:** Accepted
Names: 100-D-83:2; 183-DR Filter Backwash Connection **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**
Description: This subsite consists of the 183-DR water reducing valve pit and three pipeline segments located 20 m (65.6 feet) northeast of the 183-DR Filter Building.

The backwash water for the 183-DR filters is supplied from the 183-D Pump Room via a 76.2 cm (30 in) carbon steel cross-tie line (100-D-63) to the 183-DR pipe gallery. This line is also used to supplement the 183-DR water requirements including make-up water for the DR Reactor cooling water system (HW-74094, Vol3). A redundant supply of filtered water is provided via a 40.6 cm (16 in) pipeline (100-D-63) from the 105-D filtered water supply. These two lines laid parallel to each other and were joined in the water reducing valve pit. The water reducing valve pit had two drain lines (H-1-9660-DR). One was connected to the cross-tie between the backwash and filtered water lines. It received intermittent discharges during pressure surges between the lines. The other drain line collected water in the bottom of the valve pit from leaking valves or pipe repairs. Both drain lines discharged to the process sewer (100-D-50:7).

Location: Subsite is located at 183-DR water reducing valve pit and three pipeline segments located 20 m (65.6 feet) northeast of the 183-DR Filter Building.

Waste Type: Not Specified
Waste Description: The waste is the pipeline segments, the valve pit, and any contaminated soil associated with leaks from the pipelines.

The SubSite is Part Of:

Code: 100-D-83
Names: 100-D-83; 100D Treated Water Pipelines

Code: 100-D-83:3
Classification: Accepted
Names: 100-D-83:3; 100-D-83:3 108-D Acid Addition Facility Pipelines
Reclassification: None
Type: Product Piping
Start Date:
Status: Inactive
End Date:
Description: This subsite consists of the pipeline segments associated with the 108-D Acid Addition Facility (100-D-101) and includes the sulfuric acid pipeline and a process sewer.

Sulfuric acid was added to the cooling water upstream of the reactor to lower the pH. The acid was received by railroad tank cars and stored in two above ground storage tanks just west of 108-D. The acid was fed to the 105-D building through a 5.08 cm (2 in) steel pipeline by gravity. The acid neutralization pit was used to balance the pH of the waste acid. The pit drained to the process sewer (100-D-31:3) through a 15.24 cm (6 in) vitrified clay pipe.

Location: The facility (100-D-101) was located approximately 10 m (32.8 ft) west of the 108-D Chemical Pump House.

Waste Type: Not Specified
Waste Description: The waste is the pipeline segments, the process sewer, and any contaminated soil associated with leaks from the pipelines.

The SubSite is Part Of:

Code: 100-D-83
Names: 100-D-83; 100D Treated Water Pipelines

Code: 100-D-83:4
Classification: Accepted
Names: 100-D-83:4; Additional Treated Water Pipelines
Reclassification: No Action (7/5/2011)
Type: Product Piping
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of the remaining treated water pipeline segments that were not addressed by 100-D-83:1, 100-D-83:2, 100-D-83:3 and 100-D-83:5. They include piping associated with the sulfuric acid and sodium silicate supply lines, reused water return lines at the 190-D building and an elevated storage tank drain line south of the 105-DR Reactor Building.

Originally, 100-D-83:4 consisted of four areas of pipelines that were used for treated water and chemical transfer; however, Area 1 is now addressed by the 100 D 83:5, 186-D Acid Neutralizing System Pipelines. Area 1 consisted of the 18 pipeline segments located west of the 186-D building that are associated with the acid and lime slurry transfer from tanks to the 120 D-2, 186-D Waste Acid Reservoir. A portion of these pipelines entering the reservoir were removed during 120-D-2 remediation activities. During confirmatory sampling of the 100 D 83:4 subsite, the pipe tunnels were encountered, and it was determined that these segments would be sent to remove, treat, and dispose (RTD). Areas 2, 3, and 4 of the 100 D 83:4 subsite

were addressed by the "No Action" reclassification form and remaining sites verification package.

Area 2 consisted of 19 pipeline segments located southwest of the 190-D Building that were associated with acid and reused water transfer from the 185-D Deaerating Plant to the underwater test facility. It was known prior to confirmatory sampling that many of these pipelines were removed with previous 100-D-30 remediation activities. As confirmatory sampling was conducted, it became apparent that all of these pipelines had been previously removed. The above ground portion of the 100-D-83:4 pipeline that went south from this location had also been previously removed.

Area 3 consisted of the pipeline segment located at the 187-DR elevated water tank that was associated with transporting untreated emergency cooling water to the 105-DR Reactor in the event that normal flow of cooling water was disrupted.

An additional area of pipelines, which included segments in both the 100-D-83:3 and 100-D-83:4 subsites, was located west of the 108-D Building, and is associated with the sulfuric acid and sodium silicate tanks. Area 4 of the 100 D 83:4 subsite consisted of the pipeline sections that ran from the 108-D tanks towards the 105 D Reactor, but will not be recommended for RTD along with the north-trending 100-D-83:3 pipeline sections, because the pipeline was not located during confirmatory sampling, and is believed to have been removed with the 100-D-31:3 remedial activities.

Location: The sulfuric acid and sodium silicate supply tanks are located just outside the southwest corner of the 190-D Building. Another sulfuric acid line runs between the 108-D Acid Storage Tanks and the 105-D Reactor. The reused water return lines are on the southside of the 190-D Building. The 187-DR elevated storage tank is located on the southeast side of the 105-DR Reactor.

Process Description: 190-D Sulfuric Acid Supply

Sulfuric acid was added to lower the pH of reactor coolant and to prepare activated silica from sodium silicate (HW-34095). The original facility included two acid storage tanks outside the southwest corner of building 190-D that were supplied by piping from a rail car. The acid was later supplied by truck (HW-29542, HW-34095). An acid trench ran from under the two storage tanks to building 185-D where it continued the length of the building. The acid trench has also been referred to as the sodium dichromate trench and was assigned to the 100-D-30 waste site. The original two sulfuric acid storage tanks were relocated to building 183-D in January 1957 (HW-35606, HW-48046). The piping inside the trench was removed during remediation of 100-D-30. A new acid storage tank was installed outside the 185-D building in 1962 as part of the half-reactor test. A 7.6 cm (3 in) acid pipeline was installed between the storage tank and an acid unloading station off the railroad spur just north of the electrical substation 151-D. The test (IP-442-A) which began on January 30, 1963 fed sulfuric acid to lower the pH of the process water for one-half of D Reactor (HW-76398). Two pumps were added to the sulfuric acid storage tank a few months later to permit pH adjustment on the other half of the reactor.

190-D Sodium Silicate Supply

A sodium silicate storage tank was installed in November 1964 south of the 190-D Building not far from the acid storage tanks. The sodium silicate tank was used for another half-reactor test conducted between January 15, 1965 and March 11, 1966 (RL-REA-472 and DUN-1293). Sodium silicate was added to inhibit the formation of film on slug and tube surfaces in the reactor.

190-D Reused Water Return

Filtered water was deaerated before going to the 190-D process water storage tanks or to the refrigeration units (189-D) to remove dissolved oxygen and carbon dioxide (while 186-D was in operation). Steam ejectors exhausted the gases from the deaerators to barometric condensers. The barometric condensers discharged the gases to the atmosphere. Raw water was used to operate the barometric condensers. The raw water (condenser water) was heated in the barometric condensers and emptied into the hotwells below. The condenser water overflowed the condenser hot wells into the reuse water reservoir through a 61 cm (24 in) reused water return line (TNX-PG-4). Hot condenser water was also returned to the storage reservoir (182-D) during the winter through a 50.8 cm (20 in) cast iron pipeline (100-D-63).

108-D Acid Supply Line

Sulfuric acid was added to the cooling water upstream of the reactor to lower the pH. The acid was received by railroad tank cars and stored in two above ground storage tanks just west of 108-D. The acid was fed to the 105-D building through a 5.08 cm (2 in) steel pipeline by gravity. The northern portion of this pipeline is assigned to 100-D-83:3.

105-DR Elevated Storage Tank Drain Line

Two elevated storage tanks (187-DR) with a capacity of 1.14 ML (300,000 G) each were erected to serve 105-DR. Both tanks were located in the vicinity of, and on opposite sides of the 105-DR Building. With the exception of the tank supports, which were cylindrical columns, these installations were the same as the 187-D elevated tanks (HW-24800-34). Both tanks had 7.62 cm (3 in) drain lines that emptied a sump in the floor of the valve pit (W-72733). The tank on the northwest side of 105-DR drained to the process sewer (100-D-50:9). The tank on the southeast side drained to the process sewer (100-D-85:2) on the east side of the reactor. It is this second drain line that has been assigned to 100-D-83:4.

Waste Type: Not Specified

Waste The waste is the contaminated piping, concrete, and soil.

Description:

The SubSite is Part Of:

Code: 100-D-83

Names: 100-D-83; 100D Treated Water Pipelines

Code: 100-D-83:5

Classification: Accepted

Names: 100-D-83:5; 186-D Acid Neutralizing System Pipelines

Reclassification: None

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of the treated water pipeline segments that were associated with the 186-D Acid Neutralization System and the reactor cooling water piping between the 190-D building and the 105-D Reactor. The lime neutralization plant (186-D Acid Neutralizing System) is located on the southwest side of the 186-D Demineralization Plant. The reactor cooling water piping is housed in two separate tunnels that converge at the 190-D Building upstream of the 105-D Reactor. Several small diameter water lines are also located in the pipe tunnels, including raw water, filtered water, fire protection water, and potential dichromate-treated process water piping.

Location: The lime neutralization plant (186-D Acid Neutralizing System) is located on the southwest side of the 186-D Demineralization Plant. The reactor cooling water piping is located in two tunnels

that run between the 190-D Building and the 105-D Reactor.

Waste Type: Not Specified

Waste Description: The waste is the pipelines and any contaminated soil associated with leaks from the pipelines.

The SubSite is Part Of:

Code: 100-D-83

Names: 100-D-83; 100D Treated Water Pipelines

Code: 100-D-84

Classification: Accepted

Names: 100-D-84; 100D Sanitary Sewer Pipelines

Reclassification: None

Type: Sanitary Sewer

Start Date:

Status: Inactive

End Date:

Description: The site consist of numerous sanitary sewer pipe segments discovered during the Orphan Site Evaluation process that were not previously identified or addressed within WIDS site database. The entire site includes underground sanitary sewer connections including associated manholes (and associated drains), catch basins, junction boxes and valve control systems or any other below surface associated feature not previously identified. The sanitary sewer pipelines are service connections supporting ancillary and temporary construction facilities and discharge to associated septic systems. The site has been divided into two subsites as follows:

100-D-84:1, Sanitary Sewer Pipelines - Areas 1 and 2

100-D-84:2, Sanitary Sewer Pipelines - Areas 3 and 4

Location: The pipeline segments were observed in various locations throughout the 100-D Area.

Process Description: The pipelines carried non-radioactive liquid sanitary sewage waste.

Related Sites/ Structures: Ancillary support and temporary construction facilities

Waste Type: Sanitary Sewage

Waste Description: The waste consists of pipelines and any contaminated soil associated with leaks from the pipelines. The contaminants of potential concern (COPCs) are unknown.

This Site has the Following SubSites:

Code: 100-D-84:1

Names: 100-D-84:1; 2; Sanitary Sewer Pipelines - Areas 1

Code: 100-D-84:2

Names: 100-D-84:2; Sanitary Sewer Pipelines - Areas 3 and 4

Code: 100-D-84:1

Classification: Accepted

Names: 100-D-84:1; 2; Sanitary Sewer Pipelines - Areas 1

Reclassification: No Action (7/7/2011)

Type: Sanitary Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of piping from two areas (Areas 1 and 2) as defined in the Confirmatory Work Instruction (0100D-WI-G0092). Area 1 includes 23 pipeline segments south of the 105-DR Reactor Building. Area 2 includes seven pipeline segments northwest of the 105-D Reactor

Building.

Location: Area 1 is located approximately 121 m (400 ft) southeast of the 105-DR Reactor. Area 2 is located approximately 150 m (500 ft) northwest of the 105-D Reactor.

Process Description: The pipelines in Area 1 were the result of temporary construction that was put into place to support 1947 modification of 100-D Area Buildings and facilities and provide a water supply for the existing 105-D Pile Building (water supply unrelated to 100-D-84:1) (per HW-24800-34). At the completion of the construction program, all temporary construction was removed with the exception of the Atkinson-Jones and G.E. Warehouses, a sewage disposal system, and the Atkinson-Jones (A.J.) Superintendent's Building. It is believed that all the Area 1 piping drained to the 100-D-50:9 piping system. Confirmatory sampling was conducted at this area in August 2010.

The pipelines in Area 2 were service lines that carried waste from various buildings north of the 105-D reactor to the sanitary sewer main. These buildings included 190-D, 1703-D, 1717-D, 1725-D, 1726-D, 1727-D, 1728-D, and 1729-D. A number of these pipelines were previously removed during remediation of 100-D-31:4 or have been recommended for remove, treat, and dispose (RTD) along with other portions of the 100-D-84:2 subsite. The service line for the 1725-D trailer ran parallel to the 100-D-63 pipelines, and underwent confirmatory sampling in August 2010.

Related Sites/ Structures: The site was related to ancillary support and temporary construction facilities

Waste Type: Not Specified

Waste Description: The waste is the pipelines, pipe contents, and any contaminated soil associated with leaks from the pipelines.

The SubSite is Part Of:

Code: 100-D-84

Names: 100-D-84; 100D Sanitary Sewer Pipelines

Code: 100-D-84:2

Classification: Accepted

Names: 100-D-84:2; Sanitary Sewer Pipelines - Areas 3 and 4

Reclassification: None

Type: Sanitary Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of piping from two areas (Areas 3 and 4) as defined in the Confirmatory Work Instruction (0100D-WI-G0092). Area 3 includes one pipeline segment adjacent to the 107-DR retention basin. Area 4 includes one pipeline segment south of the 181-D River Pump House.

Location: Area 3 is located partially within the post-remediation footprint of the 116-DR-9 (107-DR) Retention Basin and protrudes approximately 40 m (132 ft) southwest from this waste site. Area 4 is east of the 181-D River Pump House.

Process Description: The pipeline in Area 3 was associated with the 1607-D2 Septic Tank. It carried waste from the septic tank to the drainfield. Most (if not all) of the pipeline was likely removed in 1950 when the 107-DR Retention Basin was built. The pipeline in Area 4 was the sanitary sewer line that carried waste from the 181-D River Pump House to the 1607-D5 Septic Tank.

Waste Type: Not Specified

Waste Description: the pipelines.

The SubSite is Part Of:

Code: 100-D-84

Names: 100-D-84; 100D Sanitary Sewer Pipelines

Code: 100-D-85

Classification: Accepted

Names: 100-D-85; 100D Reactor Effluent Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site consists of those underground pipelines that transported radioactive treated and untreated waste water from the 105-DR Reactor Building, and the 1608-DR (132-DR-1) Building to the 107-DR (116-DR-9) Retention Basin. The pipelines are divided into two subsites containing seventeen reactor effluent pipe segments that were not previously identified within an existing WIDS site. Subsite one consists of Additional 107-DR Effluent Pipeline and subsite two consists of Additional 105-DR Reactor Effluent Pipelines. Pipelines that were presumed to have been removed in their entirety because they were located within an existing cleanup verification package (CVP) footprint were excluded. Also included are below grade features associated with the pipeline segment (i.e. manholes, catch basins, junction boxes and valve boxes) not already assigned to another waste site.

Location: The 100-D-85:1 pipeline is located adjacent to the southwest corner of the 107-DR retention basin. The 100-D-85:2 pipelines are located on the east side of the 105-DR reactor.

Process Description: The pipelines were used to dispose of radioactive cooling and waste water from the reactor facility. Two large main effluent pipelines drained cooling water from the 105-DR Reactor. The small effluent pipelines that drained process waste from the sides (east and south) of the 105-DR were joined into a single pipeline that ran to the 132-DR-1 [1608-DR Building] Waste Water Pumping Station or Process Lift Station). The building was a rectangular shaped, two-story, reinforced concrete structure that was half below grade elevation. The purpose of this facility was to pump process effluent to the main effluent pipeline. All but one of the pipeline segments are associated with the 105-DR Reactor discharge to the 1608-DR Lift Pump Station (100-D-85:2). The remaining segment (100-D-85:1) connects the two effluent lines (100-D-48:2 and 100-D-49:2) that empty into the 107-D and 107-DR Retention Basins. The reactor effluent pipelines were used to carry reactor cooling water effluent away from the 105-DR Reactor to the 107-DR Retention Basin (116-DR-9), and to the associated outfalls for final discharge to the Columbia River. Contaminated water from building drains in the reactor and piping at elevations below the elevation of the 107-DR Retention Basin flowed by gravity to the 1608-DR Building (132-DR-1) where it was pumped to the 107-DR Retention Basin.

Related Sites/ Structures: The associated structures include the 105-DR Building, the 132-DR-1 (1608-DR), the 116-DR-9 (107-DR) Retention Basin, the 116-D-5 Outfall and 116-DR-5 Outfall. Other related sites include the 116-DR-1 and 116-DR-2 Trench, the 116-DR-6 Trench, 100-D-48, 100-D Reactor Cooling Water Effluent Underground Pipelines (See Subsites), and 100-D-49, 100-DR Reactor Cooling Water Effluent Underground Pipelines (See Subsites), and 100-D-60, 100D/DR River Effluent Pipelines, 100D River Lines.

Waste Type: Process Effluent

Waste Description: Waste site contaminants of concern (COCs) identified through process knowledge were identified in the Sampling and Analysis Plan for the 105-F and 105-DR Phase III Below Grade Structures and Underlying Soils (SAP), (DOE/RL-99-35). The 105-DR SAP classified the different areas and structures into affected media that were similar in characteristics and

contaminants. The COCs included: americium-241, barium-133, carbon-14, cobalt-60, cesium - 137, europium-152, europium-154, europium-155, nickel-63, plutonium 238, plutonium-239/240, strontium-90, technitium-99, uranium-234, uranium-235, uranium-238, hexavalent chromium, lead, mercury and polychlorinated biphenyls.

The waste consisted of contaminated steel piping, concrete, and soil. Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, diatomaceous earth (a scouring agent), and sodium dichromate. Water pH was maintained at about 7.5, and free chlorine residual was about 0.2 milligrams per liter. Radionuclides discovered at the retention basin during sampling by Dorian and Richards (UNI-946), included: plutonium-238, cesium-134, plutonium 239/240, cesium-137, strontium-90, 155, nickel-63, cobalt-60, and carbon-14.

Post Reactor cooling water effluent had anti corrosive chemical additives including pH adjustment and was radioactive.

This Site has the Following SubSites:

Code: 100-D-85:1

Names: 100-D-85:1; Additional 107-DR Effluent Pipeline

Code: 100-D-85:2

Names: 100-D-85:2; Additional 105-DR Reactor Effluent Pipelines

Code: 100-D-85:1

Classification: Accepted

Names: 100-D-85:1; Additional 107-DR Effluent Pipeline **Reclassification:** No Action (1/27/2010)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package (RSVP-20010-080) for subsite one has documented that the confirmatory sampling data, site evaluations, and supporting documentation demonstrate that this site meets the objectives as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario.

The subsite consisted of a single pipeline segment identified on one historical drawing, H-1-8348, (HEW 1948); however, it was unknown whether it was ever constructed. The pipeline was believed to be approximately 92 m (300 ft) in length, buried at approximately 5 m (16 ft) below ground surface (bgs) and was composed of unknown construction material. If constructed, it was anticipated that the pipe would not have been removed by any previous effluent sewer remedial actions. During excavation of the 100-D-29 waste site, which extended to approximately 4.6 m (15 ft) bgs in this location, there was no indication of a pipeline.

Location: The pipeline is located adjacent to the southwest corner of the 107-DR retention basin.

Waste Type: Soil

Waste Description: The waste is potentially contaminated soil.

Closure Info: The Remaining Sites Verification Package (RSVP-20010-080) for subsite one has documented that the confirmatory sampling data, site evaluations, and supporting documentation demonstrate that this site meets the objectives as established in the Remedial Design

Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario.

The contaminants of potential concern (COPCs) for the subsite were identified based on historical information and process knowledge of the 107-D and 107-DR retention basins. These COPCs included cesium-137, cobalt-60, europium-152, europium-154, alpha and beta emitting radionuclides, hexavalent chromium, total chromium, lead, and mercury.

During confirmatory sampling, initiated and performed in August 2010, undisturbed native soil was encountered at approximately 3 m (6 ft) bgs. Native black sand was encountered until the base of the test pit excavation ended at 4.9 m (16 ft) bgs. No pipe was found. Based on field observations and the confirmatory sampling results, remedial action was determined to be unnecessary.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to submittal to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Different calculation in Appendix C of the RSVP.

The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. Confirmatory sampling activities extended into the deep zone (i.e., greater than 4.6 m [15 ft]); however, no pipe was found and soil sample results indicated no contamination was present in the deep zone. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep-zone soil were not required.

The SubSite is Part Of:

Code: 100-D-85

Names: 100-D-85; 100D Reactor Effluent Pipelines

Code: 100-D-85:2

Classification: Accepted

Names: 100-D-85:2; Additional 105-DR Reactor Effluent Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite two consists of sixteen additional reactor effluent pipe segments that were identified during the WCH D Area Orphan Site Evaluation (OSE). The segments are associated with the 105-DR Reactor that discharged to the 1608-DR Waste Water Pump House. These segments have not been associated as part of an existing WIDS site. There was insufficient information to account for their removal during nearby remedial actions (i.e. 118-DR-2:2 and 100-D-49:4; see CVP-2003-00016).

The pipelines consists of various sizes of cast iron pipe and black steel pipe.

Location: They are located on the east side of the 105-DR reactor.

Process Description: The pipelines carried process water and steam condensate collected from sumps, floor drains, sinks and steam traps on the eastern half of the 105-DR building. The processes water drained

by gravity to the 1608-DR Waste Water Pumping House (132-DR-1) where it was pumped to the main effluent pipeline (100-D-49:3). Many of the 100-D-85:2 pipelines were found to be leaking in 1958 (HW-56911 and HW-57840). Repairs were made and the steam condensate drains were disconnected from the sewers (100-D-85:2) on the north end of the building (HW-58360).

Waste Type: Not Specified

Waste Description: The waste is contaminated steel piping, concrete, and soil.

Description:

The SubSite is Part Of:

Code: 100-D-85

Names: 100-D-85; 100D Reactor Effluent Pipelines

Code: 100-D-86

Classification: Accepted

Names: 100-D-86; 100D Process Sewer Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site encompasses 32 additional process sewer pipelines that were not previously identified within an existing WIDS site. Pipelines that were presumed to have been removed in their entirety because they were located within an existing cleanup verification package (CVP) footprint were excluded. The entire site includes those underground pipelines that transported non-radioactive waste streams from water treatment, reactor, and laboratory facilities. The site includes any other below grade feature associated with the pipeline segment (i.e. manholes, catch basins, junction boxes and valve boxes) not already assigned to another waste site. The site has been divided into three subsites as follows: - 100-D-86:1 105-D Gas Recirculation Pipelines - 100-D-86:2 Additional Process Sewer Pipelines - 100-D-86:3, 105-DR Fan Room Sewer Pipelines

Location: Refer to the subsites for locations of the pipeline segments.

Process Description: The 100-D Orphan Site Evaluation Report (OSR-2006-0001) identified a number of process sewer pipe segments that were not accounted for in another waste site. These pipe segments were upstream of the reactor effluent discharges and were presumed to carry non-radioactive waste streams from various 100-D/DR Area facilities including the 105-D, 105-DR, 190-D, and 190-DR buildings. The pipelines ultimately discharged to the Columbia River through one of the outfalls (1904-D, 1904-DR and 1907-DR).

Related Sites/Structures: The process sewer received effluent from the following facilities: 182-D, 183-D, 183-DR, 184-D, 185-D 186-D, 189-D, 190-D, 105-D, 107-D, 183-DR, the 183-DR Clearwell Area, the 105-DR Reactor Buildings, and the 1907-DR Outfall (100-D-8).

Waste Type: Equipment

Waste Description: Minor amounts of radionuclide, chemical, and mercury contamination may be present in process sewer lines from the 185-D and 189-D/190-D complex as a result of laboratories once located in these now demolished facilities.

The waste consists of steel piping, concrete, and soil (if contaminants are present). The water supply and process sewer drain pipelines at the 100-D and DR Areas provided for the supply and disposal of non-radioactive streams generated in water treatment and water treatment laboratories facilities and powerhouse operations. Known chemical additions to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid,

chlorine, and sodium dichromate. Water pH was maintained near 7.5, free chlorine residual at about 0.2 milligrams per liter, and sodium dichromate was added at a rate of about 2 milligrams per liter. Sodium chloride was also used to regenerate water softeners in both water treatment and powerhouse operations.

This Site has the Following SubSites:

Code: 100-D-86:1

Names: 100-D-86:1; 105-D Gas Recirculation Pipelines

Code: 100-D-86:2

Names: 100-D-86:2; Additional Process Sewer Pipelines

Code: 100-D-86:3

Names: 100-D-86:3; 105-DR Fan Room Sewer Pipelines

Code: 100-D-86:1

Classification: Accepted

Names: 100-D-86:1; 105-D Gas Recirculation Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite one consists of the steel gas recirculation piping in the subsurface tunnel between the former 115-D Gas Recirculation Facility and the 105-D Reactor. Features of the subsite include a pipeline described as a 41 cm (16 in) steel pipe that carried reactor atmosphere to and from the 115-D/DR Gas Recirculation Facility. The second feature is a 320 square meter (3,444 sq ft) pipe tunnel between the 115-D/DR Gas Recirculation Facility and the 105-D Reactor. The tunnel was 2.0 m (6.5 ft) tall with the floor being 3.4 m (11 ft) below the 1st floor of the 115-D/DR Building. It includes the vacuum and pressure seal pit, located north of the 1608-D Lift Station.

Startup of the 105-D Reactor occurred on December 17, 1944. The 105-D Reactor was provided with an inert, non-radioactive gas environment (reactor atmosphere) to remove moisture and foreign gases. The reactor atmosphere was a mixture of helium and carbon dioxide (HW-74094). The initial and make-up reactor atmosphere was supplied from storage tanks (110-D) located west of 115-D/DR Gas Recirculation Facility. The reactor atmosphere was purified in the 115-D/DR Building and returned to the 105-D Reactor. Parallel 41 cm (16 in) steel pipes carried the reactor atmosphere to and from the 115-D/DR Building inside an underground reinforced concrete pipe tunnel (W-73950). Connected to and part of the 105-D tunnel was the vacuum and pressure seal pit, which contained two vacuum seal tanks filled with oil (UNI-4281, W-74375). The tunnel also formed part of the 1608-D Lift Station (132-D -3).

The 115-D/DR Recirculation Facility was also used to purify the reactor atmosphere for 105-DR between 1950 and 1964. The piping contained in the 105-DR pipe tunnel was assigned to the 100-D-50:4 waste site. The 115-D/DR Recirculation Facility and the underground pipe tunnels were no longer used after the 105-D Reactor was shut down on June 26, 1967.

The 115-D/DR Gas Recirculation Facility and adjoining tunnels were decommissioned by UNC Nuclear Industries in 1985 and 1986 using the Allowable Residual Contamination Levels (ARCL) methodology in conjunction with the in situ decommissioning alternative. The vacuum and pressure seal tanks were removed and disposed of as radioactive waste. The tunnel piping and valves were not removed. The tunnel roof was collapsed from the 115-D/DR Building up to but not including the 1608-D Building. The void was filled with rubble and clean fill. Based on survey data and pre-demolition dose assessment, the tunnel piping/valves met in situ decommissioning criteria (UNI-4281).

Characterization of analogous pipelines in the gas recirculation wing of the 105-H Reactor revealed the accumulation of soil sludge containing multiple radionuclides at levels above remedial action goals (CCN 120410). Consequently the two 41 cm (16 in) circulation lines between the 115-D and 105-D buildings were added to the 100-D-86 waste site on October 19, 2008.

Location: The piping is located in the subsurface tunnel between the former 115-D Gas Recirculation Facility and the 105-D Reactor.

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil (if contaminants are present).

The SubSite is Part Of:

Code: 100-D-86

Names: 100-D-86; 100D Process Sewer Pipelines

Code: 100-D-86:2

Classification: Accepted

Names: 100-D-86:2; Additional Process Sewer Pipelines

Reclassification: No Action (5/11/2011)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of an additional 13 process sewer pipelines identified on historical drawings during the 100-D Orphan Site Evaluation (OSE). They include piping associated with the 105-D and 190-DR buildings.

The 105-DR LSFF pipelines have been transferred from the 100-D-86:2 subsite to the 100-D-86:3 subsite, and are recommended for Remove, Treat, and Dispose (RTD).

Location: The pipelines are located adjacent to the related facilities (105-D, 105-DR and 190-DR).

Process Description: 105-D Drainage Piping

The 105-D Building housed a graphite-moderated, water-cooled reactor for the production of weapons grade plutonium. The reactor was located in the process area of the building. Other areas of the building included the control room, fan house, valve pit, work area, storage basin, various offices and equipment storage rooms. Drainage piping was provided throughout the building to carry water from floor drains, steam traps, sumps and trenches to the process sewer (W-71186, W-71617). The process sewer (100-D-31:3) on the west side of 105-D was rerouted when the 190-D Annex was constructed in 1956. A catch basin located outside the northeast corner of the 190-D Annex emptied into the process sewer (100-D-31:3).

190-DR Main Process Water Pump House

The 190-DR Building housed pumps that supplied primary cooling water to the 105-DR Reactor (HW-74094 Vol.3). At 190-DR there were two pump rooms with four pumps in each. The filtered water used for cooling was stored in four large steel storage tanks outside of the 190-DR building. The water was treated with sodium dichromate at the 183-DR Building following filtration prior to entering the storage tanks.

Waste Type: Not Specified

Waste Description: No waste was observed at the site.

Description:

Closure Info: Investigation at the 100-D-86:2 subsite was carried out on November 16 and 17 2010. Test pits

were excavated at six locations. The purpose of each test pit was to determine if process sewer segments associated with the 100-D-86:2 subsite were present in any location.

Test pit 1 (N 151287, E 573725) was excavated to a total depth of 6 m (19 ft) below ground surface (bgs) attempting to access a pipeline associated with the 105-DR Large Sodium Fire Facility (LSFF). Because no pipeline was found in this test pit, an additional test pit was excavated to 6 m (19 ft) bgs at an alternate location (WSP coordinates N 151275, E 573725). Because a pipeline was found at the alternate test pit location, the entire test pit 1 area was sent to RTD, including the 36 m (120 ft) of pipeline that extends from this location to the south. Approximately 17 m (55 ft) of pipeline in the area south of the test pit is in the shallow zone, at a depth of approximately 3 m (9 ft). The test pit 1 area was transferred to the 100-D-86:3 subsite for RTD.

Test pit 2 (N 151189, E 573551) was excavated to a total depth of 1.2 m (4 ft) bgs, attempting to access the center of a north-south-trending pipeline shown approximately 15 m (50 ft) to the east of the 190-DR pump house and west of the valve house test pits 1 and 2 on a temporary drawing. Because the pipeline segment was not found in this test pit, it is concluded that the segment was not present because the pipeline was identified on a temporary piping drawing as being located inside a shallow trench with only 45 cm (18 in.) of sediment covering.

Test pit 3 (N 151127, E 573543) was excavated to a total depth of 4.6 m (15 ft) bgs to access the corner of a 20- to 61-cm (8- to 24-in.) steel discharge pipeline. No pipeline was found. The pipeline is concluded to have been removed with demolition of the 190-DR pump house.

Test pit 4 (N 151622, E 573697) was believed to be the location of a manhole connecting to the 100-D-31:3 subsite and was to be excavated to a maximum depth of 4.6 m (15 ft) bgs. However, the test pit 4 location was determined to be within the excavation boundary of the 100-D-31:4 subsite, which was at a depth of 5.4 m (18 ft) bgs. Therefore, no excavation was necessary to determine that there was no manhole at this location.

Test pit 5 (N 151592, E 573698) was excavated to a maximum depth of 4.6 m (15 ft) bgs, attempting to access a 91-cm (36-in.)-diameter manhole associated with the 190-D building annex. However, only miscellaneous debris was found during the excavation. This miscellaneous debris included rebar, pieces of concrete, a piece of sheet metal, and a section of conduit. Due to the non-hazardous nature of this debris, the material was backfilled into the test pit when excavation was completed. It was concluded that the manhole and associated piping had been previously removed during demolition of the 190-D building annex.

Test pit 6 (N 151036, E 573549) was excavated to a maximum depth of 4.6 m (15 ft) bgs to access a 30-cm (12-in.)-diameter drain shown on historical drawings to run north-south and connect with the 100-D-50:1 sewer pipelines. However, no pipeline was found and it is concluded that it was never constructed.

The SubSite is Part Of:

Code: 100-D-86

Names: 100-D-86; 100D Process Sewer Pipelines

Code: 100-D-86:3

Classification: Accepted

Names: 100-D-86:3; 105-DR Fan Room Sewer Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site consists of process sewer pipelines that received waste from the 105-DR Fan Room

floor drains and condensate. The 105-DR LSFF pipelines have been transferred from the 100-D-86:2 subsite to the 100-D-86:3 subsite, and are recommended for Remove, Treat, and Dispose (RTD).

Location: The pipelines are located on the west side of the 105-DR Fan Room.

Process Description: The 105-DR Building housed a graphite-moderated, water-cooled reactor for the production of weapons grade plutonium. The fan room housed the main blowers, heaters and air-filters (HAN-10970 Vol. 3). Air was supplied to the 105 Building by two separate supply systems. These supply systems conditioned the air and distributed it to a particular section of the building. The ventilation air supplied to the building spaces outside the confinement zone was exhausted to the atmosphere through roof ventilators. The ventilation air supplied to spaces in the confinement zone was collected by exhaust ducts which discharged into the exhaust tunnel (HW-74094 Vol. 3). The air in the exhaust tunnel flowed to the exhaust fans in the fan room. At the exhaust fans, the exhaust air became pressurized and was exhausted through an aboveground concrete duct which ran to the base of the 200-foot exhaust stack (116-DR). Originally the ventilation air was released directly to the 116-DR stack. In 1960, air filtering systems (117-DR) were added to minimize the release of radioactive matter (WHC-SD-EN-TI-181).

Waste Type: Not Specified

Waste Description: The waste consists of steel piping, concrete, and soil (if contaminants are present).

The SubSite is Part Of:

Code: 100-D-86

Names: 100-D-86; 100D Process Sewer Pipelines

Code: 100-D-87

Classification: Accepted

Names: 100-D-87; Spill Near Railroad Car Spot

Reclassification: No Action (1/6/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The waste site consists of a suspected unplanned release of liquid near the acid railroad tank car spot. The spill was photographed on January 1, 1945, liquid was present on the surface of the ground north of the railroad car spot on track "B". The only documentation identifying the spill were construction drawings H-1-281, W-74157 and W71800. The drawings indicate that a 45 centimeters (18 inches) tile is buried in the ground at the car spot. The car spot contained two transfer pumps and two 7.6 centimeters (3 inches) diameter pipelines. The pipelines transported acid to the acid tanks at the 186-D and 185-D Buildings. There were six acid tanks on the west side of the 186-D Building and two on the south side of the 185-D Building.

Location: The railroad car spot was located between the 186-D and 189-D Buildings.

Process Description: The car spot was used to unload acid that was transported through overhead lines to storage tanks at the 186-D and 190-D Buildings.

Related Sites/Structures: The 186-D and 190-D Buildings and waste sites 100-D-63 (clean water pipelines) is about 20 m (65 ft) northeast of 100-D-2 (lead sheet covering a concrete pad).

Waste Type: Chemical Release

Waste Description: The spill was probably acid associated with the car spot unloading facility. The contaminant of potential concern was acid.

Closure Info: that confirmatory sampling results support a reclassification of this site to No Action. The current site conditions have met the remedial action objectives (RA0s) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

The contaminants of potential concern (COPCs) for the 100-D-87 waste site were identified based on process knowledge of the 186-D and 195/190-D facilities, the 120-D-2 waste site COPCs, and the River Corridor Closure Stewardship Information System report. Sulfate was included as a COPC because of the use of sulfuric acid in testing the demineralization process at the 186-D building. Mercury was included because evidence of mercury-contaminated sulfuric acid has been found at other waste sites in the 100 Area. The 185-D building carried out processes involving the preparation of sodium dichromate; therefore, hexavalent chromium and total chromium were considered COPCs.

No staining, anomalies, or linear features were encountered during confirmatory sampling. Analysis was performed to evaluate if contamination associated with the potential spill was present. Field surveys for radiological contamination and volatile organic compounds were also conducted during sampling. Confirmatory sampling indicated that environmental contamination was not present at this waste site. Based on confirmatory sampling at the site, remedial action was determined to be unnecessary.

The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and are presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Different (RPD) calculation in Appendix B.

These results show that residual contaminant concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The waste site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code: 100-D-88	Classification: Accepted
Names: 100-D-88; 100D Miscellaneous Pipelines	Reclassification: No Action (5/16/2011)
Type: Product Piping	Start Date:
Status: Inactive	End Date:
Description: The site consists of 27 underground pipeline segments observed during the WCH Orphan Site's Evaluation. The additional pipeline segments include associated manholes (with associated drains), catch basins, junction boxes, valve control systems or any other below surface related feature.	
Location: The pipeline segments are located throughout the 100-D Area.	
Process Description: Miscellaneous pipeline segments are associated within unique building processes; boiler fuel delivery systems, elevator shafts, air conditioning systems, railcar/truck delivery spots, equipment drains, storage tanks pressure relief systems, compressor blowdowns and potential contact steam system condensate returns drained to below ground features.	

Related Sites/ The 105DR, 185D, 184DA, 183D, 190D and elevated tank 187-DR1

Structures:

Closure Info: Focused samples from eight test pit locations were planned to be used to evaluate the 100-D-88 waste site. However, upon preparation for confirmatory sampling, it was determined that test pit 7 could not be excavated, due to the presence of an internet tower in this location. The tower, which includes a base in the location of the french drain, indicates that this drain no longer exists due to the presence of guy wires at approximately 2 to 2.5 m (6 to 8 ft) below ground surface. Therefore, sampling was not necessary to make a No Action decision for this portion of the 100-D-88 waste site. Test pits were excavated at the remaining seven locations of the Pipeline segments of the 100-D-88 waste site to collect samples or verify removal of the associated piping. These seven test pits are adequate to represent the 100-D-88 waste site, as the absence of a french drain at the test pit 7 location changes the condition of the waste site such that seven sampling locations, instead of eight, are adequate to evaluate the waste site. All radiological and volatile organic vapor readings in the field were less than detectable.

Code: 100-D-90	Classification: Accepted
Names: 100-D-90; 100-D/DR Out of Service Transformers	Reclassification: No Action (1/6/2011)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:

Description: The site consists of the soil located below two transformers sitting on railroad ties.

Location: The transformers had been located 18 meters (60 feet) west of the 183-D Facility next to the paved two lane road. The transformers and railroad ties were removed and staged in the 200 Area laydown yard. Although the waste site had been originally described as an unplanned release, it became apparent through further research that a known release had not occurred.

Process Description: There is no process associated with this site. The site is only the staging area for two transformers which may have originated from the 190-DR facility.

Related Sites/Structures: These transformers are possibly associated with the 190-DR Building. The transformers were removed from service in 2003 and drained by the Fluor Electrical Utilities group in July 2005.

Waste Type: Soil

Waste Description: The transformers contained oil with <499 ppm of PCBs (per Fluor Electrical Utilities). The site has the potential to contain PCBs. However, there was no evidence of staining associated with this site, therefore, there are no contaminants of potential concern.

Closure Info: The Remaining Sites Verification Package for the 100-D-90, 100-D/DR Out-of-Service Transformers, RSVP-2009-050, has documented that confirmatory sampling data, site evaluations, and supporting documentation support a reclassification to No Action. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 1004U-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario.

The soil exhibited no visible staining, and the transformers and railroad ties had since been removed and staged in the 200 Area laydown yard. Although the waste site had been originally described as an unplanned release, it became apparent through further research that a known release had not occurred.

Because analytical documentation on the drained fluid from the transformers was not available, confirmatory sampling was performed in August 2010.

The transformers were recorded using WIDS because this is the only process utilized for tracking purposes. Thus, PCBs were determined to be the only COPC for the site, based on professional judgment and other transformer COPCs. PCBs were analyzed for this waste site using EPA Method 8082.

The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code:	100-D-96	Classification:	Accepted
Names:	100-D-96; 100-D/DR Additional French Drains	Reclassification:	None
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consists of eight components (seven 100-D and 100-DR area French Drains and one dry well) and their underlying soils. These French Drains received steam condensate from non-radioactive buildings.		
Process Description:	The 184-D Power House boiler facility supplied high pressure steam to all D area buildings for heating purposes through an above grade pipeline system. The boiler facility utilized clean filtered water from the 183-D filter building. The steam supply was used in a non-contact radial heating system and remained uncontaminated. The steam transport process utilized a high pressure supply line and a low pressure return or discharge line. It was necessary to bleed both the supply and return lines to prevent condensate build up. The condensate was typically blown off from the above grade piping system into a below grade covered French Drain as a safety precaution as illustrated on construction drawing H-1-9644-DR and H-1-15203. Construction drawings H-1-9640-DR thru H-1-9645-DR of the outside steam distribution system indicate steam trap locations (French Drains) and typical construction.		

Code:	100-D-97	Classification:	Accepted
Names:	100-D-97; 184DA; 184-DA 500-Gallon Fuel Tank	Reclassification:	None
Type:	Storage Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	This site consisted of an underground storage tank (UST), associated fuel oil supply (FOS), fuel oil return (FOR) piping [1.27 centimeter (1.5 inch) diameter] and the underlying soil. It is believed that these items were removed in 1985/1986 as part of the 100-D/DR general demolition efforts. The area now appears as a cobble-covered field with vegetation.		
Location:	The tank was located in the 100-D Area, west of the southeast corner of the 184-DA Boiler House site, approximately 1 meter (3 feet) near the southeast corner of the 184-DA building, 184-DA Boiler Oil Tank., south of Palouse Street and 165 meters (540 feet) east of Puget Avenue.		
Process	The UST was a 500 gallon fuel oil tank which supplied fuel to the 184-DA Steam Generating		

Description: Facility. The 184-DA Building was a metal building constructed about 1968 and was designed as a steam generating facility. The facility contained a steam generator, fuel oil storage tank [94,600 Liters (25,000 gallons)], fuel oil pump, deaerator, water softener, chemical treatment, fuel tank, steam separator, heater, diesel generator, liquid level gauges, and steam flow meter. The 500 gallon fuel oil tank was located near the southeast corner of the 184-DA Building. The tank was installed about 1968 under Project No. Dap-515 and buried two feet below grade. The equipment number was K1-7-1 the tank had a 2 inch fill connection and a 2 inch sounding connection. Within the floor of the 184-DA Building were three trenches that contained pipelines used to transport fuel oil and vent lines associated with the fuel oil tanks. In 1973, the building was assigned to Atlantic Richfield Hanford Company (ARHCO), it contained a package boiler which was used to provide steam heat for the occupied facilities in 100-D Area. In case of electrical power outage, the boiler also provided steam for turbine driven pumps used to provide fire and service water to the 100-D facilities. The facility was required to remain in service as long as the area was occupied. It is assumed that the tank was removed during the demolition of the 184-DA Building.

Related Sites/ Structures: The UST (100-D-9) supplied fuel oil to the 184 DA Steam Generating Facility which provided steam to the 183-D and other 100-D facilities.

Code: 100-D-98	Classification: Accepted
Names: 100-D-98; 152D Substations	Reclassification: None
Type: Electrical Substation	Start Date:
Status: Inactive	End Date:

Description: This site consists of two active (C4S17 and 152-D1-D) and nine former electrical substations and underlying soil. During the Orphan Sites Evaluation (OSE) no staining or evidence of a substation was observed at the mapped locations of the nine former substations. They each had a primary voltage of 13.8 KV and a secondary voltage ranging from 110 V to 2300 KV. Each was an open, wooden pole structure surrounded by a picket fence and contained transformers at or near ground level, set on concrete pads. Excluded from the site were an additional six distribution substations known to have been associated with buildings 107-D, 108-D, 115-D, 183-D, 1717-D, and 1720-D. These six could not be located during the OSE field investigation. Each was constructed identical to secondary substations. All had a primary voltage of 2.4 KV, and a secondary voltage ranging from 110 V to 480 V. Information on the exact location of these substations is extremely limited. There was no physical evidence of transformer pads or staining on the ground near the suspect locations. It is assumed that the distribution substations were removed during demolition of the buildings.

Location: The secondary substation locations follow: Substation C4S17, Associated Facility 181-D, Center Coordinates N151718 E572797, Min. Pads 2 Substation 152-D1-D, Associated Facility 182-D, Center Coordinates, N151565 E573202, Min. Pads 2 Substation 152-F1-D, Associated Facility 184-D, Center Coordinates N151872 E573364, Min. Pads 1 Substation 152-H1-D, Associated Facility 186-D Center Coordinates N151568 E573487, Min. Pads 4 Substation 152-B1-D, Associated Facility 185/189-D Center Coordinates N151578 E573553, Min. Pads 3 Substation 152-G1-D, Associated Facility 190-D Center Coordinates N151573 E573679, Min. Pads 6 Substation 152-A1-D, Associated Facility 190-D Center Coordinates N151640 E573655, Min. Pads 6 Substation 152-A2-D-D, Associated Facility 190-D Center Coordinates N151615 E573655, Min. Pads 1 Substation 152-A3-D, Associated Facility 190-D Center Coordinates N151572 E573655, Min. Pads 1 Substation 152-A4-D, Associated Facility 190-D Center Coordinates N151543 E573655, Min. Pads 1 Substation 152-J1-D, Associated Facility 105-D Center Coordinates N151614 E573732, Min. Pads 2

Process Description: The Midway Station, located near the Vernitia Bridge, fed 230KV power to the 31,250KVA

transformers located in the 151-D switchyard. From these transformers, power was transmitted via overhead and underground cables to secondary distribution substations located throughout the 100-D Area. Circuit breakers were also in service to support the switchyard operations. The 151-D Switch House is essentially a one-story building, having a sub-level cable pit equipped with a sump pump. All duct lines originated/terminated at the Switch House. The cable pit is a completely enclosed reinforced concrete pit with floor slab, varying from 0.30 to 0.45 meters (1 to 1.5 feet) in thickness, and with 0.30 meters (1 foot) thick walls. Switchgear is located on the main floor directly above the cable pit. The overall dimensions of the Switch House are 25 meters by 9.3 meters by 8.7 meters (83 feet by 30.5 feet by 28.5 feet.) Beneath the switch yard, and throughout the D/DR area there is an extensive subsurface "highway" of electrical conduits, which may still contain lead and/or asbestos wrapped cable inside "Korduct" lining, all surrounded by reinforced concrete. Korduct is believed to be a transite-like material. These concrete monoliths are up to 1.8 meters by 1.8 meters (6 feet wide by 6 feet deep) and up to 152 meters (500 feet) long per segment, and are buried 0.9- 1.5 meters (3-5feet) below the surface. There are at least 20 major segments in the D/DR area. The segments are connected by mammoth concrete manholes, 2.4 meters by 2.4 meters by 2.4 meters (8 feet by 8 feet by 8 feet high). Each monolith contains up to 2 dozen conduits, each of which may contain 0.6- 12.7 centimeters (2-5 inches) electrical cables. PCB-containing oil was transferred, as needed, from a rail tanker on the railroad spur through over ground hoses and piping to transformers and oil circuit breakers in the yard. The smaller transformers at the secondary and distribution substations were also filled via over ground hoses from oil trucks.

Related Sites/ Structures: The 151-D Primary Substation distributed 13.8KV power to transformers located at the 181-D River Pump House, 182-D Head House, 183-D Filter House, 184-D Power House, 186-D Water Treatment Plant, 190-D Pump House, and 105-D Reactor, which in turn distributed power to associated facilities.

Waste Type: Transformer

Waste Description: The two active substations (C4S17 and 152-D1-D) will be evaluated upon termination of operations. There was no documented waste information found during the OSE historical evaluation. There were no contaminants of potential concern assigned to the sites discovered during historical evaluation.

Code: 100-D-99

Classification: Accepted

Names: 100-D-99; Two Suspect Features Identified by Ground Penetrating Radar

Reclassification: None

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: The site consists of a septic system and the underlying soils.

Location: This site is located between the 1716-D Maintenance Garage and the 1719-D First Aid Station.

Process Description: During construction of the Hanford Engineer Works, temporary sewer lines and septic tanks were installed for the disposal of non-radioactive liquid sanitary sewage waste.

Related Sites/ Structures: The septic system supported the 1716-D Maintenance Garage and the 1719-D First Aid Station.

Waste Type: Sanitary Sewage

Waste Description: Transfer of non-radioactive liquid sanitary sewage waste.

Code: 100-D-101 **Classification:** Accepted
Names: 100-D-101; 108-D Acid Pit and Sump; 108-D **Reclassification:** None
Car Spot; 108-D Sodium Silicate Sump; 108-D
Storage Tanks; Miscellaneous Structures
Type: Sump **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of four chemical storage tanks, an acid neutralization pit/sump, a sodium silicate sump, two sets of pumps, and a car spot. All located to the west of the 108-D building. Two chemicals were stored near 108-D, sulfuric acid and sodium silicate, which each had its own set of two large storage tanks. Additionally, each chemical had a set of two pumps for unloading solution out of railroad tank cars. An acid neutralization pit/sump was located underneath the acid storage tanks, while another sump was placed near the sodium silicate tanks. A car spot and railroad line passed through the site for delivering the solutions.

Location: The site was located west of the 108-D building.

Process Description: Two elevated sulfuric acid storage tanks were located in the site footprint. Each measured 2.7 by 11.0 m (9 by 36 ft) and was oriented horizontally, at a height of approximately 5 m off the ground (HAN-10970, HW-75014). A set of wooden stairs allowed workers to reach the top of the tanks (HW-74549). To fill the tanks, two self-priming unloading pumps were situated nearby in a protective shed. The capacity of each pump was 50 gpm and they were run by 440 V electric motors. These storage tanks were removed sometime prior to 1952. The two sulfuric acid tanks were located west of the 108-D building at (E573738.62886, N151772.25873) and (E573738.70631, N151768.65750). The separation between the two tanks was .9 m (3 ft). The pumps for sulfuric acid were located at (E573744.09046, N151775.85017), off the northeast corner of the tanks. The sulfuric acid brought in by railroad tank cars, was delivered to the storage tanks, which were filled with 68-70% sulfuric acid. From the storage tanks, a gravity-flow line supplied the 105-D building with acid for controlling the pH of process water. In addition, equipment was set up in the 108-D building for diluting the sulfuric acid. Pumps with suction piping were used to transport acid from the tanks into the 108-D building. Historic photographs indicate that the sulfuric acid tanks were removed before 1952. The 108-D Acid Neutralization Pit and Sump was located underground beneath the sulfuric acid storage tanks on the west side of the 108-D building. The pit was covered with a removable 1.4 m (4 ft, 8 in) wooden plank. A 10.1 cm (4 in) overflow pipe was attached to the south end of the pit, which connected to the water treatment process sewer. The northern portion of the pit was separated from the rest by a brick barrier and was used as a sump. Two 5.1 cm (2 in) inlet pipes inside an underground wooden box structure brought acidic solution into the sump. In addition, there were two 10.1 cm (4 in) drain pipes extending from the west ends of the acid tanks, with another 10.1 cm (4 in) drain line originating from the pump shed. Another overflow drain line connected from the center of the tanks. All of these overflow lines connected to the sump portion of the pit. All piping was above ground, except the 5.1 cm (2 in) inlet lines in the wooden box and the sewer drain line. The 108-D Acid Pit was located to the west of the 108-D building, directly underneath the elevated sulfuric acid tanks, at coordinates (E573736.72, N151770.62). It is also in the sidewall of 100-D-31. The Acid Pit consisted of two layers of acid-proof brick. The bottom layer was laid in asphalt, while the top layer was laid in Tegal Vitrabond. Joints were sealed with Vitrabond. The acid pit (excluding the sump portion) had an additional third layer, which was coated with 10.1 cm (4 in) of asphalt (HW-74807). The acid pit was used to safely neutralize acidic solutions. In particular, piping was in place to transfer acid that overflowed or leaked out of the tanks and pumps during the unloading process. Also, by using valves located both near the pumps and near the acid pit, acid could be released directly into the pit. According to drawing HW-74807, only sulfuric acid was supposed to be used in the acid pit. Two elevated sodium silicate tanks were located just north of the sulfuric acid tanks. Each of these measured 6.1 m (20 ft) in diameter and 4.6 m (15 ft) in height, and had an internal steam heating coil system (HAN-10970, SPEC HW-2036). The tanks were removed prior to

1970 (photograph 53352-5CN) and most of the soil underneath them falls within the cleanup footprint for 100-D-56. According to HAN-10970, the pumps used for unloading sodium silicate from the car spot were identical to those used for the sulfuric acid (50 gpm flow rate). However, SPEC-HW-2036 states instead that there were two 100 gpm pumps. These pumps were also used to transfer sodium silicate into the 108-D building and were housed in a wooden shed with a radiator (SPEC-HW-2036, HW-74550). The tanks were located to the west of the 108-D building and north of the sulfuric acid tanks at (E573737.28065, N151780.51975) and (E573737.28309, N151787.92000). The two tanks were separated by 1.5 m (5 ft). The sodium silicate pumps were located at (E573744.18968, N151787.46223), east of the northernmost storage tank. Both tanks are partially located in the sidewall of 100-D-56. Sodium silicate was received in railroad tank cars and moved to the two storage tanks by using the nearby pumps. Those same pumps were then used to transfer the silicate into the 108-D building, where it was diluted with process water. This weaker solution was later transported to 185-D for process water treatment (SPEC-HW-2036). The 108-D Sodium Silicate Sump was constructed in 1954, as part of a series of modifications to the water treatment system (HW-29542). It was located just north of the sodium silicate pumps, and received liquid from the process sewer. The underground structure was fed by a single 15 cm (6 in) vitrified clay pipe that drained the sump (H-1-5239). The sump was covered by a steel grating. The 108-D Sodium Silicate Sump was built as part of the Alum-Activated Silica Water Treatment Facilities project in 1954. The purpose of the sump was to address the issue of potential spills during the unloading and transfer of sodium silicate solution. However, there is no indication of any drains extending to it from the sodium silicate tanks or pumps, so it is not clear how the sump addressed this issue. The sump drained to the process sewer (H-1-5239). The 108-D Sodium Silicate Sump was just north of the sodium silicate pumps, at (E573743.77016, N151790.73936) between the sulfuric acid tanks and the sodium silicate tanks, and was used for unloading liquids. It included a platform for unloading chemicals, stairs to reach the top of railroad tank cars, flexible hoses to unload liquids, and a safety shower (HW-75250). The 108-D Car Spot was used to unload liquid chemicals for the 108-D building and the nearby storage tanks. Using flexible connecting hoses, sodium silicate solution and sulfuric acid were pumped out of railcars and into the storage tanks. A second car spot, 100-D-73, was used to unload solids and move them into the 108-D building. Among the chemicals transported this way was sodium dichromate.

Waste Type: Soil

Waste Description: Site contaminants of potential concern include mercury, lead, sodium silicate, and sodium dichromate. It is possible that contaminants leaked into the soil during the lifetime of the sulfuric acid storage tanks and the associated components, particularly prior to 1954 when there was no sump. Resulting in potentially high concentrations of heavy metals such as mercury and lead. In addition, during the process of filling the tanks or pumping it into the 108-D building, acid may have spilled into the soil elsewhere in the site footprint.

Near the southern portion of the site boundary, sodium dichromate may have been released as it was being unloaded in the nearby car spot, which is included in the adjacent waste site 100-D-73.

Code: 100-D-102	Classification: Accepted
Names: 100-D-102; Suspect Effluent Leak Adjacent to 107-DR Basin	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site code 100-D-102 was assigned to this site in April 2009. It was created to address potential contamination observed in a historical photograph outside the boundaries of waste site	

100-D-29.

The site was an irregular shaped feature visible in a 1962 aerial photograph (10974-PHOTO). The surface of the site has been re-graded many times and is no longer discernible from the surrounding area.

Location: The site is located immediately to the southwest corner of 107-DR retention basin.

Release Description: The first known inventory of radioactive releases to the ground in the 100-D/DR area is contained in the January 29, 1953 report titled "Unconfined Underground Radioactive Waste and Contamination" (HW-27337) by H.G. Ruppert. The report identifies five locations near the retention basins. These sites are later assigned the following waste site codes: 100-D-29, 116-DR-1&2, UPR-100-D-2, UPR-100-D-3 and UPR-100-D-4. A memo was issued with corrections to this report on July 16, 1953 (HW-28737). The corrections to the report did not affect any of the releases near the 107-D/DR retention basins.

Another inventory was made in October 1954 (HW-33305). The report listed those facilities that used for disposal of radioactive liquid wastes. It did not contain unplanned radioactive releases (as was done previously in HW-27337). The report listed just two locations (100-D-29 and 116-DR-1&2) near the 107-D/DR retention basins.

The inventory was updated again in May 1956 (HW-43121). It contained six additional disposal facilities from that reported in HW-33305. The new facilities were later assigned the following waste site codes: 100-D-4, 100-D-18, 100-D-19, 100-D-20, 100-D-21 and 100-D-22.

A comprehensive listing of underground radioactive contamination including planned and unplanned releases was issued again in November 1956 (HW-46715). It contained all of the waste sites mentioned previously but did not add any new ones in the vicinity of the 107-D/DR retention basins.

Hanford drawing (H-1-4046) which shows the underground radioactive waste sites in the 100-D/DR Area was revised in June 1964. It shows many (but not all) of the waste sites previously discussed. The drawing depicts two effluent leaks south of 107-DR. One of these is consistent with the location of 100-D-29. The shape and location was used for the remediation design of the 100-D-29 waste site. The other leak identified on the drawing did not correspond to any of the previously reported releases. This location was subsequently assigned to the UPR-100-D-5 waste site.

A report was issued in November 1967, following the deactivation of the 105-D/DR reactors (DUN-3063). This report mentioned the two retention basins and the sludge buried from 107-DR (100-D-22). It did not reveal any new information related to releases near the 107-D/DR retention basins.

Process Description: The 107-DR retention basin (116-DR-9) received cooling water effluent from the 105-DR Reactor, and reactor floor wastes from the 1608-DR Waste Water Pump House. The cooling water was held in the basin for as long as operating time would permit, allowing the water to thermally cool and for short-lived radionuclides to decay. The water was then discharged to the center of the river via the outfall structures and associated pipelines. The basin experienced several unplanned liquid releases during its lifetime.

The irregular shaped feature visible in the 1962 aerial photograph (10974-PHOTO) is suspected to be an effluent leak. There are several planned and unplanned releases of cooling water effluent reported near the 107-D and 107-DR retention basins. A number of reports published during the operation of the 100-D/DR Area detail the releases. Previously identified releases have been documented as 100-D-4, Sludge Trench #5 , 100-D-18, Sludge Trench #4, 100-D-19,

Sludge Trench #6, 100-D-20, Sludge Trench #3, 100-D-21, Sludge Trench #2, 100-D-22, Sludge Trench #1, 100-D-29, Effluent Leak #2, 100-D-48, 100-D Reactor Cooling Water Effluent Underground Pipelines, 100-D-49, 100-DR Reactor Cooling Water Effluent Underground Pipelines, 116-D-7, 107-D Retention Basin, 116-DR-1&2, 107-DR Liquid Waste Disposal Trench #1, 116-DR-9, 107-DR Retention Basin, UPR-100-D-2, Effluent Line Leak #1, UPR-100-D-3, Effluent Line Leak #3, UPR-100-D-4, 107-D Basin Leaks, UPR-100-D-5, Effluent Line Leak #4 waste sites. The footprint of the waste site 100-D-102 falls outside the footprints of all the other waste sites previously identified. The original drawings which were used to define the boundary of the waste sites were imprecise. It is possible that the aerial photograph shows the actual footprint of a waste site that was previously identified and located using the less precise historical drawings.

Related Sites/ Structures: The waste sites located near and associated with the retention basins include the following WIDS site codes:
100-D-4, Sludge Trench #5 , 100-D-18, Sludge Trench #4, 100-D-19, Sludge Trench #6, 100-D-20, Sludge Trench #3, 100-D-21, Sludge Trench #2, 100-D-22, Sludge Trench #1, 100-D-29, Effluent Leak #2, 100-D-48, 100-D Reactor Cooling Water Effluent Underground Pipelines, 100-D-49, 100-DR Reactor Cooling Water Effluent Underground Pipelines, 116-D-7, 107-D Retention Basin, 116-DR-1&2, 107-DR Liquid Waste Disposal Trench #1, 116-DR-9, 107-DR Retention Basin, UPR-100-D-2, Effluent Line Leak #1, UPR-100-D-3, Effluent Line Leak #3, UPR-100-D-4, 107-D Basin Leaks, UPR-100-D-5, Effluent Line Leak #4.

Waste Type: Process Effluent

Waste Description: Contaminants of potential concern (COPCs) include: Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Pu-238, Pu-239, Pu-241, Sr-90, U-238, Am-241, Sr-90, arsenic, chromium, lead, and zinc and should be the same as those for the 107-D/DR Retention Basins. The waste is contaminated soil from an unplanned release of process effluent.

Code: 100-D-103 **Classification:** Accepted

Names: 100-D-103; Suspected Trench and French Drain from 116-D-8 Cask Pad **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: WCH investigation identified a surface feature resembling a trench, it is visible in a December 1949 aerial photograph running south from the 116-D-8 Cask Pad.

Location: The area is located at approximately (E) 573,698, (N) 151,250.

Code: 100-D-104 **Classification:** Accepted

Names: 100-D-104; Unplanned Release near 185-D Sodium Dichromate Storage Tank and Acid Neutralization French Drain **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of stained soil near the former sodium dichromate storage tank and acid french drain outside of building 185-D. The stain encompasses an area of 910 square meters (9,792 square feet). The site geometry was established by drawing an arbitrary polygon around an existing excavation to a depth of 6.0 m (19.6 ft) that contained stained soil with an elevated concentration of hexavalent chromium.

Location: The centroid of the stain is located at approximately (E) 573.586.7 (N) 151.521.7.

Code: 116-D-1A	Classification: Accepted
Names: 116-D-1A; 105-D Storage Basin Trench #1	Reclassification: Interim Closed Out (3/5/2001)
Type: Trench	Start Date: 1/1/1947
Status: Inactive	End Date: 1/1/1952

Description: The site has been remediated and closed out.

Location: The 116-D-1A/116-D-1B site is located within the 100-DR-1 Operable Unit in the 100 Areas of the Hanford Site in southeastern Washington State. The 116-D-1A site is located approximately 30 meters (100 feet) east of the 105-D Reactor Building.

Process Description: This trench was 40 meters (130 feet) by 3 meters (10 feet) by 1.8 meters (6 feet) deep. It was used from 1947 to 1952 and received contaminated water and sludge from the 118-D-6 Fuel Storage Basin. The 116-D-1B Trench was constructed in 1953 to replace the 116-D-1A Trench. This trench was 30 meters (100 feet) by 3 meters (10 feet) by 5 meters (15 feet) deep and received contaminated water and sludge from the 118-D-6 Fuel Storage Basin from 1953 to 1967. The 100-D-46 site is a burial ground that received radioactive and nonradioactive solid wastes and construction debris generated from various reactor modifications from the 105-D Reactor building after 1967. The 100-D-46 site was co-located with the 116-D-1A and 116-D-1B sites and was remediated along with these sites and their associated plumes.

Waste Type: Process Effluent

Waste Description: The site received contaminated water and sludge from 118-D-6 Fuel Storage Basin. Records also show approximately 1,000 kilograms (1.1 tons) of sodium dichromate was disposed in this trench.

Closure Info: 116-D-1A, 116-D-1B and 100-D-46 were addressed as a group. The information below documents information for the group of sites.

The 116-D-1A/116-D-1B Storage Basin Trenches and the 100-D-46 Burial Ground were remediated together, with the documentation presented in the same Cleanup Verification Package (CVP) and all sites are referred to as the 116-D-1A/116-D-1B site.

Remedial action objectives (RAOs) and goals (RAGs) for the 116-D-1A/116-D-1B site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995) and the Remedial Design Report/Remedial Action Work Plan (RDR/RAWP) (DOE/RL-96-17).

The selected remedial action for the 116-D-1A/116-D-1B site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, RAGs were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern (COPCs). Waste site COCs and COPCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22).

The COCs for this site were cesium-137, cobalt-60, europium-152, europium-154, plutonium-

239/240, strontium-90, uranium-238, americium-241, and hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 2,648 square meters (28,470 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 10,987 metric tons (12,111 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF).

The CVP demonstrated that remedial action at the 116-D-1A/116-D-1B site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 116-D-A/116-D-1B site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-D-1A/116-D-1B site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF, that residual COC concentrations in the shallow zone will support future land uses that can be represented (or bounded) by rural-residential scenario, and that residual COC concentrations throughout the site are protective of groundwater and the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The 116-D-1A/116-D-1B site is verified to be remediated in accordance with the ROD.

Code: 116-D-1B	Classification: Accepted
Names: 116-D-1B; 105-D Storage Basin Trench #2	Reclassification: Interim Closed Out (3/5/2001)
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1967

Description: The site has been remediated and closed out.

Location: The trench is located approximately 30 meters (100 feet) northeast of the 105-D Reactor.

Process Description: The 116-D-1B Trench was constructed in 1953 to replace the 116-D-1A Trench. This trench was 30 meters (100 feet) by 3 meters (10 feet) by 5 meters (15 feet) deep and received contaminated water and sludge from the 118-D-6 Fuel Storage Basin from 1953 to 1967.

Waste Type: Process Effluent

Waste Description: The site received contaminated water and sludge from 105-D Fuel Storage Basin and liquid waste from the decontamination of fuel spacers and reactor hardware. Records show approximately 700 kilograms (0.8 tons) of sodium dichromate, 2000 kilograms (2.2 tons) of sodium oxybate and 2000 kilograms (2.2 tons) of sodium sulfate were also disposed in this trench.

Closure Info: 116-D-1A, 116-D-1B and 100-D-46 were addressed as a group. The information below documents information for the group of sites.

The 116-D-1A/116-D-1B Storage Basin Trenches and the 100-D-46 Burial Ground were remediated together, with the documentation presented in the same Cleanup Verification Package (CVP) and all sites are referred to as the 116-D-1A/116-D-1B site.

Remedial action objectives (RAOs) and goals (RAGs) for the 116-D-1A/116-D-1B site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995) and

the Remedial Design Report/Remedial Action Work Plan (RDR/RAWP) (DOE/RL-96-17).

The selected remedial action for the 116-D-1A/116-D-1B site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, RAGs were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern (COPCs). Waste site COCs and COPCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22).

The COCs for this site were cesium-137, cobalt-60, europium-152, europium-154, plutonium-239/240, strontium-90, uranium-238, americium-241, and hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 2,648 square meters (28,470 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 10,987 metric tons (12,111 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF).

The CVP demonstrated that remedial action at the 116-D-1A/116-D-1B site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 116-D-A/116-D-1B site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-D-1A/116-D-1B site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF, that residual COC concentrations in the shallow zone will support future land uses that can be represented (or bounded) by rural-residential scenario, and that residual COC concentrations throughout the site are protective of groundwater and the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The 116-D-1A/116-D-1B site is verified to be remediated in accordance with the ROD.

Code:	116-D-2	Classification:	Accepted
Names:	116-D-2; 116-D-2A; 105-D Pluto Crib	Reclassification:	Interim Closed Out (10/23/2000)
Type:	Crib	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1956
Description:	This site has been closed out. The crib was a 3 meter (10 feet) by 3 meter (10 feet) crib, 3 meters (10 feet) deep. The unit had been shored with railroad ties and filled with sand.		
Location:	The 116-D-2 site was located approximately 920 meters (3,018 feet) from the Columbia River and about 30.5 meters (100 feet) east of the 115-D/DR Gas Treatment Facility (132-D-1).		
Process Description:	The 116-D-2 site was used to isolate coolant flow from process tubes containing ruptured fuel elements until the ruptured fuel could be discharged. A pluto valve was installed on the downstream end of the process tube, connecting the tube to a rubber hose. The coolant then flowed through the rubber hose into the crib. An estimated 4,000 liters (1,000 gallons) of liquid wastes were disposed at the 116-D-2 site, and the known hazardous chemical inventory included an estimated 0.004 kilograms (0.009 pounds) of sodium dichromate.		

Waste Type: Process Effluent
Waste Description: The site received effluent water from isolated tubes containing ruptured fuel elements.
Closure Info: The cleanup verification package (CVP-2000-00013) has documented that the 116-D-2 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The COCs for the site as listed in the Sampling and Analysis Plan consisted of americium-241, cobalt-60, cesium-137, europium-152, europium-154, plutonium-238, plutonium-239/240, strontium-90, uranium-233/234, uranium-238, and hexavalent chromium.

Remedial action at the 116-D-2 site began on November 1, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil which were disposed at ERDF. On November 2, 1999, the excavation reached the design limit at El. 137.9 meters (452.4 feet).

At the completion of remedial action, the excavation was approximately 217.9 square meters (2,331.5 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 623.2 metric tons (687 tons) of material from the site were disposed of at ERDF. Cleanup verification sampling was conducted on January 3, 2000. The excavation will be backfilled in the near future with appropriate materials to the reference grade of El. 142.5 meters (467.5 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-D-3	Classification: Accepted
Names: 116-D-3; 108-D Crib #1	Reclassification: No Action (1/30/2003)
Type: Crib	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1967

Description: Based on excavations, the review of site drawings, and ground penetrating radar, it has been determined that the 116-D-3 Crib is a duplicate number for site 116-D-4.

Location: This crib is actually a duplicate number for the 116-D-4 Crib.

Process Description: Crib 116-D-4/116-D-3 received low-level fission product wastes in contaminated wash water from the 108-D Shipping Cask Handling Facility.

Related Sites/Structures: See sitecode 100-D-76 for additional information.

Waste Type: Process Effluent
Waste Description: The site (a duplicate number for the 116-D-4 Crib) is a crib containing contaminated soil and rock. The site received low-level fission product wastes in contaminated wash water from the 108-D Shipping Cask Handling Facility.

Closure Info: The actual crib, 116-D-4, was remediated on October 20 and 21, 1999. The possibility of 116-D-3 being a separate site has been investigated through excavation at all historically reported locations. Initial excavation at the contract design coordinates (N151739, E573774) occurred on 10/20/99; however, the excavation showed no engineered structure or contamination (using field instruments). Excavation activities occurred on 11/4/99 at location coordinates N151757, E 573768, which is also referenced as a possible location for 116-D-3. No evidence of a structure or contamination (using field instruments) was found. Excavation also occurred on 12/30/99 at coordinates N151725, E573807 and N151731, E573832. No structures or contamination (using field instruments) were found.

Code: 116-D-4	Classification: Accepted
Names: 116-D-4; 108-D Crib #2	Reclassification: Interim Closed Out (10/23/2000)
Type: Crib	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1967

Description: This unit has been remediated and closed out. The site was a 2.4 by 2.4-meter (8 by 8-foot) crib, 5 meters (16 feet) deep. Site 116-D-3 is an alias for this crib.

Location: The site is located 65.45 meters (281 feet) directly east of 108-D Shipping Cask Handling Facility, now demolished. This location is the southeast corner of the 108-D Building and east of the wash area of the 108-D.

Process Description: The site received low-level fission product wastes in contaminated wash water from the 108-D Shipping Cask Handling Facility maintenance shops and technical laboratory.

Related Sites/ Structures: The site is related to the 108-D Shipping Cask Handling Facility and to the maintenance shops and technical laboratory of that facility.

Waste Type: Process Effluent

Waste Description: The site was a crib containing contaminated soil and rock. The site received low-level fission product wastes from contaminated maintenance shops in the 108 buildings. Assuming that H-1-3091 represents the correct information, the crib received wash water from the 108-D Shipping Cask Handling Facility.

Closure Info: The cleanup verification package (CVP-2000-00008) has documented that the 116-D-4 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action began on October 20, 1999. Based on field screening, excavated materials identified as potentially clean were placed in stockpiles for potential use as backfill. On October, 21, 1999, the excavation reached the design limit at El. 140.7 meters (462 feet).

At the completion of remedial action, the excavation was approximately 137.8 square meters (1,482 square feet) in area with a maximum depth of approximately 2.8 meters (9 feet). Cleanup verification sampling began on January 3, 2000, and was finished on January 4, 2000. The backfill reference grade is El. 143.5 m (471 feet). Backfill will be taken from the clean stockpile and/or from other sources of clean material surveyed in accordance with the SAP and that are appropriate for use as backfill.

The contaminants of concern listed in the Sampling and Analysis Plan were uranium-238 and hexavalent chromium.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-D-5	Classification: Accepted
Names: 116-D-5; 1904-D Outfall Structure	Reclassification: Interim Closed Out (8/10/2011)
Type: Outfall	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1975

Description: The outfall structure had been an open, reinforced, compartmentalized concrete outfall structure. The outfall structure was demolished, caved into itself and backfilled with soil in 1998. In the spring of 2009, the engineered structure, contaminated debris and soil was removed and disposed in the ERDF facility.

Location: The site is located at the top of river bank, northwest of 116-D-7 (107-D Retention Basin).

Process Description: Process sewer wastes, and reactor cooling water collected and temporarily stored in the 116-D-7 and 116-DR-9 retention basins, were pumped to the river via the 116-D-5 outfall structure and associated 100-D-60 river effluent pipelines. The reactor cooling water discharged into the upper chamber of the concrete outfall structure, flowed through a bar grillwork and fell about 6.10 meters (20 feet) to the lower chamber of the outfall structure. Then it overflowed from the lower chamber into the discharge pipe to the river. The discharge pipe to the river (100-D-60) was connected to the side wall of the lower chamber of the outfall structure. The inlet to the discharge pipe from the outfall structure was about 0.10 meters (4 inches) above the floor of the lower chamber. The Outfall Structure was open to the atmosphere which allowed rain and snow to collect in the bottom 4 inches of the lower chamber. Prior to the structure being demolished and caved into itself, the Outfall Structure was enclosed with a chain-link security fence and an aviary exclusion mesh cover.

Related Sites/ Structures: The site is associated with the 107-D Retention Basin (116-D-7), the 107-DR Retention Basin (116-DR-9), 100D Reactor Cooling Water Effluent Lines (100-D-48), the 100DR Reactor Cooling Water Effluent Lines (100-D-49), the 100D River Effluent Lines (100-D-60) and Flumes (100-D-66).

Waste Type: Construction Debris

Waste Description: This unit received reactor coolant water from the 107-D & 107-DR Retention Basins and waste water from the 100-D Water Support Facilities including 183-D and 190-D.

The contaminants of concern include C-14, Cs-137, Sr-90, U-235, -238, and Pu-239/240.

Closure Info: Remedial action at the 116-D-5 waste site was performed between February 6 and April 1, 2009. Additional remediation was conducted on March 15, 2011 to remove residual contamination identified after the initial round of verification sampling. The site was originally excavated to a depth of approximately 5 m (16 ft) on the northwestern side of the excavation and 10 m (33 ft) on the southeastern side of the excavation. The depth of the excavation following additional remediation is approximately 6 m (20 ft) on the northwestern side and 11 m (36 ft) on the southeastern side of the excavation. The engineered structure was completely removed. The entire excavation resulted in approximately 2,275 bank cubic meters (2,976 bank cubic yards) of contaminated soil and debris being removed for disposal to the Environmental Restoration Disposal Facility (ERDF). Some of the material removed from the excavation was

placed in a staging pile area prior to being loaded out for disposal at ERDF.

The COCs and COPCs for the 116-D-5, 1904-D Outfall Structure, specified in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL 2009a) are identified as carbon-14, cesium-137, strontium-90, uranium-235, uranium-238, and plutonium-239/240. Based on process knowledge, analyses of shallow and deep zone samples at the 116-D-7 retention basin (BHI 2000), and identification as COCs/COPCs for other outfall waste sites, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, lead, mercury, chromium (total), and hexavalent chromium have also been identified as COPCs for the 116-D-5 waste site. Americium-241, uranium-234, pesticides, SVOCs, polycyclic aromatic hydrocarbons (PAH), and ion chromatography (IC) anions were also added, as they were identified as COCs/COPCs for the 100-D-31:7 pipeline that fed into the 116-D-5 outfall. Although not considered COCs/COPCs, antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, magnesium, molybdenum, nickel, silver, selenium, vanadium, and zinc will be evaluated by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals lists.

Code:	116-D-6	Classification:	Accepted
Names:	116-D-6; 105-D Cushion Corridor French Drain	Reclassification:	Interim Closed Out (11/8/2000)
Type:	French Drain	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1967
Description:	This site has been remediated and closed out. The waste site was a 1-meter (3.3-foot) diameter french drain, 1 meter (3.3 feet) deep covered by approximately 1 meter (3.3 feet) of gravel and soil.		
Location:	The site was located adjacent to the northeast corner of the 105-D Reactor Building, bordered on two sides by the reactor wall and foundation, and on the other two sides by the 100-D-48 cooling water effluent pipelines.		
Process Description:	The drain received domestic wastewater from the change room and wastewater from the mask decontamination station located in the cushion corridor during reactor operation from 1953 to 1967. Additional decontamination effluents and solvents were also likely disposed into this french drain.		
Waste Type:	Water		
Waste Description:	The site received domestic water from the changing room and water from the mask decontamination station. The site may have received chemical decontamination wastes and solvents.		
Closure Info:	Site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL-22).		
	Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified through process knowledge are listed in the SAP (DOE-RL 1998a). All of the 116-D-		

6 site contaminants in the SAP were listed as COPCs. No COCs were specifically identified at the 116-D-6 site. The COPCs that were detected during field sampling and then added to the final list of COCs included americium-241, cesium-137, europium-152, europium-154, plutonium-239/240, uranium-233/234, uranium-238, total chromium, lead, and mercury. The remaining COPCs identified in the SAP are not addressed in this document because they were not detected or were significantly below background levels.

Because the site was bordered on two sides by the reactor wall and foundation, and on the other two sides by the 100-D-48 cooling water effluent pipelines, shallow soils associated with the 116-D-6 site were excavated and disposed of at the ERDF during the remediation of the 100-D-48 cooling water effluent pipelines. Remedial action at the 116-D-6 site began on October 21, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and the underlying deep zone soils. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On January 3, 2000, the excavation reached the design limit at El. 137.9 meters (452 feet).

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 10.1 square meters (109 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 200 metric tons (221 tons) of material from the site were disposed of at ERDF. Cleanup verification sampling began on February 29, 2000, and was finished the same day. The excavation will be backfilled with appropriate materials to the reference grade of El. 142.5 meters (468 feet).

The CVP demonstrated that remedial action at the 116-D-6 site achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE-RL-96-17). Materials from the 116-D-6 site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils have been sampled, analyzed, and modeled to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-D-6 site is verified to be remediated in accordance with the ROD.

Code:	116-D-7	Classification:	Accepted
Names:	116-D-7; 107-D; 107-D Retention Basin	Reclassification:	Interim Closed Out (8/15/2000)
Type:	Retention Basin	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1967
Description:	The unit was an open concrete basin with a vertical concrete baffle constructed lengthwise in the middle of the basin. The floor consisted of concrete slabs, with joints originally closed with neoprene water seals. The walls sloped from the floor to a point 3 meters (10 feet) above the floor level with the remaining wall (approximately 3.0 meters [10 feet]) being vertical. The sloping wall sections were 10 centimeters (4 inches), and the vertical walls were reinforced construction with a minimum thickness of 0.3 meters (1 foot) at the top and 1.75 meters (5.75 feet) at the bottom.		
Location:	The 116-D-7 site is located near the northern edge of the 100-D Area and is approximately 110 meters (360 feet) from the Columbia River.		
Process Description:	The 116-D-7 Retention Basin was constructed in 1944 to hold cooling water effluent from the 105-D Reactor for a brief period of time to allow for thermal cooling and decay of short-lived		

radionuclides prior to release to the Columbia River. The retention basin received reactor cooling water effluent until 1967.

Related Sites/ Structures: Four sludge trenches were excavated in the 107-D and 107-DR Retention Basin area to dispose of sludge that had accumulated at the bottom of the basins. The trenches were dug in the Spring of 1953 to facilitate repair of the basins by minor construction forces, and were covered after use with 1.8 meters (6 feet) of clean soil. The approximate coordinates for the trenches are: N94600, W95291; N94453, W52888; N94511, W52092; N94252, W52039, although the exact locations are not certain. An additional trench was excavated in 1955 to receive effluent from the 107-D and 107-DR systems following an undetermined number of fuel cladding failures. Approximate coordinates for this trench are N94698, W53149.

Waste Type: Process Effluent

Waste Description: This site retained cooling water effluent from the 105-D Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the basin ranged from 5 curies to over 400 curies. Seventy percent of the total radionuclide inventory was contained within the soil adjacent to the unit. Approximately 10 curies had leached into the concrete floor and walls.

Closure Info: Site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL-96-22).

Waste site contaminants of concern (COCs) identified through process knowledge are listed in the SAP (DOE-RL-96-22). Additional COCs including total chromium, mercury, and lead were identified in the field during remedial action. The COCs for this site are americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium, total chromium, mercury, and lead.

Excavation of the 116-D-7 site began on May 1, 1997, and involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. The excavation design limit elevation was El. 129.85 meters (425.9 feet); however, after the original excavation and sampling, hexavalent chromium concentrations were above the soil RAG for river protection (2.2 milligrams/kilogram). To remediate areas that were above the hexavalent chromium soil RAG for river protection, approximately two-thirds of the floor (deep zone sampling areas A2, B5, C7, C8, and C9) was excavated an additional meter to an elevation of El. 128.85 meters (422.6 feet).

The lowest elevation that the excavation extended to was El. 127 meters (417 feet), about 7.4 meters (24.4 feet) below the ground surface (backfill reference El. 134.43 meters [440.9 feet]). The low areas (El. 127 meters [417 feet]) of the site excavation are two relatively small areas near the east and west ends of the site. The remainder of the site, with the exception of the sidewalls, was generally excavated to the design elevation of El. 129.85 meters (425.9 feet). Cleanup verification sampling was conducted during August, September, and November 1998 and during January and February 1999.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 12,940 square meters (139,200 square feet or 3.2 acres). Approximately 177,724 metric tons (195,941 tons) of material from the site were disposed of at ERDF.

The CVP demonstrates that remedial action at the 116-D-7 site achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and the RDR/RAWP (DOE-RL 1998). Materials that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils have been sampled, analyzed, and modeled to show that residual COC concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario. This scenario, described in Section 5.2, assumes multiple exposure pathways (e.g., ingestion, inhalation, and direct exposure) for shallow zone soils.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone [i.e., below 4.6 m (15 ft)] are required. The verification package demonstrates that residual COC concentrations pose no threat to groundwater or the Columbia River. Thus, those areas of the 116-D-7 site represented by the CVP are verified to be remediated in accordance with the ROD.

Code: 116-D-9	Classification: Accepted
Names: 116-D-9; 117-D Crib; 117-D Seal Pit Crib	Reclassification: Interim Closed Out (3/19/2001)
Type: Crib	Start Date: 1/1/1960
Status: Inactive	End Date: 1/1/1967
Description:	This site has been remediated and closed out. The waste site and associated piping was excavated. Site remediation began in 1999 and ended in 2000. The site was a crib and pipeline filled with gravel and covered to grade with clean soil. The surface was covered with cobbles, and a large steel vent cap was located in the center.
Location:	The crib was located 90.7 meters (200 feet) southeast of the 105-D Building.
Process Description:	The 116-D-9 Crib operated from 1960 to 1967. It received stack drainage through a 10-centimeter (4-inch)-diameter pipeline from the confinement system 117 Building seal pits. The 117 Building received exhaust fan discharges from the 105-D Reactor through an inlet duct and released the filtered air through the 132-D-4 exhaust stack. The crib was a 3 meter by 3 meter by 3 meter (10 by 10 by 10 foot) gravel-filled crib with a large steel vent cap extending above the ground surface. It received an estimated 420,000 liters of process effluent drainage from the confinement seal pits located at the 117-D Building. The seal pit effluent entered the 116-D-9 Crib through a 91.4 meter (300-foot) long, 10.2 centimeter (4 inch.) diameter asbestos cement pipe. Sampling in 1978 revealed contamination at the 116-D-9 site was at or below background.
Related Sites/Structures:	The crib is associated with the 117 Filter Building (site 132-D-2).
Waste Type:	Process Effluent
Waste Description:	The site received drainage from the confinement system 117 Building seal pits.
Closure Info:	The cleanup verification package (CVP-2000-00012) has documented that the 116-D-9 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work

Plan for the 100 Area (RDR/RAWP).

Waste site COCs and COPCs identified through process knowledge were listed in the 100 Area Remedial Action Sample Analysis Plan. The contaminants of concern for this site were strontium-90, uranium-238 and hexavalent chromium. No contaminants of potential concern were identified at this site.

Remedial action began on October 29, 1999. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed at ERDF. On August 11, 2000, the excavation reached the design limit at elevation 137.3 meters (447.2 feet).

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 598.4 square meters (6,441 square feet) in area with a maximum depth of approximately 5.5 meters (18 feet). An estimated 100 meters (328 feet) of pipeline was removed. Cleanup verification sampling was conducted on January 5, 2000, for the 116-D-9 Crib, and on September 12, 2000, for the pipeline excavation. The excavation was backfilled with appropriate materials to the reference grade elevation of 142.5 meters (467 feet). Approximately 7.3 metric tons (8.0 tons) of material was removed and disposed at the Environmental Restoration Disposal Facility (ERDF).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-D-10	Classification: Accepted
Names: 116-D-10; 105-D Fuel Storage Basin Cleanout Percolation Pit; 105-D Fuel Storage Discharge Ponds; 105-D Ponds	Reclassification: Interim Closed Out (12/2/2010)
Type: Pond	Start Date: 7/1/1984
Status: Inactive	End Date: 9/1/1984
Description:	The unit consists of two open excavated pits with a crossover channel connecting them. The west excavation was 10.7 meters (35 feet) long, 6.7 meters (22 feet) wide, and 0.9 meters (3 feet) deep. The east excavation was 15.2 meters (50 feet) long, 7.3 meters (24 feet) wide, and 1.2 meters (4 feet) deep. Both pits have been back filled and graded to resemble the natural terrain.
Location:	The site is located east of the 105-D Reactor Building and just outside of the AC-5-40 permanent markers.
Process Description:	The site was used during the 1984 cleanout of the 105-D Fuel Storage Basin (FSB) to dispose of water to the soil. During cleanout of the basin, radiologically contaminated shielding water was processed through ion-exchange columns and retained in holding tanks for analysis before being released to the soil. The water was released to two open excavated pits (ponds) with a connecting channel. The west pond was small and only allowed for the discharge of one holding tank per day, while the east pit was designed to handle an increase in needed capacity. During cleanout of the basin, radiologically contaminated shielding water was processed through ion-exchange columns and released to the ponds. It is reported that no hazardous substances were released with the water; however, chemical analysis was not a standard

practice during that period. Additionally, as discussed in Decommissioning of the 105-D Fuel Storage Discharge Ponds Final Radiological Release Report (Beckstrom 1985), "minute quantities of radionuclides in the processed water presented a potential for accumulation of radionuclides in the soil" at the bottom of the ponds. On August 27, 1984, a process equipment failure affected approximately 2,350,000 L (620,000 gal) of water that was processed from the 105-D FSB and introduced very fine particles of sludge into the processed water holdup tanks (Beckstrom 1985). When the previously clean water from the holdup tanks (verified by radiochemical and isotopic analysis) was discharged, the fine sludge particles were also released, allowing radioactive material to enter the soil. Water processing operations were immediately suspended and a detailed radiological survey was performed. Contamination levels ranged from 1 pCi/g to several hundred pCi/g. Equipment was repaired and operations resumed on September 6, 1984. The final tank of processed water was discharged on September 22, 1984. After discharge of the fuel storage basin water was complete, approximately 28 m³ (1,000 ft³) of contaminated soil was removed from the bottom of the ponds and taken to the 200 West Area for burial. Radiological surveys and sampling were then performed to support the completion of contamination removal. The mean alpha and beta-gamma activities were calculated to be less than 1 pCi/g and 17.7 pCi/g, respectively, which met the unrestricted release criteria of less than 1 pCi/g alpha activity and less than 20 pCi/g beta-gamma activity that was applicable at that time. The ponds were then filled to grade with 0.9 to 1.2 m (3 to 4 ft) of clean soil. A 2005 review of the maximum detected isotopic activity levels concluded that residual beta-gamma activity exceeded current remedial action goals (RAGs) in some areas.

Related Sites/ Structures: 105-D Fuel Storage Basin

Waste Type: Water

Waste Description: The unit received processed water from the 105-D Fuel Storage Basin. During the cleanout of this basin, the radiologically contaminated shielding water was processed through ion exchange columns. Before discharging the water to the unit, composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. No known hazardous substances were present in the water, however chemical analysis was not a standard practice during that period and there is no evidence that analyses were performed. It should be noted that water removed from the 1608-D is believed to be comparable to the storage basin water, and EP-TOX testing results for the 1608-D water were negative.

Closure Info: The Remaining Sites Verification Package (RSVP-2009-042) has documented that the 116-D-10, waste site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).

Remedial action was performed from April 24 to May 13, 2008. Approximately 2,700 bank cubic meters (3,500 bank cubic yards) of soil was removed and stockpiled. The excavation is approximately 33 m (110 ft) long, 25 m (84 ft) wide, and 5 m (15 ft) deep. Contaminated soil was not found during this remediation, likely because the contamination would have been localized in a very thin layer, located about 1 m (3 ft) below grade, and would not be readily separated from the surrounding clean soil without using smaller tools than the large scale remediation equipment. Since the excavation reached a depth of 4.6 m (15 ft), the contaminated soil was certainly blended within the soil stockpile as a result of the excavation and stockpiling. Although no radiological contamination was identified, the staged material was removed to the Environmental Restoration Disposal Facility because of the potential for residual contamination existing within the stockpile. This removal occurred on January 7 through 26, 2009.

The contaminants of potential concern (COPCs) for the 116-D-10 waste site were determined based on the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL96-22, Rev. 5), historical sample results, in-process sample results, and professional judgment based on field remediation observations. The COPCs for verification sampling included americium-241, carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, tritium, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, lead, lithium, mercury, and polychlorinated biphenyls (PCBs).

Verification sampling was performed on May 19 through 26, 2009. The laboratory-reported verification data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as Attachment 1 of the 95% upper confidence limit (UCL) calculation in Appendix C of the RSVP.

The verification sampling results support a reclassification of the site to Interim Closed Out. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	120-D-2	Classification:	Accepted
Names:	120-D-2; 186-D Waste Acid Reservoir	Reclassification:	Interim Closed Out (7/28/2009)
Type:	Surface Impoundment	Start Date:	
Status:	Inactive	End Date:	1/1/1979
Description:	The waste site consisted only of the 186-D waste acid reservoir and associated soils. The unit was constructed of acid-proof brick, 3-ply waterproof membrane, vitrified pipe, #8 lead flashing, and gunnite. The sides of the reservoir were sloped 2:1 from 1.5 meters (5 feet) below grade level to the bottom. As of June 21, 1991 the site area was covered with gravel and annual weeds. No evidence remained on the surface of the building structure.		
Location:	The site is located west and south of the center of the 186-D Building.		
Process Description:	The 120-D-2, 186-D Waste Acid Reservoir was part of the 186-D demineralization facilities (WHC 1994). The waste acid reservoir was located west and south of center of the 186-D Building. Unique to the 100-D Area, the 186-D Building originally contained demineralization facilities intended as a water treatment system for reactor cooling water. However, research indicates that the facilities were never used as intended. The building apparently was converted to a warehouse. An acid-proof brick-lined trench, running almost the entire length of the 186-D Building, was designed to gather waste acid from the demineralization process and deliver it to the 120-D-2 waste acid reservoir. Acid stored in the reservoir could be transferred to the 186-D acid mixing/neutralization tanks, and subsequently discharged to the 100-D-50:7 segment of the process sewer. Underflow and overflow drains in the waste acid reservoir could also discharge directly to the 100-D-31:9 segment of the process sewer.		
Related Sites/ Structures:	The reservoir drains were connected to the 100-D Area process sewer system. The 186-D Building was originally constructed to be used as a water treatment plant, and the acid waste reservoir was constructed to receive waste acid from processes in the 186-D Building. The 186-D Building was never used as a water treatment plant, however it was used as a warehouse.		
Waste Type:	Chemicals		
Waste Description:	This unit was never used for waste acid storage. No records have been found documenting the disposal of waste of any kind in this facility. No written documentation has been found concerning the disposal of the lead flashing that was used in the construction of the waste acid reservoir; however, it is assumed that the lead flashing was disposed in-situ during the		

demolition of the 186-D Facility.

Closure Info: The Remaining Sites Verification Package (RSVP-2003-053) has documented that the 120-D-2 site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units,(Remaining Sites ROD). The RSVP shows that the site has been successfully remediated and that there are no residual hazardous/dangerous materials present above the remedial action objectives (RAOs) in the soil.

Remediation of the waste site was performed in May through July 2007. Approximately 3,361 m³ (4,396 yd³) of stained soil, stained concrete, demolition debris, and lead sheet were excavated and disposed directly to the Environmental Restoration Disposal Facility. Observations during remediation confirmed that the visible yellow stains were present outside of the waste acid reservoir. All of the visibly impacted soils were removed (WCH Logbook, EL-1607-1). Soil pH was monitored during excavation to help direct the extent of the excavation and ensure all of the impacted soils were removed. Piping associated with an overflow and an underflow drain in the northwest corner of the waste acid reservoir was removed from within the footprint of the 120-D-2 remediation. Remaining portions of the drain sewer will be removed with remediation of the 100-D-31:9 pipelines planned to occur in fiscal years 2009 and 2010.

Process knowledge, historical information, field observations, and in-process sampling information (RSVP-2008-053, Appendix A) were used to finalize the list of COPCs for verification sampling. The COPCs included pH, sulfate, hexavalent chromium, mercury, and lead. Radionuclides were not COPCs because the waste acid reservoir was not a radioactive site and field radiological survey results did not identify radioactivity inconsistent with background levels. Contingencies for additional analyses discussed in the work instruction were not needed because no other suspect hazardous materials were found or detected during remediation or sampling.

Following site remediation, verification sampling was conducted on September 17, 2008 (WCH Logbook EL-1607-4, pp 12, 49-52), to support a determination that residual contaminant concentrations at this site have met the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The verification sample results were provided in Appendix B of the RSVP and indicated that the waste removal action achieved compliance with the RAOs for the site. The laboratory-reported verification data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation (RSVP-2008-053, Appendix B).

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code: 126-D-2	Classification: Accepted
Names: 126-D-2; 184-D Coal Pit; Inert Landfill	Reclassification: Interim Closed Out (10/14/2010)
Type: Inert/Demolition Landfill	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1986

Description: and later used as a demolition and inert waste landfill. This unit is full of debris. It has been covered with about 0.3 meters (1 foot) of pit run backfill material and graded to conform with the natural terrain. Numerous surface depressions are visible, indicating a potential cave-in hazard.

Location: The site is located just west of the site of the demolished 184-D Power House, north of the 183-D Water Treatment Facility, and northwest of the 105-D Reactor Building.

Process Description: The site was first used as a coal pit in 1943. Use as a demolition and inert waste landfill began in 1970.

Related Sites/ Structures: The site was originally associated with the 184-D Power House.

Waste Type: Asbestos (friable)
Waste Description: Asbestos containing waste has been disposed of at this site.

Waste Type: Demolition and Inert Waste
Waste Description: The unit contains demolition and inert waste from demolished facilities in and around 100-D. This includes debris from 184-D (including stacks), 108-D, released portions of the 115-D/DR, and 186-D. The site is suspected to contain some radioactively contaminated solid wastes. Potential contaminants include: Chromate, lead, mercury, undetermined organic and inorganic chemicals.

Waste Type: Chemicals
Waste Description: The site is known to contain paint cans and paint wastes, solvents, acids, dry chemicals, photo chemicals, and herbicide cans.

Closure Info: The cleanup verification package (CVP-2009-00007, Rev. 1) has demonstrated that remedial action at the 126-D-2 site has met the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (Burial Grounds ROD) (EPA 2000).

Initial remedial action at the site began on May 29, 2007, and excavation continued through October 6, 2008. Supplemental remedial action began on October 19, 2009 and excavation continued through March 16, 2010. The debris removed included concrete, steel reinforcing rod, metal pipes, reactor components, drums, various containers, transite material, and a white powdery substance. Approximately 41,873 BCM (54,770 BCY) of soil and debris were removed for disposal to the ERDF.

The contaminants of potential concern (COPCs) for the site were developed in consideration of those specified in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE-RL- 2001-35), field observations of the types of waste removed from the site, evaluation of constituents detected in waste characterization and in-process samples, and results of the Global Positioning Environmental Radiological Surveyor (GPERS) surveys. As a result, the COPCs included asbestos, barium, chromium (total), hexavalent chromium, copper, lead, mercury, nickel, zinc, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), pesticides, and gamma-emitting radionuclides. Although not considered COPCs, antimony, arsenic, beryllium, cobalt, manganese, molybdenum, selenium, silver, and vanadium were also evaluated for by requesting analysis of the expanded list of inductively coupled plasma (ICP) metals.

Initial verification sampling was performed on June 22 and 23, 2009. The laboratory-reported

data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix D or in Appendix E, for the asbestos results, of the CVP.

Excavation continued to a depth below the base of the original coal pit, at which debris was no longer present. The final depth of the excavation ranged from approximately 5.5 m (18 ft) in a small portion of the southeast corner of the excavation to 3 m (10 ft) in a variety of locations in the excavation. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils.

The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. However, the entire excavation area was considered one decision unit, and will be closed out using the more restrictive shallow zone cleanup criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required

Code: 128-D-2	Classification: Accepted
Names: 128-D-2; 128-D-2 Burn Pit	Reclassification: Interim Closed Out (9/8/2011)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:

Description: The waste site has been remediated. The site was a large landfill area that showed evidence of surface burning and has no definite boundaries. The site was marked with signs of plant stress, depressions, and berms. Concrete and metallic debris exposed on the surface indicated the possibility that this site was also used as a solid waste landfill. The following items were also noted during the March 31, 1999, visit: rigging equipment, bricks, and unidentified white powder that may be ash, and a north-south running trench. The site has been used as a disposal site for compacted tumbleweeds collected from area fences. Knapweed was noted during the March 1999 walkdown.

Location: The site is located northeast of 105-D and southwest of 100-D-7.

Waste Type: Misc. Trash and Debris

Waste Description: Some pieces of non-contaminated reactor hardware and graphite blocks were found at the site.

Closure Info: Remediation at the 128-D-2 waste site was performed between July 22, 2009 and January 14, 2010. Approximately 39,570 bank cubic meters (BCM) (51,756 bank cubic yards [BCY]) of contaminated soil and debris were removed from the 128-D-2 waste site. The debris removed from the 128-D-2 waste site consisted of miscellaneous noncombustible debris including concrete, metal, bricks, vitrified clay pipe, and electrical wiring. Although radionuclides cesium-137, potassium-40, thorium-228, thorium-232, radium-226, radium-228, and strontium-90 were detected in confirmatory soil samples at the 128-D-2 waste site, no radiologically contaminated material was discovered during remediation at the 128-D-2 waste site. No indications of previous spills or releases were detected during remediation at the 128-D-2 waste site.

The soil and debris from the 128-D-2 Burn Pit and the 100-D-7 Undocumented Solid Waste Site were staged in a staging pile to the east of the 128-D-2 waste site and southeast of the 100-D-7 waste site before being loaded for disposal at the Environmental Restoration Disposal Facility (ERDF). The staging area includes a smaller area where topsoil from the waste sites was placed for use on top of the backfill to support successful revegetation as required by the ecological review for the 128-D-2 and 100-D-7 waste sites. All staged waste has been disposed

to the ERDF. The staging area was then scraped to remove surface contaminated soil, which was disposed to the ERDF. The location of the staging pile was closed out with the 100-D-7 waste site.

Three anomalies were initially identified during the remediation at the 128-D-2 waste site. These consisted of white powder (anomaly 100D-AN-09-060), an area with clumps of yellow sand (anomaly 100D-AN-09-064), and a white solid material (anomaly 100D-AN-09-065). All these materials were sampled and characterized prior to removal and shipment to ERDF, and the sample results are reported in the Work Instruction for Verification Sampling of the 128-D-2 Burn Pit and the 100-D-7, Undocumented Solid Waste Site. The 100-D-7 waste site is located approximately 700 meters (2300 feet) northeast of the 105 Reactor Building, and immediately northeast of the 128-D-2 Burn Pit.

Code:	130-D-1	Classification:	Accepted
Names:	130-D-1; 1706-D Gasoline Storage Tank; 1716-D Gasoline and Oil Storage Tanks	Reclassification:	Interim Closed Out (8/15/2011)
Type:	Storage Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1968
Description:	Originally the site consisted of two underground storage tanks. One of the tanks was filled with leaded gasoline and had a capacity of 3,800 L (1,000 gal). The other was an oil tank with a capacity of approximately 300 gallons (H-1-5017).		
Location:	The gasoline tank was located northeast of 190-D and on the east side of the demolished 1716-D Building. The oil tank was located on the west side of the 1716-D Building.		
Process Description:	From 1944 until 1968, the gasoline tank was used to support vehicle fueling operations at the 1716-D Garage. The oil tank was installed during construction of the lubrication pits in 1953 (HW-27932). The drawing shows two lines from the tank to the 1716-D Building. The text describing the tank in drawing (H-1-5017) is not legible. No other historical information is available about the oil tank. The oil tank was added to the 130-D-1 waste site after it was discovered while excavating the 100-D-31:7 pipeline subsite in 2010. The oil tank was subsequently removed and disposed of at ERDF.		

When the garage operations were centralized following deactivation of the 100-D/DR Area, the gasoline tank was emptied of product and filled with water. In 1989, the tank was removed as part of the Hanford Site Underground Storage Tank (UST) removal program and was noted to be devoid of any contents and heavily deteriorated. Underlying soils were visibly impacted, and characterization showed elevated levels of petroleum hydrocarbons. (WHC-N-270) No soil remediation or removal activities were performed, and the excavation was backfilled with clean material. Slightly elevated concentrations of lead were detected in subsequent site characterization activities (DOE/RL-93-29).

The coordinates for the gasoline tank, provided in the Technical Baseline Report, are incorrect per H-1-1520, revision 1. The coordinates would place the gasoline storage tank by the water tower (sanitary water tank 1902-D) approximately 122 m (400 ft) west of the garage and gas station. During the April 1999 site walkdown, no evidence of the site could be found except for some soil gas probes left from the soil gas investigation WHC-SD-EN-ES-031). The concrete marker mentioned in the Technical Baseline Report could not be found at either the coordinates mentioned in that document or at the site's mapped location. The top of the former gasoline UST is believed to have been located 1.3 to 1.5 m (4 to 5 ft) below ground surface, and soils impacted by past product releases may currently exist up to 3 m (10 ft) of clean overburden.

In June 2004, a geophysical survey was performed at the 130-D-1 site to verify the absence of

the underground storage tank (UST) and delineate any residual anomalous subsurface features (CCN 115042). The survey was conducted using ground penetrating radar, electromagnetic induction, and magnetometry. No subsurface anomalous features with the characteristics of a UST were observed. Several subsurface anomalous features were observed during the survey, including linear anomalies and magnetic anomalies indicative of basalt-rich gravels commonly used for parking areas and roadways.

The project team conducted a site visit in February 2005. The objectives of the visit were as follows: (1) Evaluate the site in consideration of geophysical survey information and historic documentation to assist in the development of an effective environmental strategy, (2) Confirm the waste site boundary, (3) Locate and evaluate surface debris and anomalies that would require removal to allow for reclassification of the waste site, (4) Evaluate access and staging considerations for heavy excavation equipment. The suspected location of the former gasoline tank was identified during the site visit based on the presence of soil gas sampling debris and grid markings from the geophysical survey.

Related Sites/ Structures: The two storage tanks were related to the former 1716-D Garage.

Waste Type: Oil

Waste Description: The two storage tanks were related to the former 1716-D Garage. Contaminants of potential concern (COPCs) include TPH, SVOAs, VOCs, arsenic, barium, chromium, lead, selenium, silver, and polychlorinated biphenyls (PCBs). Radionuclides are not a COPC for this site. Based on a review of historical process information and the results of past characterization, the 130-D-1 site is expected to contain hazardous constituents at levels in exceedance of remedial action goals.

Closure Info: Remedial action at the 130-D-1 waste site began on July 21, 2010, and continued through July 26, 2010. Additional remediation was conducted on March 17, 2011, and April 15, 2011, due to residual contamination identified following verification sampling activities. The entire excavation resulted in approximately 780 bank cubic meters (BCM) (1,020 bank cubic yards [BCY]) of soil and debris being removed for disposal at the ERDF. The site was excavated to an approximate depth of 3.5 m (11.5 ft) deep.

Prior to being loaded out for disposal at ERDF, the contaminated soil and debris was staged in a staging pile area on asphalt located east of the 130-D-1 excavation. Following loadout of the waste material, the staging pile area was excavated, removing the asphalt and underlying soil to a depth of approximately 0.5 m (1.5 ft) below the surface.

Code: 132-D-1	Classification: Accepted
Names: 132-D-1; 115-D/DR Gas Recirculating Facility	Reclassification: Interim Closed Out (12/5/2011)
Type: Process Unit/Plant	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1967

Description: The waste site has been remediated. It consisted of the demolished 115-D/DR Gas Recirculation Facility footprint, debris and pipe tunnels. This remedial action did not include the some portions of the 115-D/DR facility (the seal pit, inlet and outlet ductwork, and tunnels connecting to the 105-D and 105-DR Reactors) that will be included in remedial activities of the 100-D-86:1 and 100-D-50:4. The 115-D/DR Gas Recirculation Facility was a single-story, reinforced concrete structure, 6.1 meters (20 ft) high, with a basement. At ground level, an operating gallery ran the length of the building and was flanked on either side by cells that contained the gas processing equipment. The cells, including walls, ceilings and floors, were constructed of reinforced concrete slabs with composition surfaces. At right angles to the operating gallery and

building was divided into two large filter cells with a smaller operating area between them. The filter cells each held six filter frames (two wide and three deep). The filter frames were designed to hold twenty-eight filters that were 0.6 meters (2 feet) square by 0.3 meters (1 foot) thick. There were spaces between the frames to allow access for filter maintenance. The operating area between the two cells was divided into two levels. The upper level, called the access gallery had ten doors that led from it. Four doors opened into each of the filter cells and the two other doors provided access to the intake and exhaust ducts. The operating gallery was located below the access gallery. A sump was located at each end of the operating gallery to collect incidental drainage from above. A large open area extended the full length of the structure above the access gallery and the filter cells. It ranged in height between 2.5 and 2.4 meters (8.1 and 7.8 feet) due to the structure's sloping roof. The space provided access to the cement cover blocks that were positioned over each of the filter frames.

Related Sites/ Structures: The site was associated with the 105-D Reactor (118-D-6), the 116-D Stack (132-D-4), the 119-D Sample Building, and the 117-D Seal Pit Crib (116-D-9).

Waste Type: Demolition and Inert Waste

Waste Description: The site contained radiological contamination from 105-D Reactor ventilation exhaust. Total radionuclide inventory in the 117-D building was estimated to be 3.9E-03 curies. The radionuclides comprising this figure were tritium, carbon-14, cobalt-60, strontium-90, cesium-137, europium-152, and plutonium-239.

Closure Info: The Remaining Site Verification Package (RSVP-2005-024) documents the current site condition as achieving the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (ROD) (EPA 1999).

Soil cleanup levels were established in the interim action ROD based on a limited ecological risk assessment. A baseline risk assessment for the river corridor portion of The Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final ROD for this site.

Using the maximum radiological activities from the pre-demolition characterization data to represent residual contamination levels over 100% of the paint and concrete of the former building, RESidual RADioactivity (RESRAD) modeling was performed in 2005 to support the previous decision to demolish and bury the building in place. The RESRAD modeling accounts for radioactive decay from 1985 (year of sampling) to 2005, and predicts that the site achieves the dose limits and risk objectives for rural residential land use with institutional controls, groundwater protection, and river protection. Further excavation of the site to collect more information (i.e., samples) was not likely to result in a change to the interim closed out decision because the residual contamination occurred within a thin surface layer of paint on the interior surfaces of the building and would be unlikely to be detected in the deep zone rubble resulting from demolition of the building.

The RSVP demonstrates that the site meets objectives for Interim Closed Out Status as established in the RDR and the ROD. The site and contaminant levels remaining in the soil will be protective of direct exposure, groundwater, and the Columbia River. However, the acceptability of unrestricted direct exposure to below-grade structure surfaces in the deep zone has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 132-D-3

Classification: Accepted

Names: 132-D-3; 1608-D Effluent Pumping Station; 1608-D Waste Water Pumping Station **Reclassification:** Interim Closed Out (5/9/2006)

Type: Pump Station **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1965

Description: The site consisted of the effluent pumping station facility which was decommissioned and demolished in 1986. The area was backfilled to grade and gravel added, it now resembles a gravel parking lot. As documented in the Remaining Sites Verification package RSVP-2005-033, the site meets the objectives for interim closure. Prior to decommissioning, the structure extended 1.2 meters (4 feet) above grade and 9.8 meters (32 feet) below grade. The walls and floor were constructed of reinforced concrete and the roof was constructed of a wood frame with composition surface. The facility consisted of an accumulation sump, which supplied three separate sumps.

Location: The unit was located adjacent to the south side of the 105-D Reactor (118-D-6) within the 105-D/DR Exclusion Fence.

Process Description: This unit received water from the 105-D reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals. Water was pumped from the reactor collection pits into the reactor effluent lines near the reactor building and became part of the 107-D effluent (116-D-7) that was discharged to the Columbia River.

Waste Type: Process Effluent

Waste Description: This unit received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals. Radionuclides were primarily miscellaneous fission and activation products. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid.

Waste Type: Demolition and Inert Waste

Waste Description:

Closure Info: The current site condition has been documented in the Remaining Sites Verification Package (RSVP) 2005-033 as achieving the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA 1999) (ROD).

Demolition and site grading were performed in 1986 using conventional heavy equipment. The structure was demolished to at least 1 meter (3.3 feet) below grade and the rubble buried in situ under at least 1 meter (3.3 feet) of clean fill. The site was released for unrestricted use based on the post-decontamination characterization results and the Dose Assessment of In Situ Burial of the 1608-D Lift Station.

Soil cleanup levels were established in the interim action ROD based on a limited ecological risk assessment. A baseline risk assessment for the river corridor portion of Hanford began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final ROD for this site.

In accordance with the RSVP, the 1986 sampling results support a reclassification of the site to interim closed out. The RSVP also illustrates that the site and contaminant levels remaining in the soil will be protective of direct exposure, groundwater, and the Columbia River. However, the acceptability of unrestricted direct exposure to below-grade structure surfaces in the deep zone has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling

or excavation into the deep zone are required.

Code: 1607-D2 **Classification:** Accepted

Names: 1607-D2; 1607-D2 Sanitary Sewer System; 1607-D2 Septic Tank; 1607-D2 Septic Tank and Associated Drain Fields; 124-D-2 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1996

Description: The 1607-D2 Septic System has been divided into five sub-sites: The 1607-D2:1 Abandoned Tile Field; 1607-D2:2 Replacement Tile Field, 1607-D2:3 Septic Pipelines, 1607-D2:4 Septic Tank, and 1607-D2:5 Inlet Pipe to Replacement System Tile Field. This site was broken into sub-sites to allow for close out of each part as remediation progressed in the area.

Location: The septic tank was located approximately 30 meters (100 feet) southeast of the 116-D-7 Retention Basin. The original tile field (abandoned in 1950) was near the east side of the 116-DR-9 Liquid Effluent Retention Basin facility and approximately 91.5 meters (300 feet) northeast of the 1607-D2 Septic Tank. The replacement tile field is located approximately 244 meters (800 feet) north of the septic tank, north of the perimeter road.

Related Sites/Structures: The site serviced the 189-D (Storage Yard and Mechanical Development Laboratory), the 185-D (Thermal Hydraulics Laboratory), the 182-D (Reservoir and Pump House), the 183-D (Water Filter Plant), the 1700-D Administration and Services, and the 105-D Reactor Building.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary waste from office, maintenance services, and process water pumping buildings (190-DA, 189-D, 185-D, 182-D, 183-D, 170-D, and 105-D). The flow rate to this unit was estimated at 4,640 liters/day (1,225 gallons/day). There were several clay brick access manholes associated with this septic system located throughout the 100-D Area. Potential contaminants include Eu-152, U-235, U-238, Cs-137, C0-60, chromium, mercury and lead.

This Site has the Following SubSites:

Code: 1607-D2:1
Names: 1607-D2:1; Eastern 1607-D2 Tile Field; Original 1607-D2 Tile Field

Code: 1607-D2:2
Names: 1607-D2:2; Northern Tile Field; Replacement 1607-D2 Tile Field

Code: 1607-D2:3
Names: 1607-D2:3; 1607-D2 Septic Pipelines

Code: 1607-D2:4
Names: 1607-D2:4; 1607-D2 Septic Tank

Code: 1607-D2:5
Names: 1607-D2:5; 1607-D2 Inlet Pipe to Replacement System Tile Field

Code: 1607-D2:1 **Classification:** Accepted

Names: 1607-D2:1; Eastern 1607-D2 Tile Field; Original 1607-D2 Tile Field **Reclassification:** Interim Closed Out (3/25/1999)

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The 1607-D2:1 Abandoned Tile Field is a sub-site associated with the 100-D Area sanitary

sewage system. The tile field consisted of a clay pipe drain field positioned approximately 1 to 2 meters (3.3 to 6.6 feet) below surrounding grade. A thick layer of aggregate and native sandy gravel soils were placed around the clay pipes. The 1607-D2:1 site was created in 1944, and sewage liquid from the 553-person-capacity 1607-D2 septic tank discharged to the tile field from 1944 to 1950. The septic tank was designed to capture the solids, and decant liquid effluent which was transported to the tile field. Solids and sludge were retained in the 91,500-liter (24,160-gallon) septic tank (the septic tank is subsite 1607-D2:4).

Closure Info: In 1950 the tile field was partially demolished for the construction of the 116-DR-9 Liquid Effluent Retention Basin, and a replacement tile field (subsite 1607-D2:2) was constructed north of the retention basins. The name "abandoned tile field" was assigned to the infrastructure remaining and adjacent to the 116-DR-9 retention basin. The approximate area of the abandoned tile field sub-site is approximately 1,203 square meters (12,949 square feet). The septic pipelines for this system are subsite 1607-D2:3.

Part of the original tile field was removed during the construction of the retention basin. In December 1997 and January 1998, the remaining tiles of the eastern tile field (subsite 1607-D2:1) were removed and disposed of in the Environmental Restoration Disposal Facility along with the sludge trenches (100-D-4 and 100-D-22).

Excavation of the 1607-D2:1 site began on January 8, 1998, by removing the overburden materials, contaminated soil, and the engineered structure (i.e., clay tiles and aggregate). This first excavation effort removed approximately the top 2 meters (6.6 feet) of soil. All overburden material was found to be contaminated based on field screening results and was disposed at the ERDF with other contaminated material. Contamination was encountered at the base of the first excavation (i.e., below the engineered structure elevation) based on field screening results. A second excavation effort was initiated on January 9, 1998, and was completed on February 4, 1998. The site was judged to be clean based on field screening results. Cleanup verification sampling was initiated at the final excavation elevation of 131.6 meters (431.8 feet).

Based on the sample results from investigation of the 1607-D2 septic tank contents and the immediately adjacent 107-D1 Sludge Pit, the waste site contaminants of concern (COCs) included the following: europium-152, uranium-235, uranium-238, hexavalent chromium, lead, mercury, bis (2-ethylhexyl) phthalate, and polychlorinated biphenyls (PCBs).

During excavation of the overburden materials, field screening was used to distinguish between potentially clean materials and contaminated materials for disposal at the ERDF. The field screening results indicated that all removed overburden material did not meet direct exposure RAGs. The overburden material was disposed of at the ERDF.

At the completion of the remedial action, the area of the excavation was approximately 1,203 square meters (12,949 square feet) at a depth of 3.4 meters (11 feet), and approximately 10,040 metric tons (11,064 tons) of material from the site were disposed at the ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 135 meters (443 feet). Clean backfill will be taken from Borrow Pit 21, which is located due south of the 1607-D2:1 site. The material in the borrow pit has been surveyed in accordance with the SAP and is appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

The SubSite is Part Of:**Code:** 1607-D2**Names:** 1607-D2; 1607-D2 Sanitary Sewer System; 1607-D2 Septic Tank; 1607-D2 Septic Tank and Associated Drain Fields; 124-D-2

Code: 1607-D2:2**Classification:** Accepted**Names:** 1607-D2:2; Northern Tile Field; Replacement
1607-D2 Tile Field**Reclassification:** Interim Closed Out (9/16/2010)**Type:** Septic Tank**Start Date:****Status:** Inactive**End Date:**

Description: This drain field replaced the original drain field in 1950 when the 116-DR-9 Retention Basin was built partially over the top of the original drain field. The replacement drain field serviced buildings in the 100-D Area until 1996 when a new underground septic system was installed to support facilities associated with the 100-D waste sites remediation. Buildings serviced by the replacement drain field included the 189-0 Storage Yard and Mechanical Development Laboratory, 185-D Thermal-Hydraulics Laboratory, 182-D Reservoir and Pump House, 183-D Water Filter Plant, 1700-D Administration and Services Building, and the 105-D Reactor Building.

Closure Info: The cleanup verification package (CVP-2009-00006) has documented that the 1607-D2:2 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the (ROD) (EPA, 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 6). The subsite was also included in the Explanation of Significant Differences for the Remaining Sites ROD (EPA 2009).

Remedial action at the subsite began on April 7, 2008, and concluded on April 23, 2008 with approximately 3,471 bank cubic meters of material removed and disposed to ERDF. The excavation was approximately 100 m (330 ft) long, 60 m (200 ft) wide, and ranges from 1.8 m (6 ft) to 3.1 m (10ft) deep.

During remediation, the inlet pipeline to the drain field was located in the sidewall of the excavation at Washington State Plane Coordinates N 151445, E 573808. A review of the excavation footprint for the 1607-D2:3 subsite (CVP-2000-00004) indicated that a portion of the pipeline north of the perimeter road had not been removed. It was also observed that the active 100-D Area Pump-and-Treat Project pipelines run directly over the ground surface in this location. Therefore, due to the proximity of the pump-and-treat pipelines, this remaining pipeline has been administratively identified as the 1607 -D2:5 subsite and will be remediated at a future date.

A geophysical survey conducted in February 2008 to locate electrical utilities in the vicinity of the 1607-D2:2 Replacement Drain Field, identified surface electrical lines from a nearby pump-and-treat operation. Piping and electrical lines from the pump-and treat operation precluded the excavation of a section of the inlet piping to the replacement drain field. This small section was administratively placed in to the 1607-D2:5 subsite to ensure the section of pipe will be remediated at a later date. Other than the surface electrical lines, the geophysical investigation did not find anything in the data to indicate other structures or hazards at the 1607-D2:2 subsite.

Final cleanup verification samples were initially collected between October 7, 2008 and December 16, 2008. A laboratory error resulted in rejection of most of the mercury data. To mitigate this, the project recollected samples on May 4, 2009 for mercury only. The initial mercury data set is not used for closeout calculations or decisions. Both the initial data set and the replacement mercury data set are presented within the data tables found attached to the 95%

UCL calculation in Appendix A of the CVP. The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix A of the CVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

The SubSite is Part Of:

Code: 1607-D2

Names: 1607-D2; 1607-D2 Sanitary Sewer System; 1607-D2 Septic Tank; 1607-D2 Septic Tank and Associated Drain Fields; 124-D-2

Code: 1607-D2:3

Classification: Accepted

Names: 1607-D2:3; 1607-D2 Septic Pipelines

Reclassification: Interim Closed Out (9/26/2000)

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: This section of the sanitary sewer pipelines runs from Manhole S-250, through the 1607-D2 Septic Tank, and from there to the D Area North Perimeter Road. It has been removed.

Closure Info: Remedial action at the 1607-D2:3 pipeline site began on August 20, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and the underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. On August 30, 1999, the excavation reached the design limit at El. 131 meters (430 feet).

The final COCs for the 1607-D2 septic pipelines are: cesium-137, cobalt-60, europium-152, total chromium, hexavalent chromium, mercury, and lead.

At the completion of remedial action and removal of the engineered structure, the shallow zone excavation was approximately 1,780 square meters (19,200 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). The overburden area was approximately 1,850 square meters (19,900 square feet). Cleanup verification sampling was conducted on December 9, 1999. The excavation has been backfilled to the reference grade of El. 136 meters (445 feet). Backfill was taken from the clean stockpile and/or from other sources of clean material surveyed in accordance with the SAP and that are appropriate for use as backfill.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

The SubSite is Part Of:

Code: 1607-D2

Names: 1607-D2; 1607-D2 Sanitary Sewer System; 1607-D2 Septic Tank; 1607-D2 Septic Tank and Associated Drain Fields; 124-D-2

Code: 1607-D4 **Classification:** Accepted
Names: 1607-D4; 1607-D4 Sanitary Sewer System; 1607-D4 Septic Tank; 1607-D4 Septic Tank and Associated Drain Field; 124-D-4 **Reclassification:** Interim Closed Out (2/23/2006)
Type: Septic Tank **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1968

Description: The site has been remediated and interim closed out. The site consisted of a small septic tank and drain field. The unit was a septic tank and tile field. The tank was 2.5 meters (8 feet 4 inches) deep, constructed of reinforced concrete, and had a 6-person capacity [130 liters (35 gallons) per capita] with an average detention period of 24 hours. The walls were 20 centimeters (8 inches) thick, and the floor was 15 centimeters (6 inches) thick. The tile field was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a minimum of 2.4 meters (8 feet) per capita. The laterals were open jointed and spaced 2.4 meters (8 feet) apart.

Location: The system was located between the 105-D and the 105-DR Reactors.

Process Description: The system received sanitary sewage from the 115-D/DR Gas Recirculation Facility. Historic drawings indicate that the 1607-D4 Septic System consisted of a rectangular prismatic septic tank and tile field. The tank dimensions were 0.6 by 1.2 meters (2 by 4 feet) in plan view and 2.5 meters (8.3 feet) deep. The design waste capacity of the tank was 795 Liters (210 gallons), leaving up to 1.4 meters (4.5 feet) of freeboard/headspace. The tank was constructed of reinforced concrete with 0.2 meters (8-inches)-thick walls and a 0.15-meter (6-inch)-thick floor. Historic piping layouts show the influent to the tank as a 0.15-meter (6 inch) vitrified clay pipe (VCP) running from the southeast corner of the 115-D/DR Building.

Related Sites/ Structures: The site serviced the 115-D and 115-DR (Gas Recirculation Buildings).

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary waste from the 115-D Gas Recirculation Building.

Closure Info: The Remaining Sites Verification Package for the 1607-D4 Septic System (Attachment to Waste Site Reclassification Form 2005-036) (RSVP) has demonstrated that the site has met the objectives for interim closed out status as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) (EPA 1999).

The 115-D/DR facility was decommissioned in 1985 and 1986, including demolition of above-grade features. The septic system may have been filled in as part of the decommissioning of the facility, or at some other time after its operational lifetime ended in 1968.

A geophysical survey conducted in 1992 and field observations made during a site visit in February 2005 were used to confirm the location of the site. Existing historical information was used to identify the contaminants of potential concern (COPCs) for the system. The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included lead, pesticides, and semivolatile organic compounds. Based on further site-specific evaluations of septic systems, polychlorinated biphenyls were also included as COPCs in the work instructions. Confirmatory samples were collected on 7/5/05, sample numbers J03717 through J03719 and J03730, and analyzed for the COPCs.

Examination of the data has led to the conclusion that the site passes the RAGs without further remedial action. In accordance with this evaluation, the confirmatory sampling results support a reclassification of the site to interim closed out. The analytical results from soil and drain field samples were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The results support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 1607-D5 **Classification:** Accepted

Names: 1607-D5; 1607-D5 Sanitary Sewer System; 1607-D5 Septic Tank; 1607-D5 Septic Tank and Associated Drain Field; 124-D-5 **Reclassification:** Interim Closed Out (10/10/2011)

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:**

Description: The site resembles a gravel covered parking area. There are no signs designating the septic and tile field areas.

Location: The unit was located east of the northeast corner of the 181-D Pumphouse.

Process Description: The unit consists of a septic and a tile field. The septic was a concrete tank measuring approximately 3 by 5 ft (0.9 by 1.5 m) in plan and 7 ft 10 in (2.4 m) deep, with a metal cover. The septic tank had a 6-person capacity (35 gal [130 L] per capita) with an average detention period of 24 hours. The walls were 8 in (20 cm) thick, and the floor is 6 in (15 cm) thick. The tile field is constructed of 6-in (15 cm) or 8-in (20 cm) vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet (2.4 m) per capita. The laterals were open jointed and spaced 8 ft (2.4 m) apart.

Related Sites/Structures: The site received effluent from the 181-D (River Pump House). The influent pipe is assigned to waste site 100-D-84:2

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary waste from the 181-D Pumphouse. The flow rate to this unit was estimated at 35 gallons per day (130 Liters per day).

Closure Info: Remedial action at the 1607-D5 waste site was performed between October 22 and 26, 2010. Excavation continued to a maximum depth of 3.3 m (11 ft) until all contaminated soil and debris associated with the waste site had been removed. The post-excavation civil survey is shown in Figure 3. Approximately 500 bank cubic meters (BCM) (654 bank cubic yards [BCY]) of contaminated soil and debris were removed from the excavation and directly loaded out for disposal at the Environmental Restoration Disposal Facility. The originally planned above cleanup level (ACL) stockpile proved to be in an inaccessible location. A second location was planned for the ACL, but it proved to be easier to direct load the material. Therefore, neither of the potential stockpile locations was used. No overburden material was retained for use as clean backfill.

Code: 116-DR-1&2 **Classification:** Accepted

Names: 116-DR-1&2; 116-DR-2; Emergency Crib Trench; 107-DR Liquid Waste Disposal Trench #1; 107-DR Liquid Waste Disposal Trench #2; **Reclassification:** Interim Closed Out (9/26/2000)

116-DR-1

Type: Trench **Start Date:** 1/1/1950**Status:** Inactive **End Date:** 1/1/1967**Description:** The site has been remediated and closed out. It is no longer marked or posted. The site was constructed of two trenches that were later joined together to form a single trench.**Location:** The site is located east of the northeast corner of 107-DR Retention Basin.**Process Description:** Normally, the site received effluent from the 107-D and 107-DR Retention Basins when cooling water was contaminated due to ruptured fuel elements. The trench was used also for a 4-month test period during which the total volume of waste effluent from the 107-D and 107-DR Retention Basins was discharged to the soil column.**Waste Type:** Water**Waste Description:** The site received effluent from the 107-D and 107-DR Retention Basins when cooling water was contaminated due to ruptured fuel elements. In addition to the 4.0E+07 liters (1.06E+07 gallons) of effluent from ruptured fuel elements listed in PNL-6456 (Stenner et al), the site also received 3.87E+08 liters (1.02E+08 gallons) of cooling effluent daily during the four month test.

Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL 1998a). The COCs identified for this site are: americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, and hexavalent chromium.

Closure Info: The site remediation was performed in accordance with an Interim Action Record of Decision (ROD) (EPA 1995). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

Remedial action at the 116-DR-1&2 Trench began on November 25, 1996. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at ERDF. On October 21, 1999, the excavation reached the design limit at elevation 131.1 meters (430.1 feet). At the completion of the remedial action, the total excavation was approximately 9,730 square meters (104,734 square feet) in area with a maximum depth of approximately 5.0 meters (16.4 feet). Approximately 82,768 metric tons (91,236 tons) of material from the site were disposed of at the ERDF.

The contaminants of concern identified for the site include americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90 and hexavalent chromium.

Cleanup verification sampling began on November 30, 1999, and was finished on December 17, 1999. Results of the sampling, laboratory analyses, and data evaluations for the 116-DR-1&2 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

The results indicate that the maximum dose rate above background is 3.6 millirem/year and would occur at present; this dose decreases to 3.8×10^{-2} millirem/year in 1,000 years. The estimated total dose rate in the year 2018 is 2.1 millirem/year. Total dose rate estimates never exceed the direct exposure RAG of 15 millirem/year above background. The only nonradionuclide contaminant of concern is hexavalent chromium; its concentrations are below detection and thus it also meets the remedial action goals.

The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

Code:	116-DR-5	Classification:	Accepted
Names:	116-DR-5; 1904-DR; 1904-DR Outfall Structure	Reclassification:	Interim Closed Out (1/6/2011)
Type:	Outfall	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1967
Description:	The site consists of an open, reinforced, compartmentalized concrete outfall structure that routinely discharged effluent to the Columbia River via the river effluent pipelines (100-D-60). When the river pipelines were blocked, damaged or undergoing maintenance, the flow was diverted to a concrete overflow spillway (flume) (100-D-66).		
Location:	The site is located at the top of the river bank, north of the northwest corner of 116-D-7 (107-D Retention Basin).		
Process Description:	Reactor cooling water collected and temporarily stored in the 116-D-7 and 116-DR-9 retention basins, could be pumped to the river via the 116-DR-5 outfall structure and associated river effluent pipeline (100-D-60).		
Related Sites/Structures:	The site is associated with the D Island Contamination (100-D-67), 107-D Retention Basin (116-D-7), the 107-DR Retention Basin (116-DR-9), 100D Reactor Cooling Water Effluent Lines (100-D-48), the 100DR Reactor Cooling Water Effluent Lines (100-D-49), the 100D River Effluent Lines (100-D-60) and Flumes (100-D-66).		
Waste Type:	Construction Debris		
Waste Description:	This unit received reactor coolant from the 107-D and 107-DR Retention Basins.		
	The contaminants of concern include C-14, Cs-137, Sr-90, U-235, -238, and Pu-239/240.		

Code:	116-DR-9	Classification:	Accepted
Names:	116-DR-9; 107-DR; 107-DR Retention Basin	Reclassification:	Interim Closed Out (1/6/2000)
Type:	Retention Basin	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1967
Description:	This site has been remediated and closed out.		
Location:	This site is located north of the 105-D Reactor Building.		
Related Sites/Structures:	Four sludge trenches were excavated in the 107-D and 107-DR Retention Basin area to dispose of sludge that had accumulated at the bottom of the basins. The trenches were excavated in the Spring of 1953 to facilitate repair of the basins by minor construction forces and were covered after use with about 1.8 meters (6 feet) of clean soil. In 1955 an additional trench was excavated near the southeast side of the 107-DR Retention Basin to receive effluent from the 107-D and 107-DR systems following an undetermined amount of fuel cladding failures.		

Waste Type: Process Effluent

Waste Description: This site received cooling water effluent from the 105-DR Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the basin ranged from 5 curies to over 400 curies. Seventy percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 curies have leached into the concrete floor and walls. The basin was known to have leaked on several occasions.

Closure Info: 116-DR-9 and 100-D-25 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package, CVP-1999-00006, documents that the 116-DR-9 and 100-D-25 waste sites have met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 0), and the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995). A rural residential exposure scenario was assumed in calculating cleanup levels.

The retention basin received cooling water effluent from the 105-DR Reactor from 1950 until 1965. After the 105-D Reactor was deactivated in 1965, the basin remained active until 1967 as part of the 105-D Reactor effluent system. Leakage occurred as unplanned releases in 1951 beneath the basin and outside the south end of the basin when seals in the concrete floor of the basin failed and the pipes pulled away from the basin walls at the retention basin inlet. Waste site 100-D-25, an unplanned release that occurred as floor leaks beneath the basin, could not be distinguished from other contaminated soil. It was remediated with the 116-DR-9 Retention Basin under the provisions for "proximity sites."

Excavation began on October 21, 1997, by removing the overburden materials and underlying contaminated soil. Overburden materials, which were contaminated, were disposed at the ERDF. On December 28, 1998, the excavation had reached the design limits below the base of the engineered structure (El. 130.25 m [427.35 ft]) and cleanup verification sampling was initiated. At the completion of the remedial action, the excavation area floor was approximately 16,352 m² (176,013 ft²) at a depth of 4.75 m (15.6 ft), and approximately 201,519 metric tons (222,122 tons) of material from the site were disposed of at the ERDF. The excavation will be backfilled in the near future with clean fill materials to the reference grade of El. 135.0 m (443 ft).

Contaminated soil associated with the process effluent pipelines was not removed completely, but remained for final remediation with the pipelines. The 100-DR process effluent pipelines are scheduled to be removed during the next year. The 116-DR-9 sidewall areas that are adjacent to future pipeline excavation areas were not sampled as part of the cleanup verification effort. These areas will be sampled and verified clean as part of the effluent pipeline remediation efforts.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, WIDS had shown that no IC restrictions were required but the sites were remediated with deep zone criteria so that Ics actually were required. The Ics for this site have been revised accordingly.

Code: 628-3	Classification: Accepted
Names: 628-3; 628-3 Burn Pit	Reclassification: Interim Closed Out (5/11/2011)
Type: Burn Pit	Start Date:

Status: Inactive

End Date:

Description: The site as roughly oval shaped area with a length of 76 m (250 ft), a width of 12 m (40 ft), and a depth of 1.2 m (4 ft). The center of the burn pit was distinguished by a 1.2-in (4-ft) depression. The waste site showed signs of severe plant stress and soil discoloration, and there was debris consisting of burnt wood, nails, metal pipes, rebar, and glass scattered across the area. The depression shows signs of severe plant stress and soil discoloration. The depression, as well as the area around it, is littered with debris. It appears that at one time cat tractors bulldozed some of the surrounding soil.

Location: The unit is located approximately 300 meters (1,000 feet) east of 128-D-2 and approximately 92 meters (300 feet) east of the D Area Perimeter Road.

Waste Type: Misc. Trash and Debris

Waste Description: Debris, consisting mostly of burnt wood, nails, metal pipes, rebar, and glass, is scattered over the area. In some spots, the site also contains what looks like friable and nonfriable asbestos. The site could not definitely be found in 1992 surveys of the area.

Closure Info: Remedial activities were carried out from March to June 2009. The excavation depth reached a maximum depth of 4.6 m (15 ft) near the center of the pit. All contaminated material consisting of: soil, concrete/debris, suspected asbestos-contaminated material, and metal pipe and concrete debris was disposed of at the Environmental Restoration Disposal Facility (ERDF).

After further review of the post-excavation civil survey and comparison to the geophysical survey the northern excavation boundary was extended. This excavation was completed in January 2010. The additional area of investigation was excavated to 1m (3ft). No debris or indication of previous subsurface disturbance was encountered; therefore, the sample design was not changed to reflect this extended boundary. The geophysical anomalies present in the survey were believed to have been interference from surface debris and/or the basalt layer in this area.

Code: UPR-100-D-1

Classification: Accepted

Names: UPR-100-D-1; Oil Soaked Soil

Reclassification: No Action (4/13/2005)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was an unplanned release that appeared as a small depression surrounded by oil contaminated soil. During the March 1999 visit, a buried pipe was observed to the south of the stained soil.

Location: The site was located approximately 18.3 meters (60 feet) east of the 190-D Building Trampoline Test Facility and 4.6 meters (15 feet) south of the paved road leading to the Trampoline Test Facility.

Release Description: The site contains oil-soaked soil, the source of which could not be determined.

Waste Type: Oil

Waste Description: The source of the oil could not be determined. However, the volume appeared to be small.

Code: UPR-100-D-2

Classification: Accepted

Names: UPR-100-D-2; Effluent Line Leak #1

Reclassification: Interim Closed Out (9/26/2000)

Type: Unplanned Release

Start Date: 1/1/1951

Status: Inactive**End Date:****Description:** This release was remediated with the source pipelines (100-D-48 and 100-D-49) and closed out on September 26, 2000.**Location:** The site is located southeast of the 107-D Basin and west of the 107-DR Basin.**Release Description:** In 1951, extensive leakage of effluent water was detected above ground southeast of the 107-D Basin. A maximum dose rate of 50 millirads/hour was observed at the surface. Two excavations were made to investigate the leakage, but the effluent continued to seep to the surface. In 1951, the area was marked with a rope fence and marked as a "Radiation Area" (see Drawing H-1-4046).**Waste Type:** Water**Waste Description:** The site received radioactively contaminated water from the 107-D/DR Retention Basins.**Closure Info:** 100-D-48:2, 100-D-49:2, UPR-100-D-2 and UPR-100-D-3 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:2/49:2 Pipelines site began in July 1997. Excavation of the site involved removing the overburden materials, contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. In August 1999, the excavation reached the design limit. The excavation design depth generally corresponded with the invert elevation of the pipelines. The pipeline excavation profiles are in the sample design calculation briefs in Appendix D.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 20,475 square meters (220,280 square feet) in area with a maximum depth of approximately 6 meters (20 feet) below ground surface. During the time of excavation and waste disposal (December 1998 through September 1999) at the 100-D-48:2/49:2 Pipelines site, approximately 57,106 metric tons (62,960 tons) of material from 100-DR-1 Operable Unit pipelines were disposed of at the ERDF. Cleanup verification sampling began on August 23, 1999, and was finished on October 20, 1999. Because of the length of the pipeline site, the top-of-excavation elevation ranges from 138 meters (453 feet) near the retention basins to 143 meters (469 feet) near D Avenue.

The CVP demonstrated that remedial action at the 100-D-48:2/49:2 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). Materials from the 100-D-48:2/49:2 Pipelines site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils, including pipeline overburden stockpiles, have been sampled, analyzed, and modeled to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site and in overburden soils pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:2/49:2 Pipelines site is verified to be remediated in accordance with the ROD and may be backfilled. The pipeline overburden is verified as suitable for use as backfill in accordance with the ROD.

Code: UPR-100-D-3**Classification:** Accepted

Names: UPR-100-D-3; Effluent Line Leak #3 **Reclassification:** Interim Closed Out (9/26/2000)
Type: Unplanned Release **Start Date:** 1/1/1951
Status: Inactive **End Date:**
Description: This site was remediated with the source pipelines and closed out on September 26, 2000,
Location: The site is along the south perimeter of the 107-DR Basin.
Release Description: In 1951, extensive leakage of effluent water was caused by pipes pulling loose from the basin wall.
Waste Type: Water
Waste Description: The site was soaked with radioactively contaminated reactor cooling water from the 107-DR Basin.
Closure Info: 100-D-48:2, 100-D-49:2, UPR-100-D-2 and UPR-100-D-3 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-D-48:2/49:2 Pipelines site began in July 1997. Excavation of the site involved removing the overburden materials, contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. In August 1999, the excavation reached the design limit. The excavation design depth generally corresponded with the invert elevation of the pipelines. The pipeline excavation profiles are in the sample design calculation briefs in Appendix D.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 20,475 square meters (220,280 square feet) in area with a maximum depth of approximately 6 meters (20 feet) below ground surface. During the time of excavation and waste disposal (December 1998 through September 1999) at the 100-D-48:2/49:2 Pipelines site, approximately 57,106 metric tons (62,960 tons) of material from 100-DR-1 Operable Unit pipelines were disposed of at the ERDF. Cleanup verification sampling began on August 23, 1999, and was finished on October 20, 1999. Because of the length of the pipeline site, the top-of-excavation elevation ranges from 138 meters (453 feet) near the retention basins to 143 meters (469 feet) near D Avenue.

The CVP demonstrated that remedial action at the 100-D-48:2/49:2 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved interim action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). Materials from the 100-D-48:2/49:2 Pipelines site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF. The remaining soils, including pipeline overburden stockpiles, have been sampled, analyzed, and modeled to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site and in overburden soils pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-D-48:2/49:2 Pipelines site is verified to be remediated in accordance with the ROD and may be backfilled. The pipeline overburden is verified as suitable for use as backfill in accordance with the ROD.

Code: UPR-100-D-4 **Classification:** Accepted
Names: UPR-100-D-4; Unplanned Release: 107-D Basin **Reclassification:** Interim Closed Out (3/26/2001)

zone institutional controls are required.

100-DR-2

Code: 100-D-12 **Classification:** Accepted
Names: 100-D-12; Sodium Dichromate/Acid Railcar and Truck Unload Station and Associated French Drain; Undocumented Liquid Waste Site **Reclassification:** Interim Closed Out (10/23/2000)
Type: Pump Station **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and was interim closed out on October 23, 2000. It is no longer marked or posted. An underground line allowed solutions to be pumped to storage tanks. Before remediation, the site appeared as a small concrete pad with an adjacent 0.9 meters (3 feet) diameter concrete pipe french drain that supported the flushing and draining of lines that were connected to railroad tank cars.

Location: The 100-D-12 site is located in the 100-D Area and is approximately 710 meters (2,329 feet) from the Columbia River. It is located just south of the 183-D and 184-D Buildings next to the railroad tracks.

Release Description: Spills and hose drainage were routinely discharged to the french drain.

Process Description: Undiluted sodium dichromate and acid solutions were pumped through underground lines to storage tanks located outside the 185-D and 190-DR facilities. Prior to remediation, the site appeared as a small concrete pad enclosed by a curb. The containment area drained to an adjacent concrete pipe french drain that supported the flushing and draining of lines that were connected to railroad tank cars. The majority of the spills and hose drainage were routinely discharged to the french drain. Undiluted volumes of sodium dichromate and acid solutions were spilled directly to the soil column at this location.

Waste Type: Chemical Release
Waste Description: Wastes consisted of sodium dichromate and sulfuric acid.

Closure Info: The cleanup verification package (CVP-2000-00016) has documented that the 100-D-12 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Remaining Sites Record of Decision Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1; 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The only Contaminant of Concern (COC) at the site was hexavalent chromium, a non-radionuclide. Remedial action at the site began on November 8, 1999 and was completed on April 19, 2000; when the excavation reached the design limit at El. 140.1 meters (460 feet).

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 202.5 square meters (2,180 square feet) in area with a maximum depth of approximately 2.4 meters (7.9 feet). Approximately 34.5 metric tons (38 tons) of contaminated material were disposed at ERDF. Cleanup verification sampling was performed on May 1, 2000.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that

IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-D-13	Classification:	Accepted
Names:	100-D-13; 100DR Area Sewage Disposal Unit; 124-DR-3; 1607-DR3; Septic Tank D-13; Unnumbered Septic System A	Reclassification:	None
Type:	Septic Tank	Start Date:	1/1/1947
Status:	Inactive	End Date:	1/1/1949
Description:	<p>The site is a septic system installed for use during the construction of the 105-DR Reactor. The system consisted of an IMHOFF tank, a chlorination house, a dosing tank, a filter bed, and associated piping. Most of the system remains in place, except for the chlorination house which has been removed. The septic tank is surrounded by a steel pipe fence. The filter bed is distinguishable as a rock-filled depression with distribution piping visible on the surface. The IMHOFF tank is a reinforced concrete structure with overall dimensions of 7.9 meters (25.9 feet) long, 3.8 meters (12.3 feet) wide, and 7.3 meters (24 feet) deep. The tank is divided lengthwise into three equally sized chambers. A single 15-centimeter (6-inch) pipe passes through the bottom of the partitions that separate the chambers. An influent flume connected to the first chamber controls and distributes flow from the incoming 30-centimeter (12-inch) line. An effluent flume connected to the third chamber controls flow into the 20-centimeter (8-inch) discharge line. A small line from a nearby chlorination house entered at the effluent flume and chlorinated the waste prior to discharge from the tank. The dosing tank is connected to the IMHOFF tank by the 20-centimeter (8-inch) discharge line. The dosing tank is constructed of reinforced concrete. It has surface dimensions of 3.1 meters (10.25 feet) long by 1.7 meters (5.67 feet) wide. It controlled the flow of waste into the adjacent filter bed. The filter bed is a 3.0-meter (10-foot) deep excavation measuring 21.3 meters (70 feet) by 21.3 meters (70 feet) at the surface and 12.2 meters (40 feet) by 12.2 meters (40 feet) at the base. The excavation was filled with 2.5 to 5-centimeter (1 to 2-inch) gravel. A main discharge line with six laterals (three on each side) lies on top of the gravel fill. Sprinkler heads that were tapped into the laterals distributed the treated sewage across the surface of the filter bed.</p>		
Location:	<p>The septic tank is approximately 240 meters (800 feet) east-southeast of the of 105-DR, south of the power line road. The filter bed is approximately 120 meters (400 feet) east of the tank on the north side of the road. The pipeline that flows to the tank has been mapped from the 117-DR Building, and surrounds the 105-DR Building, but no connection to the reactor has been found on drawings.</p>		
Waste Type:	Sanitary Sewage		
Waste Description:	<p>The tank received sanitary waste from temporary construction facilities at 105-DR. The 100-D Area Technical Baseline Report indicates that the tank also received overflow from the high tanks (water towers) at 105-DR, but no drawings could be found to verify this. The tank may have also received waste from the 105-DR Reactor (see Site Comment), so radioactive contamination may be present.</p>		

Code:	100-D-14	Classification:	Accepted
Names:	100-D-14; Unnumbered Septic System (b); Unnumbered Septic Tank #2	Reclassification:	None
Type:	Septic Tank	Start Date:	
Status:	Inactive	End Date:	

Description: The site appears as a vegetation-covered field. A small depression may indicate the presence of the tank. A 10-centimeter (4-inch) cement pipe is likely to be a vent pipe to the drain field. The site is adjacent to a small soil pile.

Location: The tank is located south of the 105-DR Building, outside the 100D perimeter fence and north of Route 2 North.

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary wastes.

Code: 100-D-15

Classification: Accepted

Names: 100-D-15; Debris North of 100-D Area Perimeter Road and Debris South of 100-D Perimeter Road Within 100-D-55; Gravel Pit #2; Pit 21

Reclassification: Interim Closed Out (9/16/2010)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of two separate areas containing debris. The northern pit has been mostly backfilled with construction-type debris. The southern pit (inside Gravel Pit 21) has been partially backfilled and contoured.

Location: There are two solid waste disposal pits containing debris located south of 100-D Area near the perimeter road. One disposal area is located north of the perimeter road and west of the railroad track. The other disposal area is south of the perimeter road, inside Gravel Pit #21 (site code 100-D-55).

Process Description: The 100-Area Technical Baseline Report states that this location contains construction debris consisting of concrete rubble, metallic materials, asphalt material, and broken floor tiles (potentially asbestos-containing). The site was also reportedly used to dispose of empty cans formerly containing oil and cleaning solvents from Army sites located northeast of the 100-D Area.

Related Sites/ Structures: The site is associated with Gravel Pit #21 (100-D-55).

Waste Type: Construction Debris

Waste Description: The southern pit contains construction debris including concrete, metal, asphalt, and other debris. Asbestos may be present. The exact contents of the debris are unknown. In August 1994, Kaiser Engineers Hanford (KEH) removed sediments from the 182-D River Water Basins and deposited the material in the east end of the pit over part of the existing waste site. This disposal option was chosen rather than the demolition landfill option because the sediment did not meet the demolition landfill acceptance criteria. In a September 1997 memo, it was determined that the material classified as "clean soils or clean dredge soils" as defined in Washington Administrative Code (WAC) 173-304 definition that "Clean soils or clean dredge soils" means soils which are not dangerous waste or problem wastes. This classification excludes material from regulation and requires no specific management or disposal requirements. Therefore, there is no requirement to dispose of the material in any type of permitted landfill.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The northern pit is assumed to be the older of the two pits. The pit has been reported to have been used as a disposal site for empty cans collected from army sites located northeast of the 100-D Area. Army wastes could include oil cans, solvent cans, and other miscellaneous solid wastes. Asbestos may be present. The exact contents of the debris is unknown.

Closure Info: The remaining sites verification package (RSVP-2009-066) has documented that the 100-D-15 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the (ROD) (EPA, 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 6).

The northern area of the site contained debris consisting of concrete rubble, metallic and asphalt debris, and other inert materials. Potential asbestos-containing materials were also found to be present. The southern area of the 100-D-15 waste site was used as a disposal location for sediment that was removed during the cleanout of the 182-D Basin. The sediment was observed to contain clamshells and clumps of asphalt-type sealant used in the 182-D Basin.

Remedial action at the site was performed between October 6 and December 1, 2008. The northern location was excavated between 2 m (6.6 ft) and 4 m (13ft) below grade, and the southern location was excavated 3.5 m (11.5 ft) below grade. Approximately 9,198 bank cubic meters (BCM) (10,059 bank cubic yards [BCY]) of soil and debris were removed from the north area, and 4,003 BCM (4,378 BCY) was removed from the south area. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility.

The contaminants of potential concern (COPCs) identified in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL-96-22) include barium, cadmium, chromium (total), lead, mercury, selenium, silver, polychlorinated biphenyls (PCBs), hexavalent chromium, semivolatile organic compounds, pesticides, total petroleum hydrocarbons, volatile organic compounds (VOCs), and asbestos.

The laboratory-reported verification sampling results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS). They were also presented as part of the 95% UCL calculation in Appendix B of the RSVP, Appendix C for the asbestos results. All asbestos results were non-detected with the exception of two results that were reported as "Trace", which is less than 1 % asbestos.

Following site remediation, verification sampling was conducted in September 2009. The results indicated that RAOs and RAGs for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Code:	100-D-23	Classification:	Accepted
Names:	100-D-23; 119-DR Sample Building Drywell	Reclassification:	Interim Closed Out (3/4/2004)
Type:	French Drain	Start Date:	1/1/1959
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed out. The site was a drywell that received drainage from a floor drain in the 119-DR Sample Building.		
Location:	The drywell was located south of the 119-DR Sample Building, between the intake and exhaust ducts for the 117-DR Filter Building.		
Process Description:	The 119-DR Sample Building was situated over the intake and exhaust ducts to the 117-DR Filter Building and was used to sample effluent gases and particulates. The 119-DR Sample Building Drywell was connected to the facility by a 5-centimeter (2-inch) drainage pipe buried at least 0.9 meters (3 feet) below grade. A 1.9-centimeter (3/4-inch) drain line from the building's evaporative cooler connected into the 5-centimeter (2-inch) drain line near the southern edge of the building.		

Related Sites/ Structures: The drywell was associated with the 119-DR Sample Building.

Waste Type: Process Effluent

Waste Description: The drain received effluent from the building's evaporative cooler. It is likely that the drain also received sample waste and janitorial waste since the building had no other drains or connections to the process sewer system.

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, ninel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

Code: 100-D-27 **Classification:** Accepted

Names: 100-D-27; 151-D Substation UPR; A-2 Substation Transformer #A401C Leak **Reclassification:** Closed Out (8/4/2005)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site has been reclassified to Closed Out. The site consisted of an unplanned release within the 151-D Substation.

Location: The release occurred at the #A401C transformer, located in the 151-D Substation. The substation is west of the 105-DR Reactor and southwest of the 105-D Reactor.

Release Description: During a routine inspection of the 151-D substation, a non-PCB oil leak was discovered. Occurrence report RL--WHC-KHELEC-1995-0013 was issued.

Waste Type: Oil

Waste Description: The release was less than 100 gallons (380 L) of non-PCB mineral oil. According to a transformer inventory, oil in the #A401C transformer contains 42.0 parts per million PCBs.

Closure Info: The transformer was power washed, the contaminated material was shoveled into seven 208 liter (55 gallon) drums, and the site was backfilled. The drums were taken to a staging area.

The spill was less than 100 gallons of 42 ppm PCB oil. Therefore, no more than 0.016 kilogram PCB would have been released, significantly less than the CERCLA RQ of 0.45 kilogram (1 pound). The remedial action objectives and remedial action goals in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999) are therefore not applicable to the 100-D-27 waste site. The site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario and no institutional controls are required.

Code: 100-D-28 **Classification:** Accepted

Names: 100-D-28; 190-DR Building Septic System **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of two septic systems, the original septic and the replacement. See the subsites for more detail.

Location: The unit is located southwest of the 190-DR Building.

Process Description: The system processed and disposed of septage from the 190-DR Main Pump House. The 190 DR Building housed the pumps and related equipment used to supply the 105-DR Reactor with cooling water from the 183 DR Clearwells. Until August 2004, part of this building was also used for the storage of radiological material. A confirmatory radiological survey of the area following removal of the material located no contamination (RSR-105DR-04-0077).

Related Sites/ Structures: 190-DR Building and Annex,

Waste Type: Sanitary Sewage

Waste Description: The system received sanitary wastes.

This Site has the Following SubSites:

Code: 100-D-28:1
Names: 100-D-28:1; Replacement Septic System
Code: 100-D-28:2
Names: 100-D-28:2; Original Septic System

Code: 100-D-28:1	Classification: Accepted
Names: 100-D-28:1; Replacement Septic System	Reclassification: Interim Closed Out (10/11/2011)
Type: Septic Tank	Start Date:
Status: Inactive	End Date:

Description: The 100-D-28:1 site consists of a septic tank and drain field located approximately 25-meters (82-feet) southwest of the 190-DR Building. The septic system includes a 2,730 liters (720-gallons) steel tank and a vitrified clay pipe drain field due west of the septic tank used in association with the 190-DR Building.

The 190-DR Annex constructed in 1955 added approximately 21.3 m (70 ft) to the east side of the 190-DR Building. The 190-DR Annex is approximately 3 m (10 ft) below grade. Photographs from 1955 (see attachment) show the depth and amount of disturbance for the excavation of the annex. It does not appear that this septic tank and tile field could have survived the construction of the 190-DR Annex. Likely a new septic system (100-D-28:1) was installed per drawing H-9923 southwest of the 190-DR as a replacement system.

Location: The system is located approximately 25 m (82 ft) southwest of the former 190-DR Building. The drain field is centered at E573491.6, N151105.6 and the septic tank at E573498.7, N151104.8.

Process Description: The system processed and disposed of sewage from the 190-DR Main Process Water Pumphouse.

Waste Type: Not Specified

Waste Description: The waste would be septage from the 190-DR Main Pump House.

Closure Info: Remedial action at the 100-D-28:1 subsite was performed between July 27 and August 17, 2010. Additional remediation was conducted on March 17, 2011 due to residual contamination identified following verification sampling activities. The excavation continued to a maximum depth of 5 m (16 ft) until all contaminated soil and debris associated with the waste site had been removed. Approximately 2,760 bank cubic meters (BCM) (3,610 bank cubic yards [BCY]) of contaminated soil and debris were removed from the excavation and staged in a staging pile area (SPA) to the north of the excavation before being loaded for disposal at the Environmental Restoration Disposal Facility (ERDF). Approximately 1,275 BCM (1,668 BCY) of overburden material was stockpiled for use as clean backfill. However, verification sampling found unacceptable contaminant concentrations and after additional remediation and resampling, contamination was still present above direct exposure remedial action goal (RAGs); therefore, the entire overburden soil stockpile was loaded out for disposal at the ERDF between April 20 and 21, 2011.

Three miscellaneous pipeline sections were encountered during remediation of the 100-D-28:1 subsite. Two of the sections located are part of the 100-D-50:6 pipeline subsite and one section is part of the 100-D-63 pipeline. The 100-D-50:6 and 100-D-63 pipelines will be addressed separately from the 100-D-28:1 subsite.

The debris removed from the 100-D-28:1 subsite consisted of contaminated soil, concrete, and piping associated with the septic tank and drain field. No anomalous material was encountered during excavation.

The SubSite is Part Of:

Code: 100-D-28

Names: 100-D-28; 190-DR Building Septic System

Code: 100-D-28:2

Classification: Accepted

Names: 100-D-28:2; Original Septic System

Reclassification: Rejected (8/1/2005)

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: The 100-D-28:2 site consisted of a septic tank and drain field located approximately 15.2-meters (50-feet) from the northeast side of the original 190-DR Pump House. The tank capacity was 2,839-liters (750-gallons). The 190-DR Annex constructed in 1955 added approximately 21.3-meters (70-feet) to the east side of the 190-DR Building. It does not appear that the 100-D-28:2 septic tank and tile field could have survived the construction of the 190-DR Annex. The 100-D-28:1 septic system was installed per drawing H-9933-DR on the southwest side of the 190-DR Building as a replacement system.

The 190-DR Annex constructed in 1955 added approximately 21.3 meters (70 feet) to the east side of the 190-DR Building. The 190-DR Annex is approximately 3 meters (10 feet) below grade. Photographs from 1955 (see attachment) show the depth and amount of disturbance for the excavation of the annex. It does not appear that this septic tank and tile field could have survived the construction of the 190-DR Annex. Likely a new septic system (100-D-28:1) was installed per drawing H-9923, southwest of the 190-DR as a replacement system.

Based on the historical documentation, the 100-D-28:2 septic system has not existed or been used in over 50 years. A reclassification status of rejected has been assigned for the 100-D-28:2 septic system. The site achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington. The site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario and no institutional controls are required.

Location: This subsite is located approximately 15.2 m (50 ft) from the northeast side of the original 190-DR Pump House.

Waste Type: Not Specified

Waste: No cleanup was performed at this site.

Description:

The SubSite is Part Of:

Code: 100-D-28

Names: 100-D-28; 190-DR Building Septic System

Code: 100-D-43 **Classification:** Accepted

Names: 100-D-43; 118-D-4C; Burial Ground 4C; Buried VSR Thimble Site **Reclassification:** Interim Closed Out (5/13/2010)

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: The site is a solid waste burial ground. The burial ground is in very close proximity to the (exhumed) 152-centimeter (60-inch) effluent lines.

Location: The site is located east of the 105-D Reactor Building, outside the reactor security fence and south of the railroad spur that services 105-D.

Waste Type: Equipment

Waste Description: The waste is a buried Vertical Safety Rod (VSR) thimble. The VSR thimbles were made of aluminum similar to the that used in the process tubes and should contain similar isotopic composition. Sampling of process tubes was conducted in March 1967. The radionuclide levels, when decay corrected by Dorian and Richards to March 1977, were 5.9E+03 picocuries of manganese-54 per gram of aluminum and 2.5E+07 picocuries of cobalt-60 per gram of aluminum. When buried, the thimble's exterior surfaces would also have been contaminated with activated graphite products and potassium borate.

Closure Info: 100-D-42, 100-D-43 and 100-D-45 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP-2009-00004) demonstrates that the 100-D-42, 100-D-43, and 100-D-45 waste sites have met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Records of Decision (EPA 1999 and 2000). The 100-D-42 Buried VSR Thimble Site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (EPA, 2004). The 100-D-43 and 100-D-45 Buried VSR Thimble Sites were included in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2, Operable Units (EPA 2000).

Due to the close proximity to each other and the type of debris encountered during excavation, the three sites were included in one CVP and interim closed out as one decision unit.

Remedial action at the sites began on September 6, 2007, and was completed on April 22, 2008. Contaminated soil and debris were excavated and removed from the burial grounds for shipment to ERDF. Field observations during excavation indicated the presence of VSR thimbles in two of the three burial grounds. Only concrete debris and plastic sheeting were found to be present in the 100-D-42 Burial Ground. The 100-D-43 Burial Ground contained VSR thimbles and other reactor hardware. Mastic, aluminum pipe, VSR thimbles, reactor hardware, and a drum containing rags were found in the 100-D-45 Burial Ground.

One anomaly was encountered in the 100-D-43 Burial Ground. A 57-L (15-gal) metal container partially filled with liquid was found during excavation. The container was found to have been breached and the contained liquid is suspected to have been water used for dust suppression during excavation activities. No suspect spent nuclear fuel was present in the burial grounds.

The remaining soils at the 100-D-42, 100-D-43, and 100-D-45 waste sites have been sampled, analyzed, and modeled. The results of this effort indicate that the materials containing COCs/COPCs at concentrations exceeding RAGs have been excavated and disposed at ERDF. These results also indicate that residual concentrations will support future land uses that can be

represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The excavation area has a maximum depth of approximately 7 m (23 ft). However, the entire excavation area is considered one decision unit and meets the more restrictive shallow zone cleanup criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code: 100-D-46 **Classification:** Accepted
Names: 100-D-46; 118-D-4A; Burial Ground 4A **Reclassification:** Interim Closed Out (3/1/2001)
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**

Description: This site has been remediated and interim closed out as part of the excavation for the 116-D-1A and 116-D-1B Trenches. The site was a 19 by 59-meter (62 by 195-foot) construction burial ground. Both of the referenced drawings refer to the site as Burial Ground No. 4A.

Location: The site was approximately 30 meters (100 feet) east of the 105-D Reactor Building.

Process Description: The 100-D-46 site received radioactive and nonradioactive solid wastes and construction debris generated from various reactor modifications from the 105-D Reactor.

Related Sites/ Structures: This burial ground received debris from the 105-D Reactor.

Waste Type: Construction Debris
Waste Description: Potential contaminants include: Co-60, Ni-63

Closure Info: 116-D-1A, 116-D-1B and 100-D-46 were addressed as a group. The information below documents information for the group of sites.

The 116-D-1A/116-D-1B Storage Basin Trenches and the 100-D-46 Burial Ground were remediated together, with the documentation presented in the same Cleanup Verification Package (CVP) and all sites are referred to as the 116-D-1A/116-D-1B site.

Remedial action objectives (RAOs) and goals (RAGs) for the 116-D-1A/116-D-1B site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995) and the Remedial Design Report/Remedial Action Work Plan (RDR/RAWP) (DOE/RL-96-17).

The selected remedial action for the 116-D-1A/116-D-1B site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, RAGs were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern (COPCs). Waste site COCs and COPCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22).

The COCs for this site were cesium-137, cobalt-60, europium-152, europium-154, plutonium-

239/240, strontium-90, uranium-238, americium-241, and hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 2,648 square meters (28,470 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 10,987 metric tons (12,111 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF).

The CVP demonstrated that remedial action at the 116-D-1A/116-D-1B site achieved the RAOs and corresponding RAGs established in the approved interim action ROD and RDR/RAWP. The remaining soils at the 116-D-A/116-D-1B site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-D-1A/116-D-1B site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF, that residual COC concentrations in the shallow zone will support future land uses that can be represented (or bounded) by rural-residential scenario, and that residual COC concentrations throughout the site are protective of groundwater and the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The 116-D-1A/116-D-1B site is verified to be remediated in accordance with the ROD.

Code: 100-D-47	Classification: Accepted
Names: 100-D-47; 118-D-4E; Burial Ground 4E; Construction C.G. 558-Rod Burial	Reclassification: Interim Closed Out (1/15/2010)
Type: Burial Ground	Start Date:
Status: Inactive	End Date:
Description: 100-D-47 is located within the 118-D-4 cobble field, but is not separately marked.	
Location: The site is located east of the 105-D Reactor Building, outside the reactor exclusion area fence and south of the railroad spur that services the reactor building. The burial ground is west of Burial Ground 4F (118-D-4) and south of Minor Construction Burial Ground #5 Pit (100-D-40) and Trench (100-D-41).	
Process Description: The site is a burial ground used to dispose of fuel rod waste during project CG-558.	
Waste Type: Equipment	
Waste Description: The site is described as a rod burial site. The type and quantity of rods disposed of at this site is not known. Potential contaminants include: C-14, Co-60, Ni-63, H-3, Nb-94, Ni-59, Pd-102, Sm-151, Tc-99, Am-241, Ag-108m, Ba-133, Cs-137, Eu-152 and 154, Pu-238, 239 and 241, Ca-41, Cd-113m, Kr-85, Zr-93, cadmium, lead.	
Closure Info: The Cleanup Verification Package, CVP-2009-00002 documents that the 100-D-47 Burial Ground 4E waste site has met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (Burial Grounds ROD).	

Remedial action began on January 16, 2008, and continued through March 20, 2008. A total of approximately 2,800 bank cubic meters (BCM) (3,660 bank cubic yards [BCY]) of material was removed for disposal at ERDF. Approximately 247 BCM (323 BCY) of overburden and layback was stockpiled for use as clean fill. The material excavated was consistent with the

burial of scrap (piping, concrete, valves, etc.) from miscellaneous equipment modifications accomplished during Project CG-558. The horizontal control rods, if present, were not distinguishable from the other debris.

The 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP) identified COCs for the site as cobalt-60 and nickel-63. In addition, the work instruction for verification sampling added cesium-137, europium-152, europium-154, strontium-90, plutonium-238, plutonium-239, plutonium-240, uranium-238, chromium (total), lead, and mercury to the COC list. Carbon-14 was identified as a contaminant of potential concern (COPC) based on the potential presence of activated graphite in wastes disposed to the site. Boron was added as a COPC as the chemical was applied to the horizontal control rods during manufacture. Due to a site-wide effort to identify the source of chromium contamination in the groundwater, hexavalent chromium was added as a COPC. Finally, asbestos was included as a COPC as asbestos-containing material was found in the burial ground.

The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicated that the materials containing COCs at concentrations exceeding RAGs have been excavated and disposed at ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The excavation area has a maximum depth of approximately 5.5 m (18 ft), which included both shallow zone and deep zone soils. However, the entire excavation area was considered one decision unit, and will be closed out using the more restrictive shallow zone cleanup criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The site is verified to be remediated in accordance with the Burial Grounds ROD.

The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix E or in Appendix F of the CVP for the asbestos results.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils. The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code: 100-D-54	Classification: Accepted
Names: 100-D-54; Drywell Near Fire Facility Gravel Scrubber	Reclassification: Interim Closed Out (3/4/2004)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The site was a 56-centimeter (28-inch) drywell. The unit was constructed of concrete pipe and had a steel cover. When opened during a field visit, the drywell was found to be approximately 1.5 meters (4.9 feet) deep with a 5-centimeter (2-inch) pipe entering it near the bottom on the east side.	
Location: The site was located approximately 5.5 meters (18 feet) southwest of the southwest corner of the 119-DR Sample Building.	
Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.	

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, niel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

Code: 100-D-62	Classification: Accepted
Names: 100-D-62; 183-DR Headhouse Septic Tank	Reclassification: None
Type: Septic Tank	Start Date:
Status: Inactive	End Date:
Description: The septic system received sanitary sewage from the 183-DR headhouse. The entire 183-DR water treatment facility is a nonradiological area; therefore, the 100-D-62 septic system waste site is not considered radiologically contaminated. This system was designed for the use of 6 people with a 2,271 L (600 gal) capacity.	
Location: The septic system is located about 15.2 m (50 ft) south of the 183-DR Head House and west of	

the 183-DR Flocculation Basin.

Process Description: The 100-D-62 septic system waste site received sanitary sewage from the 183-DR water treatment facility headhouse. The 183-DR water treatment facility was operational from 1952 to 1964, per documentation these facilities were demolished to grade in 1978. The operational period of the septic system is assumed to be the same as the 183-DR facility. The 183-DR water treatment facility filtered and chemically treated raw Columbia River water prior to use to cool components within the 105-DR Reactor. Sulfuric acid, potentially containing impurities such as lead and mercury, was added to raw river water prior to entry into the flocculation basins. Sodium dichromate was added to the water in the filter building to inhibit metal corrosion of reactor components. The 183-DR headhouse served as a receiving, storage, and transfer point for sodium dichromate. Sodium dichromate was received from the 185-D Building into one or more storage tanks located in the equipment room in the northeast corner of the headhouse on the ground floor. The sodium dichromate solution was pumped via an overhead line across the flocculation and sedimentation basins to the eastern end of the filter building. It was then injected into a mixing flume that was located along the eastern side of the building. The 183-DR headhouse was the western most building of the water treatment facility. The building was 34 m by 24 m (1.10 ft by 80 ft) and supplied an appropriate mixture of chemicals to provide the desired treated water to the reactor. River water entered the headhouse through two 9.1 cm (36 in) diameter steel pipes. The 183-DR headhouse contained inlet control valves, flash mixer chambers, chlorinators, and the ferric sulfate, lime, and silicate storage and feeding equipment used to chemically treat water. The 183-DR headhouse received 10% sodium dichromate solution from the 185-D Building through a 7.6 cm (3 in) diameter pipeline that connected with two tanks, each with a 15,142 L (4,000 gal) capacity. From the storage tanks, two, 1.9 cm (0.75 in) diameter sodium dichromate pipes crossed above the flocculation and sedimentation basins where they entered the sample room and mixing pumps in the filter building.

Related Sites/ Structures: The site was associated with the 183-DR Head House.

Waste Type: Sanitary Sewage

Waste Description: The waste is the remaining septic system (tank and piping) and any remaining septage.

The Contaminants of potential concern (COPCs) for the 100-D-62 waste site were identified based on existing historical information for the 183-DR water treatment facility and contaminants associated with previously sampled septic systems. The COPCs for the 100-D-62 septic system include constituents associated with the chemicals used in the 183-DR headhouse: chromium, hexavalent chromium, mercury, lead, and anions. Although not COPCs, arsenic, antimony, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc concentrations will be evaluated by performing the expanded inductively coupled plasma metals analytical list. Based on findings from other septic systems in the 100-D Area, semivolatile organic compounds, pesticides, and polychlorinated biphenyls are also considered COPCs. Additional COPCs may be identified as part of planning for remedial actions.

Radionuclides are not COPCs for this site. However, the presence of radiological contaminants should be evaluated using field radiological survey instrumentation (capable of detecting alpha, beta, and gamma radiation) during remediation of the septic system. If radiological activity is detected during remediation, the verification sampling work instruction will incorporate specific requirements for radionuclide analysis.

Code: 100-D-77

Classification: Accepted

Names: 100-D-77; 183-DR Filter Building; 183-DR Flocculation Basins; 183-DR Head House; 183-

Reclassification: None

DR Sedimentation Basins; Acid Facility; DR
Reactor Water Treatment Facility; Sodium
Dichromate Systems

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The entire water treatment system was demolished to grade. The flocculation and sedimentation basins remain below grade and were demolished in situ. The site includes the sodium dichromate systems that were located within the 183-DR Head House and 183-DR Filter Building, Acid Facility, the six 183-DR Flocculation Basins, and the six 183-DR Sedimentation Basins, all of which were components of the cooling water treatment system to support the 105-DR Reactor.

Location: The site is located west of 105-DR, west the remediated 183-DR Clearwells (126-DR-1).

Process Description: These components are of interest because they stored, mixed, or processed liquid contaminants of concern, especially sodium dichromate and sulfuric acid (potentially contaminated with lead and mercury). The sedimentation basins and possibly the flocculation basins received demolition debris from the 183 DR area facilities that may have been contaminated. Sodium dichromate was supplied to the 183-DR Head House through a 7.6 centimeter (3 inch) diameter pipeline (100-D-56) that entered the west side of the 183-DR Head House. The 183 DR Head House contained the inlet control valves, flash mixer chamber, chlorinators, ferric sulphate and lime storage, and feeding equipment, silicate and sodium dichromate solution storage and feeding equipment. The 183-DR Head House had its own sodium dichromate storage facility that consisted of two tanks with a 15,200 liter (4,000 gallon) capacity. Sodium dichromate solution was pumped and injected into the process water after the filters in the filter building by the proportioning pumps in the head house. The 183-DR Filter Building also received sodium dichromate from the 183-DR Head House. Two 1.9 centimeter (0.75 inch) diameter sodium dichromate pipelines extended from the mixer in the 183-DR Head House, over the flocculation and sedimentation basins, to the 183-DR Filter Building where it entered the sample room, mixing pumps, and flume. Acid Facility: The Acid Facility was located on the north side of the 183-DR Head House. Sulfuric acid was received by railroad car and stored in two outside above grade acid storage tanks. The acid facility contained two acid storage tanks (No. 1 & 2), two acid pumps, car spot, acid head tank, one drywell, two sumps, acid piping, pipe flume/trench and an acid pit (H-1-5662). The acid pumps were designed to transport sulfuric acid from the railroad cars to the storage tanks and from the storage tanks to the acid head tank (H-1-5663). The GPS coordinates for the acid pumps are E573251, N151223. The railroad car spot was located west of the pipe trench and south of acid storage tank No. 1. Sulfuric acid was unloaded at this location and pumped to either storage tank No. 1 or 2 (H-1-5663). Between the sulfuric acid tanks was a pipe flume/trench that contained seven pipes that included, two 5 centimeter (2 inch) sulfuric acid pipes (100-D-83), a 10 centimeter (4 inch) overflow pipe, a 2.5 centimeter (1 inch) low pressure steam pipe, 3.2 centimeter (1.25 inch) compressed air pipe, 5 centimeter (2 inch) lime slurry pipe, and a 5 centimeter (2 inch) filtered water pipe (H-1-5663). From the acid tanks, material was transported through the pipe trench to the acid head tank then to the 183-DR Head House. Each of the other pipes also connected to the northwest wall of the 183-DR Head House (H-1-5662). The acid head tank was located on the east side of the pipe trench and south of acid tank No. 2. A 5 centimeter (2 inch) sulfuric acid line and a 5 centimeter (2 inch) sulfuric acid drain line connected the tank to the pipe trench. Another 5 centimeter (2 inch) pipe connected to the flume/trench between the 183-DR Head House and the flocculation basin (H-1-5663). The GPS coordinates for the acid head tank are E573256, N151222. There is one drywell and two sumps associated with the acid facility. The 31 centimeter (12 inch) diameter drywell was located on the west side of the acid trench and south of acid tank No. 1 (E573251, N151220). There is a sump located on the west side of acid tank No. 1. The sump was a 61 centimeter (24 inch) diameter feature that was installed in 1957 (E573248, N151121). The second sump is west of the pipe trench and the

acid pumps. It is 61 centimeter (24 inch) in diameter (H-1-5663) (E573249, N151232). The acid pit was located north of the acid storage tanks. The pipes in the flume/trench drained into the pit (H-1-5663) (E573252, N151239). The former site of the tanks and the unloading and transfer systems have the potential for contaminated soils caused by leaks and spills (potential lead and mercury). Although the facility has been demolished, subsurface contamination may be present.

Head House The 183-DR Head House was the western most segment of the water treatment facility. The building contained three floors that included a basement. The basement contained a sump pit. The first floor contained the equipment room, electrical room, control room, chlorinator room, lab, and chlorine room. The top floor contained the chemical feeder (H-1-915). The dimensions were 34 m by 24 meters (110 feet by 80 feet). It was designed to supply the appropriate mixture of chemicals to provide the desired water treatment to the reactor. Chemicals were received by railcar at the train shed located on the west side of the Head House. River water entered the west side of the head house through two 91 centimeter (36 inch) diameter steel pipes. The 183-DR Head House contained the inlet control valves, flash mixer chamber, chlorinators, ferric sulphate and lime storage, and feeding equipment, silicate and sodium dichromate solution storage and feeding equipment used to chemically treat water (HDC-1418). Alum, sulfuric acid, chlorine and sodium dichromate were mixed in the facility. The 183-DR Head House never received sodium dichromate in pure form. It received a 10% sodium dichromate solution from the 185-D Building through a 7.6 centimeter (3 inch) diameter pipeline (100-D-56) that connected with two tanks, each with a 4,000 gallon capacity. From the storage tanks, two 1.9 centimeter (0.75 inch) diameter sodium dichromate pipes crossed above the flocculation and sedimentation basins where the pipes entered the sample room and mixing pumps in the filter building. From the filter building treated water entered the 190-DR Storage Tanks (H-1-9147, H-1-9601, HW-28360, and SK-1-8261). Water treated with sodium dichromate entered the 190-DR Clearwells followed by the 190-DR Pump House and through the pipe tunnels to the 105-DR Reactor. From the reactor, effluent was pumped to the retention basin (116-DR-9) and to the outfalls (100-D-65 and 116-DR-5). Sulfuric acid and sodium dichromate were mixed in the facility. Sulfuric acid was received from the Acid Facility into the head tank. Sodium dichromate was received through the 7.6 centimeter (3 inch) pipelines (100-D-56) from 185-D Building into two storage tanks, located on the ground floor of the Equipment Room in the northeast corner of the head house. Sulfuric acid was added immediately to the river water arriving from the 182-D Reservoir to adjust the pH. With the addition of the sulfuric acid early in the water treatment system, there is a potential for trace amounts of lead and mercury in the flocculation basins, sedimentation basins, and filter buildings.

183-DR Flocculation and Sedimentation Basins The flocculation and sedimentation basins received hundreds of millions of gallons of river water treated with sulfuric acid. The 183-DR flocculation and sedimentation basins were designed to allow heavier particulate matter to settle out of the water before it entered the filter building. The flocculation basins were located between the 183-DR Head House and the sedimentation basins. The flocculation basins contained six chambers, each containing a paddle wheel to mix chemical additives. The six chambers were 112.5 meters (369 feet) wide and 13 meters (43 feet) wide (H-1-9212). Also located in the basins were at least two drywells (H-1-9213 and H-1-9214 sh2). The sedimentation basins joined the east side of the flocculation basins and also contained six chambers. There were six sludge hoppers, one for each basin, near the west wall of the sedimentation basins (H-1-9211, H-1-9212, H-1-9216). Combined they were 112.5 meters (369 feet) wide, 58.5 meters (200 feet) long, and at least 5 meters (16 feet deep). The sedimentation basins later received demolition material from the D & D of the head house and the filter building in 1978 (both of which may have had sodium dichromate, mercury, and/or lead contamination). This component of the site is analogous to the 183-B flocculation and sedimentation basins contamination.

183-DR Filter Building The filter building received water treated with sodium dichromate and sulfuric acid. The 183-DR Filter Building was located on the east side of the sedimentation basin. The filter building contained a pipe galley and operating floor. The operating floor contained the ventilation equipment, switchgear room, pump room, and suction header and hot well bay. (H-1-9401). The facility was 171 meters by 15 meters (560 feet by 52 feet) and contained two halves with a gullet between them. The

original filters were modified and replaced with 30.48 centimeters (12 inch) of graded gravel, 15 centimeters (6 inch) of sand and 61 centimeters (24 inch) of crushed and graded anthracite coal. Water entered the gullet from the influent flume through an influent valve and flowed to both halves of the filter components through port openings. There were 10 filters in the facility. From the filter building, water entered the 190-DR Clearwells and pumphouse (H-1-9606). After demolition, the facility was disposed of in the 183-DR sedimentation basins.

Related Sites/ Structures: The 183-DR Head House is on the west side and immediately adjacent to the 183-DR Coagulation Basins. The 183-DR Filter Building is located between the 183-DR Sedimentation Basins and the 190-DR Storage Tanks.

Waste Type: Demolition and Inert Waste

Waste Description: The waste form would be contaminated soil from leaks and spills during operation, and contaminated fill material from the demolition of the two buildings. Sodium dichromate, lead, and mercury may be present under the site footprint and in the flocculation and sedimentation basins.

Code: 100-D-94

Classification: Accepted

Names: 100-D-94; Dichromate Contaminated Pit Associated with 187-DR

Reclassification: No Action (3/31/2011)

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date:

Description: The site consists of an area of chromium observed in a pit under the DR water tower. This area was identified during the D Area orphan site evaluation.

Location: The site was directly under the 100-DR water tower south of the 105-DR Reactor.

Process Description: This site served as a valve pit for process water stored in the 187-DR water tower. The water tower provided emergency cooling water to the 105-DR reactor. The reinforced concrete valve pit with 1.06 m (3.5 ft) thick floor slab, 0.3 m (1 ft) thick side walls and 0.76 m (2.5 ft) thick roof, was located below ground directly beneath the tank. A central riser extended into this pit from the water tank.

While excavating Test Pit 3 on August 24, 2010 (during confirmatory sampling of 100-D-83:4), beta and gamma radiation up to 6,000 dpm was detected on broken pipe debris approximately 0.3 m (1 foot) to 2.4 m (8 feet) below ground surface (EL-1649, pgs 32-33).

Related Sites/ Structures: This site is associated with the 187-DR high tower.

Waste Type: Process Effluent

Waste Description: Potential Contaminant of Concern, Chromium.

Code: 100-D-100

Classification: Accepted

Names: 100-D-100; Sodium Dichromate Near Southern Portion of 100-D-56

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of chromate contaminated stained soil near the former sodium dichromate/

acid railcar and truck unloading station (100-D-12).

Location: The stained soil was located in an area north of the 183-DR Headhouse and approximately 50 meters (164 feet) south of Paddock Street, adjacent to the remediated 100-D-56 pipeline. The staining was between the 100-D-56 pipelines and the railroad tracks that previously serviced the 183-DR building. The lateral and horizontal extent of contamination has not been defined. The center of the site is located at Washington State Plane coordinates, E 573351, N 151359.

Process Description: To inhibit corrosion, sodium dichromate was added to the reactor cooling water. Initially the chemical was prepared in the 108-D Chemical Pump House. The concentrated solution was pumped to feed tanks in the 105-D and 185-D Buildings. The preparation of the sodium dichromate feedstock was relocated from the 108-D Chemical Pump House to the 185-D Deaeration Plant in 1950. Two 7.6 centimeter (3 inches) diameter dichromate lines (100-D-56) were installed between the 185-D building and 183-DR building during the 100-DR Water Plant construction. A new spur track was also installed leading to the 183-DR building from the existing railroad tracks south of the 186-D building.

Related Sites/ Structures: The nearest structures (including those previously demolished) include the railroad spur leading to the 183-DR building and the sodium dichromate/ acid railcar and truck unloading station (100-D-12). The stain was approximately 38 meters (125 feet) south of the 100-D-12 waste site.

Waste Type: Process Effluent

Waste Description: The waste consists of hexavalent contaminated soil. The potential contaminant of concern is hexavalent chromium.

Code: 116-D-8

Classification: Accepted

Names: 116-D-8; 100-D Cask Storage Pad

Reclassification: Interim Closed Out (8/10/2011)

Type: Storage

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1975

Description: The site is a rectangular pad covered with gray grout (shotcrete). It is surrounded with Underground Radioactive Material signs. It had also been posted with Cave-in Potential signs, but the Cave-in potential signs were removed in November 1999.

Location: The site is located on the west side of the 100-DR Reactor, outside the fence.

Process Description: The concrete pad had two drains. The drain that handled pad decontamination and rain runoff, discharged into the 105-DR process sewer. The second drain discharged to a french drain, the location of which is unknown; however, an excavation that may be the drain was dug in 1949. There may also be a french drain beneath the loading dock, located on the west side, that provided drainage for storm runoff which is likely to be contaminated. The pad has been stabilized with a sprayed grout material and reinforced with a metal mesh material. There are two structures just south of the pad - one is a red aluminum storage tank and the other appears to be a furnace or shipping cask.

Related Sites/ Structures: The site was associated with the 1607-DR3 Sanitary Sewer Pipelines subsite and may discharge to the 100-D-50:9 pipeline.

Waste Type: Chemicals

Waste Description: This site contains trace amounts of radionuclides and decontamination chemicals.

Code: 118-D-1

Classification: Accepted

Names: 118-D-1; 100-D Burial Ground No. 1 **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1967

Description: This unit contains many trenches running north and south. Typically, the trenches are 90 meters (300 feet) long by 6 meter (20 feet) wide and 6 meters (20 feet) deep with a 6 meters (20 feet) of space between them. Several trenches are greater than 6 meters (20 feet) deep. A 106 centimeter (42 inch) diameter, reinforced concrete water pipe runs through the northwest corner of the burial ground boundary, but not through any of the waste trenches (see WIDS sitecode 100-D-50).

Location: The unit is located south of the 105-DR Building just outside of the 100-D Perimeter Fence.

Waste Type: Equipment

Waste Description: The unit was used for the disposal of irradiated dummies, thimbles, rods, gun barrels, and other contaminated solid waste. It may contain spent nuclear fuel elements. Potential contaminants include: H-3, C-14, Co-60, Ni-63, Sr-90, Ag-108m, Cs-137, Eu-152, Eu-154, am-241, Pu-238,239 and 241, Sm-151, Se-79, Tc-99, U-235 and 238, Kr-85, Zr-93, cadmium, lead, mercury. Historical research identified some specific buried items that include a one ton Aimer track cut into 12 pieces, mattress plate extensions, poison pieces, vertical safety rods, rod guides and tips, shield plugs and contaminated soil.

Code: 118-D-2 **Classification:** Accepted
Names: 118-D-2; 100-D Burial Ground No. 2 **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1970

Description: The 118-D-2 waste site includes the entire disturbed area visible in historical aerial photographs that was used as the 100-D Burial Ground No. 2. The two subsites are: 118-D-2:1, 100-D Burial Ground No. 2 Trenches and Disposal Pits 118-D-2:2, Anomaly Characterization Area

Location: This unit is located 400 meters (1,312 feet) west-southwest of the 183-DR Headhouse.

Process Description: Refer to the subsites for the process description.

Waste Type: Equipment

Waste Description: The unit was used for miscellaneous contaminated solid waste such as irradiated dummies, splines, vertical safety rods, thimbles, and gun barrels. Waste includes 16,329 kg of aluminum tubes, 36287 kg of aluminum spacers, 89,040 kg of lead poison slugs, 3719 kg of cadmium poison slugs, 5987 kg of aluminum poison slugs, 54 kg of lead and 16,329 kg of miscellaneous metallic waste. This burial ground has the potential to contain spent nuclear fuel rods. Beginning in April 1966, 100-N Area solid wastes were also buried here. A large fire in this burial ground in March 1958. The large volumes of water that were required to extinguish the fire could have potentially washed contaminants into the soil column beneath the burial ground. Potential contaminants include H-3, carbon-14, cobalt-60, Ni-63, Sr-90, Ag-108, Ba-133, Cs-137, Eu-152 and 154, Pu-238, 239 and 241, Ca-41, Cd-113, Kr-85 and Zr-93.

This Site has the Following SubSites:

Code: 118-D-2:1
Names: 118-D-2:1; 100-D Burial Ground No. 2 Trenches and Disposal Pits

Code: 118-D-2:2
Names: 118-D-2:2; Anomaly Characterization Area

Contaminated gravel from the road was removed. A can of water into which pieces downstream of ruptured slugs were removed from the storage basin were buried. Water samples showed $1.1E-3$ uc/cc. All material are assumed to be buried in 118-D-2.

In 1951, a VSR thimble section with a reading of 5r/hr was momentarily removed from the burial trench. A box containing swabs from a process tube from 105-D were buried. That same year, from the 105-D decontamination vat and two small chips were found during the removal of a tip-off contained dosage rates of 200 and 10r/hr respectively. All material was believed to be buried in 118-D-2.

Location: The site is located 417 meters (1,368 feet) southwest of the 183-DR Headhouse.

Process Description: The waste site was the primary burial ground for the disposal of 105-D Reactor operations waste, including irradiated dummies, splines, rods, thimbles, and gun barrels. Each pair of pits was constructed by stacking railroad ties, creating two spaces with interior dimensions of approximately 1.8 by 1.8 m (6 by 6 ft) that shared a common wall. The structures were built within an excavation 7.3 m (24 ft) wide by 7.3 m (24 ft) deep. All were covered with 1.8 m (6 ft) of soil. It was extended in April of 1966 to provide space for the burial of contaminated solid wastes from N-Area.

The SubSite is Part Of:

Code: 118-D-2

Names: 118-D-2; 100-D Burial Ground No. 2

Code: 118-D-2:2

Classification: Accepted

Names: 118-D-2:2; Anomaly Characterization Area

Reclassification: None

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of the northern portion of the 118-D-2 burial ground where geophysical testing revealed that no waste was buried (BHI-00064). The area measures 5661 square meters (1.4 acres).

Location: The site is located 379 meters (1,243 feet) west-southwest of the 183-DR Headhouse.

Process Description: The anomaly characterization area was used to characterize anomalous materials found in the 118-D-2 Burial Ground during remediation.

The SubSite is Part Of:

Code: 118-D-2

Names: 118-D-2; 100-D Burial Ground No. 2

Code: 118-D-3

Classification: Accepted

Names: 118-D-3; 100-D Burial Ground No. 3

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1973

Description: The site encompasses the 100-D Burial Ground Number 3 which consists of two subsites. Subsite one contains multiple (6 to 8) trenches running east and west. Subsite two contains the fuel characterization area and the anomaly characterization area.

Location: The unit is located 106.7 meters (350 feet) east of the 105-DR Building.

Process Description: The burial ground was the primary disposal site for 105-DR Reactor operations waste, including irradiated dummies, splines, rods, thimbles, and gun barrels. The burial ground has the potential to contain spent nuclear fuel elements. The site also contained a burning pit used to dispose of low-level radioactive combustible materials. The eastern boundary was used for the disposal of 100-N solid wastes.

Related Sites/ Structures: The site received waste from the 105-DR Reactor and 100-N area solid waste.

Waste Type: Equipment

Waste Description: The unit contains miscellaneous contaminated solid wastes and irradiated dummies, splines, rods, thimbles, and gun barrels. This burial ground has the potential to contain spent nuclear fuel rods. It was also used for disposal of 100-N solid wastes. Potential contaminants include: H-3, C-14, Co-60, Ni-63, Sr-90, Ag-108m, Cs-137, Eu-152, Eu-154, Kr-85, Zr-93, Cd-113, Se-79, Tc-99, Sm-151, Am-241, Pu-238, 239 and 241, U-235 and 238, Ba-133, cadmium, lead, and mercury.

Waste Type: Equipment

Waste Description: The waste site received 23.8 tons of lead, 97 tons of aluminum, 137.7 tons of Pb/Cd, 1 ton of boron, and 0.06 tons of graphite.

This Site has the Following SubSites:

Code: 118-D-3:1

Names: 118-D-3:1; 100-D Burial Ground No. 3 and Process Cells

Code: 118-D-3:2

Names: 118-D-3:2; Fuel and Anomaly Characterization Areas

Code: 118-D-3:1

Classification: Accepted

Names: 118-D-3:1; 100-D Burial Ground No. 3 and Process Cells

Reclassification: None

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of multiple trenches in the burial ground, they were oriented east and west. Typically, trenches were 61 m (200 ft) long by 6.1 m (20 ft) wide at the bottom and 6.1 m (20 ft) deep. The spacing between trenches was not uniform. The subsite also includes the process (sorting) cells used to determine the presence of suspect spent nuclear fuel and the north anomaly storage area.

The burial ground was the primary disposal site for 105-DR Reactor operations waste, including irradiated dummies, splines, rods, thimbles, and gun barrels. The burial ground has the potential to contain spent nuclear fuel elements. The site also contained a burn pit used to dispose of low-level radioactive combustible materials. The eastern boundary was used for the disposal of 100-N solid wastes.

Location: The burial ground is located 106.7 m (350 ft) east of the 105-DR Building. The sorting cells are 137 meters (449 feet) south of the burial ground. The centroid of the two sorting cells is N 151139.7 m, E 573966.5 m and N151109.0 m, E 573967.1 m. The north anomaly storage area covers a portion of the burial ground along the north side. The centroid of the north anomaly storage area is N 151348.2 m, E 574047.3 m.

The SubSite is Part Of:

Code: 118-D-3
Names: 118-D-3; 100-D Burial Ground No. 3

Code: 118-D-3:2 **Classification:** Accepted

Names: 118-D-3:2; Fuel and Anomaly Characterization Areas **Reclassification:** None

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: The subsite includes two areas (fuel characterization and anomaly characterization). The fuel characterization area was used to investigate suspect spent nuclear fuel and confirm presence of spent nuclear fuel pieces. The anomaly characterization area was used to characterize anomalous materials found at 100-D.

Location: The site is located 321 meters (1053 feet) southeast of the 105-DR building.

The SubSite is Part Of:

Code: 118-D-3

Names: 118-D-3; 100-D Burial Ground No. 3

Code: 118-D-4 **Classification:** Accepted

Names: 118-D-4; 118-D-4F; Burial Ground 4F; Construction Burial Ground **Reclassification:** Interim Closed Out (10/14/2010)

Type: Burial Ground **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1967

Description: The site appears as a gravel and cobble field.

Location: The site is located 300 meters (1000 feet) southeast of 105-D Reactor Building and 30 meters (100 feet) south of the 100-D railroad tracks.

Process Description: This irregularly shaped burial ground received construction waste, primarily reactor components and hardware, associated with Project CG-558. Based on historical photograph 3738-Photo, this site (118-D-4F) likely began operations around 1956 instead of 1953. A geophysical survey detected three distinct trenches.

Waste Type: Equipment

Waste Description: This unit contains contaminated material generated during Project CG-558. The contaminated material consisted mainly of reactor components and hardware. Potential contaminants include: C-14, Co-60, Ni-63, H-3, Nb-94, Ni-59, Pd-102, Sm-151, Tc-99, Am-241, Ag-108m, Ba-133, Cs-137, Eu-152 and 154, Pu-238, 239 and 241, Ca-41, Cd-113m, Kr-85, Zr-93, cadmium, lead.

Closure Info: The Cleanup Verification Package (CVP-2009-00001) has documented that the 118-D-4 waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (Burial Grounds ROD) (EPA, 2000).

Remedial action began on October 10, 2007, with the removal of 5,500 bank cubic meters (BCM) (7,200 bank cubic yards [BCY]) of overburden material. The overburden was stockpiled southeast of the burial ground. Excavation continued through March 20, 2008, to a maximum depth of approximately 6.5 m (21 ft), resulting in approximately 7,067 BCM (9,243 BCY) of

waste material removed for disposal at ERDF. Although the excavation extended into the deep zone, the entire excavation area is treated as shallow zone for verification sampling.

Waste encountered consisted of primarily contaminated reactor components and hardware associated with Project CG-558. Field observations during excavation indicated the presence of piping, lead, concrete, steel, reactor hardware, valves, a metal solvent container, and leaded glass.

The contaminants of potential concern (COC/COPCs) were identified in the RDR/RAWP and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-2001-35) and included carbon-14, cobalt-60, nickel-63, cadmium, and lead. The 100 Area Burial Grounds SAP further identified cesium-137, strontium-90, europium-152, europium-154, uranium-238, plutonium-238, plutonium-239/240, chromium, and mercury as COPCs for construction burial grounds. Boron was identified as a COPC based on its usage in reactor operations.

Verification sampling was performed between December 9, and December 11, 2008, to collect data to determine if the RAGs had been met. RAGs are the specific numeric goals against which the verification data are evaluated to demonstrate attainment of the RAOs for the site.

The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix C of the CVP.

The 118-D-4 excavation area had a maximum depth of approximately 6.5 m (21 ft), which included both shallow zone and deep zone soils. However, the entire excavation area was considered one decision unit, and was closed out using the more restrictive shallow zone cleanup criteria; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone were required.

Code:	118-D-5	Classification:	Accepted
Names:	118-D-5; Ball 3X Burial Ground; Burial Ground 4G; Minor Construction Burial Ground Number 3; Minor Construction Burial Ground Number 5; 118-D-4G	Reclassification:	Interim Closed Out (2/1/2010)
Type:	Burial Ground	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1954
Description:	The unit consists of two burial trenches located parallel to each other. Each trench is 12.2 meters (40 feet) long by 6.1 meters (20 feet) wide, however, the exact location is unknown.		
Location:	The unit is located 30.5 meters (100 feet) south of the 105-DR Building, just outside the exclusion area fence. Hanford drawings H-1-4046 and H-1-19823 show a discrepancy in the site location.		
Process Description:	This burial ground received thimbles from the 105-DR Reactor during the Ball 3X Project in 1954.		
Waste Type:	Equipment		
Waste Description:	This site received thimbles removed from the 105-DR Reactor during the Ball 3X work in 1954. Potential contaminants include: Co-60, Ni-63, Ag-108, Ba-133, Cs-137, Eu-152 and 154, Pu-238, 239 and 241, Ca-41, Cd-113, Kr-85, Zr-93, cadmium, lead.		

Closure Info: 118-D-5 Burial Ground 4G meets the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2, Operable Units, Hanford Site (100 Area Burial Grounds).

Remedial action at the 118-D-5 Burial Ground began on June 2, 2008, and continued through August 12, 2008. Approximately 1,943 bank cubic meters (BCM) (2,541 bank cubic yards [BCY]) of overburden material was stockpiled for use as clean fill. Approximately 314 BCM (411 BCY) of soil and debris were removed for disposal to the Environmental Restoration Disposal Facility (ERDF).

The depth of the excavation ranged from 2 m (6.5 ft) in the easternmost portion of the excavation to 7 m (23 ft) in the westernmost portion of the excavation. Although defined trenches were not observed on the geophysical data, the debris removed indicates that the 118-D-5 Burial Ground was located and remediated. Concrete, piping, and split tubes (reactor process tubes that were split to allow removal from the reactor core) were among the type of debris removed from the burial ground excavation. No thimbles were identifiable in debris found during the remediation of the burial ground.

The COCs for the 118-D-5 Burial Ground, specified in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (Burial Grounds SAP) (DOE-RL 2001a), are identified as cobalt-60 and nickel-63. Europium-152, europium-154, boron, cadmium, lead, and mercury were added as COPCs based on the disposal of Ball 3X Project waste to the site. Although not considered COPCs, antimony, arsenic, barium, beryllium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, silver, selenium, vanadium, and zinc were evaluated by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals list. Due to a site-wide effort to identify the source of chromium contamination in the groundwater, hexavalent chromium was added as a COPC for closeout.

An in-process soil sample, consisting of scale from debris and co-mingled soil, was collected during remediation activities at a location where the post-excavation radiological survey showed elevated radiological activity. The sample detected carbon-14, cesium-137, strontium-90, and tritium; therefore, those radionuclides were added as COPCs to the focused sample location only. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and are presented as part of the 95% UCL calculation in Appendix D of the CVP.

The remaining soils at the 118-D-5 waste site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the site containing COCs/COPCs at concentrations exceeding RAGs have been excavated and disposed at ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site posed no threat to groundwater or the Columbia River.

The excavation area had a maximum depth of approximately 7 m (23 ft), which included a shallow zone and a deep zone. However, the entire excavation area was considered one decision unit, and was interim closed out using the more restrictive shallow zone cleanup criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The site was verified to be remediated in accordance with the Burial Grounds ROD. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the

Columbia River.

Code: 128-D-1 **Classification:** Accepted
Names: 128-D-1; 100 D/DR Burning Pit **Reclassification:** No Action (4/12/2004)
Type: Burn Pit **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1967

Description: Documentation in the Calculation Brief (0100D-CA-V0126) demonstrated that this site is a duplication (misidentified location) of 128-D-2 or 628-3.

Location: This site was located (in error) east of the intersection of the perimeter road and the railroad track that leads to the 184-D Powerhouse, just northeast of 100-D Area. The exact location of the site is unknown.

Process Description: The site was originally thought to have been used for the disposal of nonradioactive, combustible materials, such as paint waste, office waste, and chemical solvents.

Waste Type: Misc. Trash and Debris

Waste Description: The site was used for the disposal of nonradioactive, combustible materials, such as paint waste, office waste, and chemical solvents. The exact location of this waste site is unknown, although evidence of burning and waste materials were found at the site. On September 29, 1951, contaminated materials were found in the burning pit (Radiation incident: Class 1 #180). All contaminated materials were removed to the radioactive burial ground for proper disposal.

Code: 1607-D1 **Classification:** Accepted
Names: 1607-D1; 1607-D1 Sanitary Sewer System; 1607-D1 Septic Tank; 1607-D1 Septic Tank and Associated Drain Field; 124-D-1 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1965

Description: The site is a septic tank and associated drain field. The tank is 3.4 meters (11 feet) deep, constructed of reinforced concrete, and has a 125-person capacity (130 liters [35 gallons] per capita) with an average detention period of 24 hours. The walls and floor are 25 centimeters (10 inches) thick. The tile field is constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a minimum of 2.4 meters (8 feet) per capita. The laterals are open jointed and spaced 2.4 meters (8 feet) apart.

Related Sites/Structures: The septic system is associated with the 1701-D Badgehouse and the 1709-D Patrol Change Room and Offices.

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary waste from the 1701-D Badgehouse (security check point) and the 1709-D Patrol Change Room and Offices.

Code: 116-DR-3 **Classification:** Accepted
Names: 116-DR-3; 105-DR Storage Basin Trench **Reclassification:** None
Type: Trench **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1955

Description: The site appears as a vegetation-free, cobble and soil-covered field within a larger area bounded

by permanent concrete markers posted with Underground Radioactive Material warning signs. The trench is approximately 15 meters (50 feet) long.

Location: The trench is located directly south of the 105-DR Building, outside the exclusion fence. The site is 45.7 meters (150 feet) east of the 117-DR Reactor Exhaust Filter Building.

Process Description: Water and sludge were pumped through an overground line from the fuel storage basin to the trench. The trench was backfilled as soon as practical to avoid contamination spreads.

Waste Type: Sludge

Waste Description: The site received contaminated sludge and water removed from 105-DR Fuel Storage Basin.

Code: 116-DR-4

Classification: Accepted

Names: 116-DR-4; 105-DR Pluto Crib

Reclassification: Interim Closed Out (10/23/2000)

Type: Crib

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1956

Description: The crib has been remediated and closed out. It is no longer marked or posted.

Location: The crib was located approximately 61 meters (200 feet) southeast of the 105-DR Building and northeast of 116-DR-3.

Waste Type: Process Effluent

Waste Description: The site received liquid wastes from isolated tubes containing ruptured fuel elements in the 105-DR Fuel Storage Basin. The site may have also received excess "ink" (liquid boron solution) used in the 3X safety system.

Closure Info: The cleanup verification package (CVP-2000-00015) has documented that the 116-DR-4 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Amendment to the Interim Action Record of Decision (ROD) (EPA 1997). Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

Remedial action at the 116-DR-4 site began on November 5, 1999. On November 8, 1999, the excavation reached the design limit at El. 138.2 meters (453.3 feet). A plume of contamination was detected and excavated, resulting in an excavation 0.7 meters (2.3 feet) deeper than originally planned. The final excavation elevation was El. 137.5 meters (451 feet); the final excavation was completed on January 3, 2000.

The contaminants of concern for the site are cesium-137, cobalt-60, europium-152, strontium-90, and hexavalent chromium.

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 237.9 square meters (2,560 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 523 metric tons (575 tons) of contaminated material were disposed at ERDF. Cleanup verification sampling was conducted on January 17, 2000. The excavation will be backfilled in the near future (as of October 2000) with appropriate materials to the reference grade of 142 meters (466 feet).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that

IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	116-DR-6	Classification:	Accepted
Names:	116-DR-6; 1608-DR Liquid Disposal Trench; Wash Pad Liquid Waste Site 3C	Reclassification:	Interim Closed Out (10/23/2000)
Type:	Trench	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and was closed out on October 23, 2000. It is no longer marked or posted.		
Location:	The 116-DR-6 Liquid Disposal Trench was located approximately 37 meters (120 feet) east of 100-DR Reactor and approximately 1,120 meters (3,670 feet) from the Columbia River.		
Process Description:	The 116-DR-6 Trench received DR Reactor cooling water effluent during upgrade of the reactor emergency shutdown system (Ball 3X upgrade). During reactor shutdown, the trench also received water during maintenance of the cooling water effluent system. In addition, decontamination effluents from the DR fuel storage decontamination pad were routed into the trench. The trench received an estimated 7 million liters (26.5 million gallons) of liquid during its use between 1953 and 1965. The 116-DR-6 Trench has also been described as a crib (subsurface trench) that would sometimes receive effluent volumes great enough to cause seepage to the surface with drainage across the ground surface to the east. Aerial photographs from the period of trench operation (1953-1965) do not indicate the presence of an open trench in the 116 DR-6 site area. Upon closure in 1965, the area of the 116-DR-6 Trench was covered with about 1.8 meters (6 feet) of soil.		
Waste Type:	Process Effluent		
Waste Description:	The site received diverted coolant during the Ball 3X upgrade. It also received diverted water when maintenance was necessary on the effluent system during a reactor shutdown. It is reported that the volume of liquids disposed of at this unit would cause it to overflow, and a solvent odor was present at the site on very hot days.		
Closure Info:	The site remediation was performed in accordance with the Amendment to the Interim Action Record of Decision (ROD) (EPA 1997). The ROD provides the U.S. Department of Energy, Richland Operations Office (RL) the authority and guidelines to conduct this remedial action at the site. The preferred remedy specified in the ROD is excavation and disposal of contaminated materials at the Environmental Restoration Disposal Facility (ERDF). The Remedial Action Objectives (RAOs) were established in the Interim Action ROD (EPA 1995) and are summarized in the Cleanup Verification Package (CVP) along with the corresponding Remedial Action Goals (RAGs). Methods to attain the RAOs are presented in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17) and are discussed in further detail in the 100 Area Remedial Action Sampling and Analysis Plan (SAP). Waste site contaminants of concern (COCs) identified through process knowledge are listed in the SAP. The COCs for this site consist of the following: uranium-238, strontium-90, cesium-137, cobalt-60, europium-152, europium-154, and hexavalent chromium.		

Remedial action at the 116-DR-6 site began in November 2, 1999. Excavation of the site involved removing the overburden materials, the contaminated structure, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Materials that were found to be contaminated were disposed of at the ERDF. The excavation design floor elevation was 138.5

meters (454 feet), but because field screening at that depth indicated the presence of radionuclides above the RAGs, an additional meter of soil was removed from the bottom of excavation. The final floor elevation was 137.5 meters (451 feet).

At the completion of remedial action and removal of the engineered structure, the excavation was approximately 485 square meters (5,218 square feet) in area with a maximum depth of approximately 4.8 meters (16 feet). Approximately 2,140 metric tons (2,354 tons) of material from the site were disposed of at the ERDF. Cleanup verification sampling was conducted on February 1, 2000.

The CVP demonstrated that remedial action at the 116-DR-6 site has achieved the RAOs and corresponding RAGs established in the approved amendment to the interim action ROD and the RDR/RAWP. Materials from the 116-DR-6 site have been excavated and handled in accordance with the RDR/RAWP. The remaining soils have been sampled and analyzed to show that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-DR-6 site has been verified to be remediated in accordance with the ROD.

Code:	116-DR-7	Classification:	Accepted
Names:	116-DR-7; 105-DR Inkwell Crib	Reclassification:	Interim Closed Out (9/26/2000)
Type:	Crib	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	The site was remediated in December 1999 by removing the structure and associated contaminated soil. As of September 2000, the excavation was still open, but is to be backfilled in the near future to a reference grade of elevation 142.0 meters (466 feet).		
Location:	The site is located south of the 105-DR Building and is approximately 1,100 m (3,609 ft) from the Columbia River. The site was marked by a single concrete marker and was adjacent to a concrete pad that once supported a storage building.		
Process Description:	The crib was used to receive the liquid potassium borate solution (called "ink" because it resembles printers ink in color and viscosity) that was drained from the 3X system prior to the Ball 3X system upgrade.		
Waste Type:	Process Effluent		
Waste Description:	Liquid potassium borate solution was drained from the 3X System prior to the Ball 3X System upgrade.		
Closure Info:	The cleanup verification package (CVP-2000-00019) has documented that the 116-DR-7 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-1, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).		

The contaminants of concern (COCs) identified through process knowledge and listed in the

100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22) were: cobalt-60, cesium-137, europium-152, europium-154, strontium-90, uranium-233/234, and uranium-238. Potassium borate, which was disposed of at the 116-DR-7 site, was discounted as a COC since potassium borate is not carcinogenic, hazardous, nor toxic.

Remedial action of this site began on December 7, 1999, and ended on December 8, 1999. Approximately 59 metric tons (65 tons) of material were disposed at the Environmental Restoration Disposal Facility (ERDF). The excavation reached a final depth of 4.6 meters (15 feet) [at an elevation of 137.2 meters (450 feet)], and had an area of approximately 250.6 square meters (2,697 square feet).

Cleanup verification sampling began and finished on January 21, 2000. Twenty-four variance samples were taken; plus four final verification samples (and an additional three QA/QC samples) were taken and analyzed. All variance data indicated that contaminant levels were below the direct exposure RAGs.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	116-DR-8	Classification:	Accepted
Names:	116-DR-8; 117-DR Crib; 117-DR Seal Pit Crib (CERCLA)	Reclassification:	Interim Closed Out (9/20/2010)
Type:	Crib	Start Date:	1/1/1960
Status:	Inactive	End Date:	1/1/1964
Description:	The 117-DR Seal Pit Crib is documented in WIDS as two separate sites. The first site, 122-DR-1:6, which is part of the Large Sodium Fire Facility, a RCRA TSD, and has been closed for hazardous/dangerous constituents. The second site, 116-DR-8, which represents the radioactive constituents remaining at the site will be addressed under CERCLA. Note: this information on the pipeline in the Current Site Description was entered on March 14, 2001. If the remedial design has already been completed for this site and it does not include the feed pipeline, the pipeline will be added to another pipeline site for remediation.		
Location:	The unit is located south of the exclusion area fence and directly east of the 118-DR-1 Burial Ground.		
Related Sites/Structures:	The site received effluent from the 117-DR HEPA Filter Building seal pits and wash water from the 105-DR Large Sodium Fire Facility.		
Waste Type:	Process Effluent		
Waste Description:	The site received drainage from the 117-DR Building seal pits.		
Closure Info:	The Remaining Sites Verification Package (RSVP-2009-037) for 116-DR-8 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).		

The contaminants of potential concern (COPCs) for confirmatory sampling of the 116-DR-8 waste site were identified based on existing historical information, process knowledge of the 105-DR Reactor, and the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL-96-22, Rev. 4). These COPCs included carbon-14, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, uranium-234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, lithium, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs).

Remedial action at the 116-DR-8 waste site was performed from June 18 through July 24, 2008. Approximately 3,056 bank cubic meters (BCM) (3,997 bank cubic yards [BCY]) of soil overlying the crib was removed and stockpiled as overburden for potential use as clean backfill. The depth of overburden was determined using confirmatory sampling information and construction history for the crib. The site was then further excavated to a depth of approximately 6.8 m (22 ft) below grade resulting in approximately 1,991 BCM (2,604 BCY) of material that was directly loaded out and disposed at the Environmental Restoration Disposal Facility (ERDF). Portions of the 100-D-50:8 and 100-D-50:10 pipelines among others were encountered during remediation.

Verification sampling was conducted May 19 through 26, 2009 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the 100 Area RDR/RAWP and the Remaining Sites ROD. The verification sample results were provided in Appendix D of the RSVP. The laboratory-reported verification data results for all constituents are stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as Attachment 1 of the 95% UCL calculation in Appendix D of the RSVP.

Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	116-DR-10	Classification:	Accepted
Names:	116-DR-10; 105-DR Fuel Storage Basin Cleanout Percolation; 105-DR Fuel Storage Discharge Pond; 105-DR Pond	Reclassification:	Interim Closed Out (12/28/2010)
Type:	Pond	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1984
Description:	Prior to remediation the unit was an open excavated pit located in a natural depression. The excavation has been backfilled and graded to match the natural terrain. The original natural depression remains.		
Location:	The site is located east and slightly south of the 105-DR Reactor Building, just outside the HPS AC-5-40 permanent markers.		
Process Description:	It consisted of an open pit that was excavated in a natural depression and used for disposal of processed water from the 105-DR Fuel Storage Basin cleanout during October and November 1984. The water had been used in the bottom of the fuel storage basin for the process of storing irradiated reactor fuel elements. The processed water was filtered to remove particulate, run through ion-exchange columns to remove colloidal material, and then held in 76,000-L (20,000-gal) batch tanks until sampling verified that radiological release criteria had been met. However, minute quantities of radionuclides remained in the processed water and presented the potential for accumulation of radionuclides at the bottom of the pond. The pit was 24.4 m (80 ft) long and 15.2 m (50 ft) wide with an area of 371.6 m ² (4,000 ft ²). The bottom of the pit was irregular with an average depth of 1.8 to 2.4 m (6 to 8 ft) (Beckstrom 1987).		

Related Sites/ Structures: The site is associated with the 105-DR Fuel Storage Basin.

Waste Type: Water

Waste Description: The unit received processed water from the 105-DR Fuel Storage Basin. During the cleanout of this basin, the radiologically contaminated shielding water was processed through a system using ion exchange columns. Before discharging the water to the unit, composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. Although the water was cleaned to applicable release limits, minute quantities (below release limits) of radionuclides remaining in the water accumulated in the soil at some low points in the floor. No known hazardous substances were present in the water; however, chemical analysis was not a standard practice during that period, and there is no evidence that one was performed. It should be noted that water removed from the 1608-DR is believed to be comparable to the storage basin water, and EP-TOX testing results for the 1608-DR water were negative.

Closure Info: The Remaining Sites Verification Package for the 116-DR-10 (Attachment to Waste Site Reclassification Form 2010-015), has documented that the waste site verification sampling results support reclassification of the site to Interim Closed Out. The current site condition has met the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA, 1999.)

Remedial activities at the 116-DR-10 waste site began on November 11, 2008, and concluded on January 7, 2009. The depth ranged from 2.7 m (9 ft) to 4 m (13 ft), resulting in approximately 6,000 bank cubic meters (BCM) (7,847 bank cubic yards [BCY]) of soil being removed to the Environmental Restoration Disposal Facility. Approximately 2,462 BCM (3,220 BCY) of overburden material was stockpiled adjacent to the site.

The historical information provided in Beckstrom (1987) was used to develop a remediation strategy for the percolation pond. Since the bottom of the pond ranged from 1.8 to 2.4 m (6 to 8 ft) below surface grade and was then later backfilled to the local terrain, the remediation strategy consisted of removing the surface soil at the site to a depth of approximately 1.2 m (4 ft) and stockpiling it at the site as overburden soil. The soil from 1.2 m (4 ft) to a depth of approximately 2.7 m (9 ft) was to be excavated and direct loaded for disposal to the Environmental Restoration Disposal Facility (ERDF) since it delimited the original bottom of the pond that was reported as having residual radiological contamination.

The contaminants of potential concern (COPCs) for verification sampling of the 116-DR-10 waste site were identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL96-22, Rev. 5). These COPCs included americium-241, carbon-14, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, nickel-63, plutonium-238, plutonium-239/240, strontium-90, uranium-234, uranium-235, uranium-238, lead, mercury, and polychlorinated biphenyls (PCBs). Although not considered COPCs, antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were evaluated by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals list. In addition, hexavalent chromium was included as a COPC.

Verification sampling was conducted on January 25 and February 3, 2010, to support a determination that residual contaminant concentrations in the soil met cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. A statistical sampling design was used to collect verification soil samples from the excavation and the overburden soil stockpile to

support closeout of the waste site. The complete laboratory results were stored in the ENvironmental REstoration (ENRE) project-specific database prior to submitting to the Hanford Environmental Information System (HEIS) for archiving and were provided in Appendix B of the RSVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site did not extend into the deep zone; therefore, no deep zone institutional controls are required.

Code:	118-DR-1	Classification:	Accepted
Names:	118-DR-1; 105-DR Gas Loop Burial Ground	Reclassification:	Interim Closed Out (6/10/2010)
Type:	Burial Ground	Start Date:	1/1/1963
Status:	Inactive	End Date:	1/1/1964

Description: The site contains a gunite-lined trench running north and south that was water-filled and used for the sectioning and examinations performed on test assemblies removed from the 105-DR Reactor.

Location: The unit was located 183 m (600 ft) south of the 105-DR Building.

Process Description: This site was a test loop burial ground and received about 20 cubic meters (26 cubic yards) of irradiated stainless steel assemblies. It was originally a gunite-lined trench used to perform examination and sectioning of test assemblies, and later received irradiated metal assemblies from the 105-DR gas loop.

Waste Type: Equipment

Waste Description: This unit contains irradiated metal assemblies from the 105-DR Gas Loop.

Closure Info: The Cleanup Verification Package, CVP-2009-00010, has documented that remedial action at the 118-DR-1, 105-DR Gas Loop Burial Ground site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (Burial Grounds ROD).

Remedial action at the 118-DR-1 Burial Ground began on June 3, 2008, and continued through July 23, 2008. Approximately 1,673 bank cubic meters (BCM) (2,188 bank cubic yards [BCY]) of soil and debris was removed for disposal at ERDF. Approximately 221 BCM (290 BCY) of clean soil was removed from outside of the burial ground excavation footprint and stockpiled west of the burial ground excavation. The soil was removed during construction of a ramp into the excavation, allowing the excavator equipment access to continue to remove soil and debris at a greater depth. The ramp soil stockpile is not considered overburden; therefore, it was not included in the closeout sample design. This material will be used as backfill material during general backfill of the site.

One anomalous waste item was encountered in the 118-DR-1 Burial Ground. A breached 208-L (55-gal) drum suspected of containing an undetermined amount of liquid was removed from the sidewall of the excavation. The drum, along with the soil directly below the drum, was placed on a plastic sheet within the burial ground footprint for waste characterization sampling. However, the drum was found to be empty so the soil that was removed with the drum was

sampled for waste characterization.

No spent nuclear fuel was discovered at the 118-DR-1 Burial Ground.

The 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (Burial Grounds SAP identified contaminants of concern (COCs) for the 118-DR-1 Burial Ground as cobalt-60 and nickel-63. Cesium-137, lead, and mercury were detected in the waste characterization soil sample and therefore were included as contaminants of potential concern (COPCs). Due to a site-wide effort to identify the source of chromium contamination in the groundwater, hexavalent chromium was added as a COPC.

In addition to the COCs/COPCs listed above, polychlorinated biphenyls, pesticides, and polyaromatic hydrocarbons were included as COPCs for the focused sample location where the breached drum was found within the excavation.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix B of the CVP. The remaining soils have been sampled, analyzed, and modeled. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at ERDF.

These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The excavation area had a maximum depth of approximately 6 m (20 ft), which included both shallow zone and deep zone soils. However, the entire excavation area was considered one decision unit and will be closed out using the more restrictive shallow zone cleanup criteria; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required. The site is verified to be remediated in accordance with the Burial Grounds ROD.

Code: 126-DR-1	Classification: Accepted
Names: 126-DR-1; 190-DR Clearwell Tank Pit; 100-DR Clearwells	Reclassification: Interim Closed Out (4/23/2009)
Type: Dumping Area	Start Date: 1/1/1975
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The unit is an excavated area between the 183-DR and 190-DR that contained four 1.42E+07 liter (3.75E+06-gallon) steel water storage tanks. The four tanks were removed, but the concrete slab foundations remained. In the northwest section of the pit, approximately 25% of the concrete slab area contained a layer of waste 1.5 to 3 meter (5 to 10 feet) deep that is covered with pit run backfill. The southern section was posted as an asbestos area.
Location:	The unit is located directly east of the site of the demolished 183-DR Water Treatment Facility and west of the demolished 190-DR building. It is west-southwest of the 105-DR Reactor Building.
Process Description:	The tanks were constructed in 1950 and operated until 1964 when the 105-DR Reactor was deactivated. The tanks were most likely dismantled by a salvage operator between 1978 and 1979 when all salvageable material was removed from the 190-D Main Pump Room. After the tanks were removed, the area was used as a dump site for D&D rubble. This site was also suspected of containing hazardous materials, including low-level radioactive waste because of uncontrolled dumping. Other waste that has been observed include paint and solvent cans, oil

drums, sodium dichromate crystals, alum, creosote drums, herbicide cans, carbon tetrachloride containers, methanol containers, acetone containers, welding materials, laboratory glassware, furniture, and other solid wastes. The site may contain chromates in both the soil and underground piping because of the use of chromates in water treatment.

**Related Sites/
Structures:** The unit is associated with the 183-DR Water Treatment Facility and the 190-DR Main Pump House. Both of these facilities were involved in providing primary coolant water for the 105-DR Reactor.

Waste Type: Misc. Trash and Debris

**Waste
Description:** The unit contains demolition and inert waste from demolished facilities, including rubble from released portions of the 115-D/DR, and some rubble from 183-DR. In 1989, small amounts of friable asbestos were found scattered throughout the southern sector. The asbestos is believed to be the result of salvage operations during the 1970's. This site may contain chromates in both the soil and underground piping as a result of its association with water treatment. Because of this potential, it is closed to waste disposal. There is potential for chemical and radioactive contamination similar to that found in the 126-D-2 Burial Ground as uncontrolled dumping reportedly occurred at the site, but it is thought to be in much smaller volumes. Potential contaminants include: Chromate, lead, undetermined organic and inorganic chemicals

Closure Info: The Remaining Sites Verification Package for the 126-DR-1 (RSVP-2008-046) waste site evaluation and supporting documentation has demonstrated that the site meets the remedial action objectives (RAOs) specified in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, 100-KR-2, Operable Units,(100 Area Burial Grounds ROD). The site consisted of debris disposed in the 190-DR clearwell pit. All waste has been removed to the lower boundary of the waste site; and underlying concrete and soil will be removed as part of future remediation of the 100-D-50:6 waste site. The sidewalls of the waste site will be sampled, based on the sample results the soil will be remediated as necessary,

Field work to remediate the site commenced on April 5, 2007, by demarking the excavation boundary. The site was prepared by leveling the surface and constructing a soil berm around the open face of the waste pile. The soil berm was built to prevent the spread of contamination by rainwater and/or dust suppression water during excavation of the waste.

An excavator was the primary piece of equipment used for excavation, sorting, segregation, and load out of waste material. The excavated material was directly loaded into roll-off boxes. Remediation of the waste site concluded on July 24, 2008, after 23,790 metric tons (26,230 U.S. tons) were removed, transported, and disposed at Environmental Restoration Disposal Facility (ERDF). A radiation detector, on the arm of the backhoe, was used during excavation of this waste site and there was no evidence of radiation during the excavation.

The majority of waste was described as construction and demolition debris including concrete rubble, rebar, soil, and rocks. The debris also contained pipe insulation, suspected to contain asbestos; cans of dry paint; empty drums; welding material; laboratory glassware; steel beams; empty process tanks; electrical panels and fuses; actuators; empty cylinders; and structural steel, piping, valves, and duct work. There was no low-level radioactive waste; sodium dichromate crystals; alum; or containers of creosote, herbicide, carbon tetrachloride, or methanol discovered, as stated in the 100 Area Burial Ground ROD. A number of anomalous waste items were identified, characterized, and disposed during the project. The analytical data associated with these items are included in Appendix A of the RSVP. All but one of these items was determined to be inert debris and required no additional treatment prior to disposal at ERDF. The single exception was the discovery of three drums filled with white granular material on June 21, 2007. After treating, the material was spread out in small batches, neutralized with water, then mixed with soil and loaded into a roll-off box. The treated material was sampled

(J16VK2) and analyzed prior to disposal at ERDF.

No institutional controls are required for the 126-DR-1 waste site; potential institutional controls for underlying waste sites will be evaluated as part of reclassification of those sites.

Code:	132-DR-1	Classification:	Accepted
Names:	132-DR-1; 1608-DR Effluent Pumping Station; 1608-DR Waste Water Pumping Station	Reclassification:	Interim Closed Out (9/22/2005)
Type:	Pump Station	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1964

Description: The site has been remediated and interim closed out. The unit consisted of: 1) an above ground section constructed of concrete block walls, a reinforced concrete floor, and a reinforced concrete roof with a composition surface; 2) a below-grade section constructed of reinforced concrete. The facility contained an operating level, which consisted of pumping equipment, and an accumulation inlet chamber, in the northern section, which fed three discharge sump chambers.

Location: The unit was located adjacent to the northeast corner of the 105-DR Reactor Building within the 105-D/DR Exclusion Area Fence.

Process Description: The facility contained three sumps to collect radioactively contaminated liquid wastes from the 105-DR Reactor Building. The liquid wastes were collected in the sumps for final disposal by pumping to the 107-D/DR Retention Basin via a 41 centimeters (16 inches) diameter pipe. The facility extended 3.7 meters (12 feet) above grade and 9.8 meters (32 feet) below grade and was 11 meters (36 feet) in length and 10.4 meters (34 feet) in width.

Related Sites/ Structures: The site received effluent from the 105-DR Reactor Building (118-DR-2).

Waste Type: Water

Waste Description: This site received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals. Radionuclides were primarily miscellaneous fission and activation products. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid. Water was pumped from the reactor collection pits into the reactor effluent lines near the reactor building and became part of the 107-DR effluent that was discharged to the Columbia River.

Closure Info: The closure report "Remaining Sites Verification Package, (RSVP 2005-035), demonstrated that the 132-DR-1 site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington.

Prior to demolition in 1987 samples of sludge from the sumps were taken and sent to the Pacific Northwest National Laboratory for analysis. The sludge was designated based on the equivalent concentration of various possible toxic compounds in the sludge. Equivalent concentrations were derived by making "worst-case" assumptions about the form of the various cations in the waste. The sludge did not designate as a hazardous waste. However, the concentrations of lead and phosphate were used to calculate a concentration of lead phosphate (7,300 ppm) that resulted in designating the sludge as a state-only toxic dangerous waste (i.e., extremely hazardous waste) according to Washington State regulations (WAC 173-303). The sludge was also radioactive, giving it the classification of radioactive mixed waste.

The concrete and rust/scale samples were analyzed at the Decommissioning Health Physics Laboratory in the 183-KE Building and by the Pacific Northwest National Laboratory in the Hanford 300 Area. Samples were analyzed for carbon 14, cesium-137, cobalt-60, europium-152, europium-154, tritium, strontium-90, and gross alpha activity. The gross alpha results were assumed to represent plutonium-239.

The sample results were used to support calculation of the residual dose contribution for the demolished 1608-DR Effluent Pumping Station in accordance with U.S. Department of Energy guidelines and Allowable Residual Contamination Levels for Decommissioning Facilities on the Hanford Site. The allowable residual contamination level (ARCL) calculation indicated that the demolished facility would contribute less than 1 millirem/year dose to a hypothetical, maximally exposed site resident if the site was released for unrestricted use after the demolition and burial in situ of the facility.

At the time of decommissioning of the 1608-DR facility, the ARCL calculation determined that the site would contribute less than 1 millirem/year to an overall hectare dose rate and, therefore, no further decontamination to reduce the source term was necessary and the facility could be buried in-situ.

The RSVP documentation results show that the site and contaminant levels remaining after the 1987 decommissioning will be protective of direct exposure, groundwater, and the Columbia River. However, the acceptability of unrestricted direct exposure to below-grade structure surfaces in the deep zone has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 600-30	Classification: Accepted
Names: 600-30; 100-DR Construction Lay-down Area	Reclassification: Interim Closed Out (8/10/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The unit is a 4 hectare (10 acre) site covered with scattered construction related debris. Vegetation at the site includes grasses and rabbit brush. There are numerous areas that show signs of plant stress ranging from reduced to no vegetation. There is also evidence of burning throughout the unit.
Location:	The west edge of the site is located approximately 420 meters (1378 feet) east of the junction of Route 2 North and Route 4 North. The northern edge of the site is approximately 12 meters (39 feet) south of Route 2 North. The western edge of the site lies east of a north-south line with the cross country transmission line leading from the 151-D Substation.
Process Description:	Based on physical and photograph evidence, it appears to have been a lay-down yard during construction of 105-DR.
Waste Type:	Construction Debris
Waste Description:	Waste consists of broken sheet asbestos, buckets of tar, steel, galvanized pipe, rebar, angle iron, deteriorated keg of nails, burned and crushed drums, steel plate, chain, wire rope, bolts, metal hinges, shovels, gas and oil cans, welding rod cans, evidence of concrete blocks, metal tubing, and broken shipping boxes.
Closure Info:	Initial remediation was performed in October and November 2008 (WCH 2009a). Remediation consisted of scraping 0.5 to 1 m (1.6 to 3.3 ft) of soil and debris into piles that were then loaded into Environmental Restoration Disposal Facility (ERDF) containers. Scraping removed the surface debris at the site. At two locations the excavation extended to 1.5 m (4.9 ft) deep to

remove additional sub-surface material.

Additional materials discovered during remediation included lead acid batteries and a suspected fire extinguisher (WCH 2009a). The batteries stacked in two shallow pits were hand removed from the ground, drummed and then disposed at ERDF. There was no indication that the fire extinguisher had leaked hazardous material to the ground, therefore, it was disposed using anomalous media procedures. No other items were discovered during remediation that were considered anomalous. Approximately 7,400 bank cubic meters (BCM) (9,679 bank cubic yards [BCY]) of material were removed and disposed at ERDF.

Following initial remediation, verification sampling performed in August 2009 found a sample result that exceeded the direct exposure RAG for lead at 2,770 mg/kg. A walkdown of the area determined that lead acid debris was widespread. The recommended path forward was to remediate a 45.7- by 6.1- by 0.6-m (150- by 20- by 2-ft) area, combining the rectangular area and a circular area.

Additional remediation was performed in February and March 2011, which involved scraping 0.5 to 1 m (1.6 to 3.3 ft) of soil and debris across the northern boundary of the waste site (area 1) and the lead-contaminated area associated with sample locations F-5 and F-6 (area 2). Approximately 3,500 additional BCM (4,578 BCY) of soil was removed for disposal at ERDF.

100-FR-1

Code: 141-C **Classification:** Accepted
Names: 141-C; 141-C Animal Barn; Hog Barn; 100-F **Reclassification:** Interim Closed Out (5/24/2006)
Experimental Animal Farm Large Animal Barn &
Biology Laboratory
Type: Laboratory **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1976

Description: After the site was remediated, the verification sampling results supported a reclassification to interim closed out.

The 141-C Building provided facilities for the long-term housing and care of research animals associated with the Experimental Animal Farm.

Location: The site was located in the 100-F Experimental Animal Farm area, west of 132-F-2 (144-F Inhalation Laboratory), west of the north end of 107-F Retention Basin, and approximately 500 meters (1640 feet) northeast of the 105-F Reactor Building.

Process Description: A portion of the radiobiological experiments carried out at 100-F Experimental Animal Farm Area involved the use of large animals. The 141-C Building provided facilities for the long-term housing and care of these research animals. The building was a single L-shaped structure with each wing measuring 35.4 meters (116 feet) by 6.1 meters (20 feet) wide by 2.4 meters (8 feet) high. It was a Butler-type building of all-steel construction and was set on a concrete pad. The animal stalls were of steel construction and each was equipped with feeding and watering facilities. A common drainage trench served all of the stalls. The 141-C Building included a dry well at its southwest corner that drained a loading dock at the facility's southwest end. It was likely that this dry well received only storm water runoff, but it may have been contaminated by wash water containing radioactive animal waste.

Waste Type: Water

Waste Description: Wash down water may have included the radionuclides used in the animal studies (iodine-131, strontium-90, cesium-137, and plutonium-239).

Closure Info: The Remaining Sites Verification Package 2006-017 has documented that the current site condition has achieved the remedial action objectives and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

Prior to remediation it was determined that the primary isotopes used during experimentation were iodine-131, strontium-90, cesium-137, ruthenium-106, and plutonium-239. Strontium-90 was detected above the direct exposure dose-equivalence lookup value in the confirmatory samples. Arsenic and multiple polycyclic aromatic hydrocarbons (PAHs) were detected above direct exposure remedial action goals (RAGs) and soil RAGs for groundwater and/or river protection. Additional metals and PAHs were also detected above soil RAGs for groundwater and/or river protection.

Based on the confirmatory sample results, remediation of the waste site consisted of the removal of soil and debris within the building footprint to a depth of approximately 1 meter (3 feet). Because arsenic, strontium-90, and multiple PAHs were detected above direct exposure RAGs in confirmatory sampling results, approximately 900 bank cubic meters (1,200 bank cubic yards) of soil and debris was excavated and staged onsite before disposal at the

Environmental Restoration Disposal Facility (ERDF).

Exploratory trenches were excavated during remedial action efforts to confirm that the sewer lines formerly servicing the Building were removed during previous decommissioning and demolition activities. No sewer lines were located by these excavations, and field instrumentation did not detect any beta-gamma or alpha activity above background levels.

Following site remediation, verification soil sampling within the remediation footprint and remediation waste staging pile footprint was conducted on January 30, 2006. Verification samples (J112WO through J112W9 and J112X0 through J112X2X) were analyzed using analytical methods approved by the U.S. Environmental Protection Agency, and the results were compared against the cleanup criteria specified in the RDR/RAWP. The sample results were stored in the Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS) and are provided in Appendix A of RSVP-2006-027.

The results indicated that the waste removal action achieved compliance with the remedial action objectives for the waste site. Residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). A summary of the cleanup evaluation for the soil results against the applicable criteria was presented in Table ES-1 of the RSVP-2006-027. Based on statistical evaluation of the resulting data, the residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD (EPA 1999). This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-F-4	Classification:	Accepted
Names:	100-F-4; 108-F Building 12-Inch French Drain	Reclassification:	Interim Closed Out (7/25/2002)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and closed out. The french drain was constructed of 30-centimeter (12-inch) vitrified clay pipe, or similar material and was filled with gravel. A 1.3-centimeter (0.5-inch) steel pipe entered the drain from the 108-F Building. The drain was visible on Hanford photograph 106669-90-CN. Documentation suggests that the drain was likely removed as part of the layback zone of the 108-F Building excavation.		
Location:	The site was located adjacent to the southwest wall of the 108-F Building, just west of the building's southwest corner.		
Related Sites/ Structures:	The site served as a french drain for the 108-F building (site 100-F-36).		
Waste Type:	Water		
Waste Description:	The types and quantities of waste the unit received are unknown.		
Closure Info:	100-F-4, 100-F-11, 100-F-15 and 100-F-16 were addressed as a group. The information below documents information for the group of sites.		
	The cleanup verification package (CVP-2002-00001) has documented that the site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).		

The COCs for this site consisted of the following: total chromium, hexavalent chromium, plutonium-238 and plutonium-239/240 as listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

A cleanup verification sampling strategy was developed for the site based on the SAP and was approved in a status meeting by the U.S. Environmental Protection Agency. Because the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains were removed during decommissioning and demolition activities and backfilled with clean material, variance sampling was eliminated and cleanup verification samples were collected. The 100-F-15 french drain was sampled as per the SAP. The 100-F-4, 100-F-11, and 100-F-16 french drains were considered analogous to the 100-F-15 french drain and were verified as clean by excavating and sampling a test pit at each location.

Site excavation was completed as reported in the 108-F Biological Laboratory D&D Project Closeout Report. The CVP report documents that the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 362.2 meters squared (3898.7 square feet) in area with a depth of 4.6 meters (15.0 feet). No material from the sites was disposed of at the Environmental Restoration Disposal Facility as a result of the Remedial Action Project activities described here. Verified clean materials were used as backfill at the completion of the remedial action.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-F-7	Classification:	Accepted
Names:	100-F-7; Underground Fuel Tank - 1705-F Building	Reclassification:	No Action (2/15/2005)
Type:	Storage Tank	Start Date:	1/1/1948
Status:	Inactive	End Date:	
Description:	The site is not distinguishable from the surrounding terrain of vegetation and scattered rocks and has been reclassified to No Action.		
Location:	The site was located north-northwest of the northwest corner of the 107-F Retention Basin fence and north-northeast of the northeast corner of 108-F Building.		
Process Description:	The site was an underground fuel tank that supplied the oil furnace in the 1705-F Building Heater Room. The building has been decommissioned and demolished. Debris and asphalt are strewn about the area. The tank's presence could not be confirmed with a metal detector due to multiple underground magnetic anomalies in the area. During an April 1999 visit, a survey grade GPS was used to locate the site based on its mapped coordinates. No evidence of the site could be found at this point.		
Related Sites/ Structures:	The tank supplied the oil furnace in the 1705-F Building heater room.		
Closure Info:	The site consisted of an underground fuel tank that supplied the oil furnace in the 1705-F		

Building heater room. The tank was installed in 1948 and had a capacity of 3,800 Liters (1,000 gallons). When the 1705-F Building and surrounding facilities were demolished in 1975, no mention was made to indicate the tank was also removed. The presence of the tank could not be confirmed during various site walkdowns or Geophysical surveys.

A site evaluation conducted as part of the Remaining Sites Verification Package attached to the Reclassification Form 2004-124 through field observations and focused sampling and analysis to assess the presence of contaminated media and to determine if the underground fuel tank was still present. One test pit was excavated at the center of the suspected underground fuel tank location, to a depth of 2.4 meters (8 feet), where native soil was encountered. The tank was not present. A soil sample was collected from the bottom of the test pit and submitted for laboratory analysis.

Contaminants of potential concern (COPCs) for the site, as identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL96-22, Rev. 4), include semivolatile organic constituents (SVOCs), total petroleum hydrocarbons, volatile organic constituents (VOCs), arsenic, barium, cadmium, total chromium, lead, selenium, silver, and polychlorinated biphenyls (PCBs). Based on experience with similar sites, mercury was included as a COPC. Detected values of all contaminants of potential concern were below the remedial action goals for direct exposure, groundwater, and river protection. Therefore, no remedial action was required, and the site was reclassified to no action. Confirmatory sample numbers were reported as J01XV3, J01XV4 and J01XV5. The results of the confirmation samples were used to make reclassification decisions for the site in accordance with the TPA-MP-14 (DOE-RL 1998) process.

The RSVP demonstrates that the site meets the objectives for no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-F-9	Classification:	Accepted
Names:	100-F-9; French Drain at East End of 105-F Storage Room (Northeast Corner)	Reclassification:	No Action (2/15/2005)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	No remnants of this french drain have been identified, indicating that it was likely removed during the 105-F Reactor decommissioning project. The site has been reclassified to No Action.		
Location:	The french drain was located adjacent to the northeast corner of the Miscellaneous Storage Room of the 105-F Reactor Building. The Storage Room was the eastern-most portion of the 105-F Reactor Building.		
Related Sites/ Structures:	105-F miscellaneous storage room and the 105-F Reactor.		
Waste Type:	Water		
Waste:			

Description:

Closure Info: Field observations and confirmatory sampling were used to evaluate the site for reclassification. It was believed that the 100-F-9 French Drain received steam condensation via lines from the 105-F miscellaneous storage room building's steam heaters. The storage room facilitated the lunchroom, shower, and locker room and was demolished in 1999 during the 105-F Reactor decommissioning project. Apparently the french drain was removed during that operation.

Focused sampling and analysis were used to determine if the french drain had been removed and if hazardous or radiological contaminants were still present. One test pit was excavated to native soil at the WIDS coordinates for the site. No remnants of the french drain were found, indicating that it was likely removed during the 105-F Reactor decommissioning project.

On September 21, 2004 a soil sample was collected from the bottom of the excavation at the native soil interface. Detected values of all contaminants of potential concern were below remedial action goals, with the exception of mercury. The maximum detected result for mercury of 0.41 milligrams/kilograms was above the groundwater and river protection remedial action goals of 0.33 milligrams/kilograms. However, RESidual RADioactivity model results for analogous sites indicated that mercury will not reach groundwater (and, therefore, the Columbia River) within 1,000 years. Therefore, residual contaminant concentrations achieve the remedial action objectives for groundwater and river protection.

No notable anomalies were detected that would suggest the presence of a french drain. However, french drains usually have a very subtle geophysical signature, and the abundance of disturbed soil and buried debris from the 105-F Reactor D&D activities could hide an intact drain.

The RSVP-2004-125 report demonstrated that the site has met the objectives for reclassification to no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD). These results have documented that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 100-F-10	Classification: Accepted
Names: 100-F-10; French Drain at East End of 105-F Storage Room (Southeast Corner)	Reclassification: Interim Closed Out (5/6/2004)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The site consisted of a 91-centimeter (36-inch) concrete pipe buried to an unknown depth. The upper surface was a few inches above grade and was cobble-filled. The unit was fed by one or more 2.5-centimeter (1-inch) steel pipes coming from the 105-F Building. Only one pipe was visible. A 1.9-centimeter (0.75-inch) pipe also entered the top of the drain.	
Location: The french drain was outside and adjacent to the southeast corner of the Miscellaneous Storage Room of the 105-F Reactor Building. The Storage Room was the eastern-most portion of the 105-F Reactor Building.	

Waste Type: Water

Waste

Description:

Closure Info: 118-F-8:1, 118-F-8:3 and 100-F-10 were addressed as a group. The information below documents information for the group of sites.

Demolition of the facilities in subsites 1 and 3 began in fiscal year 1998. In 2004 the Cleanup Verification Package (CVP) 2003-00017 documented completion of the removal action and verified the protectiveness of subsites 118-F-8:1 (105-F Reactor Ancillary Support Areas, Below-Grade Structures and Underlying Soils) and 118-F-8:3 (105-F Fuel Storage Basin (FSB) and underlying soils).

Removal action "applicable or relevant and appropriate requirements" (ARARs) and cleanup standards for the 105-F site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These ARARs and cleanup standards for the subsites were documented in the Action Memorandum.

Removal of below grade structures to a minimum of 0.9 meters (3 feet) below surrounding grade outside of the 105 F Reactor core shield walls, verification that structures and soil left in place achieved specified cleanup standards, and disposal of contaminated excavation materials at the Environmental Restoration Disposal Facility in the 200 Area of the Hanford Site. In some cases, the floors of the below-grade structure (i.e., the valve pit and the solids feed area) or the entire structure (i.e., the FSB) were removed.

The subsite was divided into areas or zones as specified in the 105-F SAP and the FSB SAP according to process history and structure depth. These zones were treated as separate units such that cleanup evaluations were conducted on each individual area or zone. The 118-F-8:3, the underlying soils of the former FSB, was zone 1. The 118-F-8:1 subsite was divided into three zones (zones 2, 3, and 4), and also included the equipment decontamination areas, which were used during 105-F D and ISS activities.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern (COC) from 1999 to December 2003. Components of each zone were summarized, including structure floor depths and contaminants of concern (COCs). Floor depths were below ground surface. COCs were identified through process knowledge and were listed in the 105-F SAP and the FSB SAP. For the following zones 118-F-8:3; Zone 1 - FSB and underlying soils, 118-F-8:1; Zone 2 - Valve pit, and the 118-F-8:1; Equipment Decontamination Areas the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, technetium-99, uranium-234, uranium-235, uranium 238, hexavalent chromium, barium lead, mercury and PCBs.

For subsites 118-F-8:1; Zone 3 (Gas recirculation tunnel, solids feed area, flow laboratory basement, East water tunnel, trench under accumulator room) and 118-F-8:1; Zone 4, (West inlet water tunnel, east inlet water tunnel, 315 exhaust plenum, 316 exhaust plenum, pipe tunnel, southeast tunnel) the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium and lead.

The CVP-2003-00017 demonstrated that the removal action at the 105-F Reactor subsites 1 and 3 have achieved the objectives established in the Action Memorandum and have achieved the corresponding cleanup standards established in the 105-F SAP, the FSB SAP, and the 100 Area RDR/RAWP.

The remaining soils and concrete at the 105 F Reactor site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 105 F Reactor site containing COCs at concentrations exceeding the cleanup standards have been excavated and disposed of at ERDF. These results also indicated that residual concentrations in the shallow zone will support future land uses. However, the acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 105-F Reactor subsites 1 and 3 are verified to meet protectiveness standards in accordance with the Action Memorandum.

Code: 100-F-11 **Classification:** Accepted
Names: 100-F-11; 108-F Building 18-Inch French Drain **Reclassification:** Interim Closed Out (7/25/2002)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and closed out. The french drain was constructed of 46-centimeter (18-inch) concrete pipe of unknown length. The unit had no cover and was filled with gravel. A 2.5-centimeter (1-inch) steel pipeline entered the drain from the 108-F Building. The drain was visible on Hanford photograph 106669-90-CN. Documentation suggests that the french drain was likely removed with the layback zone of the 108-F Building.

Location: The unit was adjacent to the southwest corner of the 108-F Building.

**Related Sites/
Structures:** This site served as a french drain for the 108-F building (site 100-F-36).

Waste Type: Water
**Waste
Description:**

Closure Info: 100-F-4, 100-F-11, 100-F-15 and 100-F-16 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package (CVP-2002-00001) has documented that the site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

The COCs for this site consisted of the following: total chromium, hexavalent chromium, plutonium-238 and plutonium-239/240 as listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

A cleanup verification sampling strategy was developed for the site based on the SAP and was approved in a status meeting by the U.S. Environmental Protection Agency. Because the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains were removed during decommissioning and demolition activities and backfilled with clean material, variance sampling was eliminated and cleanup verification samples were collected. The 100-F-15 french drain was sampled as per the SAP. The 100-F-4, 100-F-11, and 100-F-16 french drains were considered analogous to the 100-F-15 french drain and were verified as clean by excavating and sampling a test pit at each location.

Site excavation was completed as reported in the 108-F Biological Laboratory D&D Project Closeout Report. The CVP report documents that the 100-F-4, 100-F-11, 100-F-15, and 100-F-

16 french drains have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 362.2 meters squared (3898.7 square feet) in area with a depth of 4.6 meters (15.0 feet). No material from the sites was disposed of at the Environmental Restoration Disposal Facility as a result of the Remedial Action Project activities described here. Verified clean materials were used as backfill at the completion of the remedial action.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-F-12	Classification:	Accepted
Names:	100-F-12; 36-Inch French Drain at 105-F Building	Reclassification:	No Action (2/15/2005)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site is currently a flat, cobble-covered area.		
Location:	The site was located at the northeast corner of the 105-F Reactor Building, adjacent to a steel door marked "Electrical Equipment Room No. 1".		
Process Description:	The site was a French drain, 0.9 meters (3 feet) diameter concrete pipe, buried to an unknown depth. The upper surface of the drain was a few inches above grade and had a steel lid (manhole cover) marked "confined space." The drain was fed by four 19-millimeter (0.75 inch) and one 25-millimeter (1-inch) steel pipes coming from the northeast corner of the 105-F Building. Based on the pipe size it is believed that these pipes may have been steam condensate lines associated with the building's steam heaters.		
Related Sites/ Structures:	The site was associated with the 105-F Reactor Building.		
Waste Type:	Water		
Waste Description:			
Closure Info:	The Remaining Sites Verification Package (RSVP-2004-126) demonstrates that the site meets the objectives for no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev . 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). Based on the pipe sizes of the four 19-millimeter (0.75 inch) and one 25-millimeter (1-inch) steel pipes coming from the northeast corner of the 105-F Building to the drain, it was believed that these pipes may have been steam condensate lines associated with the buildings steam heaters. This portion of the building was removed during the decommissioning and demolition (D) portion of the 105-F Reactor Interim Safe Storage (ISS) Project.		

The contaminants of potential concern (COPCs) were identified based on existing historical information and the drains proximity to the 105-F Reactor Building. Potential contaminants included cobalt-60, cesium-137, europium-152, europium-154, europium 155, plutonium 238,

plutonium-239/240, strontium-90, hexavalent chromium, and lead (DOE/RL-96-22, Rev. 4). As a result of further evaluation of this site, a decision was made to add polychlorinated biphenyls, arsenic, barium, cadmium, total chromium, silver, selenium, and mercury as COPCs. A focused sampling approach (BHI 0100-F-WI-G0006) was designed and implemented for confirmatory sampling of this site on October 11, 2004. Two samples were taken, one from the soil contents and one field duplicate. The samples were taken at a depth of approximately 4.0 meters (13.1 feet) below ground surface. Sample numbers for this site were J01XR3, J01XR4 and J01XR5 and have been reported to HEIS.

The French drain was removed and the site backfilled with clean borrow material on February 23, 2011 (WCH EL-1651, pgs 58 and 59, Email 04262011). The removed material was disposed to ERDF. The results of the confirmatory sampling were used to make reclassification decisions for the site in accordance with the TPA-MP-14 (DOE-RL 1998) process.

The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals. The sampling results also show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-F-16	Classification:	Accepted
Names:	100-F-16; 108-F Building 30-Inch French Drain	Reclassification:	Interim Closed Out (7/25/2002)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and closed out. The french drain was constructed of steel pipe, filled with gravel, and covered with a steel lid. The drain extended 18 centimeters (7 inches) above grade and was 76 centimeters (30 inches) in diameter. Documentation suggests that the drain was likely removed with the layback zone of the 108-F Building excavation.		
Location:	The drain was next to the south wall of the 108-F Building east loading dock, between the gas cylinder storage shed and the loading dock exit stairs.		
Related Sites/ Structures:	This site served as a french drain for the 108-F building (site 100-F-36).		
Waste Type:	Water		
Waste Description:	The dates of operation and type and quantity of waste are unknown.		
Closure Info:	100-F-4, 100-F-11, 100-F-15 and 100-F-16 were addressed as a group. The information below documents information for the group of sites.		

The cleanup verification package (CVP-2002-00001) has documented that the site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

The COCs for this site consisted of the following: total chromium, hexavalent chromium, plutonium-238 and plutonium-239/240 as listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

A cleanup verification sampling strategy was developed for the site based on the SAP and was approved in a status meeting by the U.S. Environmental Protection Agency. Because the 100-F-

4, 100-F-11, 100-F-15, and 100-F-16 french drains were removed during decommissioning and demolition activities and backfilled with clean material, variance sampling was eliminated and cleanup verification samples were collected. The 100-F-15 french drain was sampled as per the SAP. The 100-F-4, 100-F-11, and 100-F-16 french drains were considered analogous to the 100-F-15 french drain and were verified as clean by excavating and sampling a test pit at each location.

Site excavation was completed as reported in the 108-F Biological Laboratory D&D Project Closeout Report. The CVP report documents that the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 362.2 meters squared (3898.7 square feet) in area with a depth of 4.6 meters (15.0 feet). No material from the sites was disposed of at the Environmental Restoration Disposal Facility as a result of the Remedial Action Project activities described here. Verified clean materials were used as backfill at the completion of the remedial action.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-F-18	Classification:	Accepted
Names:	100-F-18; 105-F Condensate Drain Field; Underground Tank at 105-F Building	Reclassification:	No Action (2/15/2005)
Type:	Drain/Tile Field	Start Date:	
Status:	Inactive	End Date:	
Description:	The site was demolished during the 105-F Reactor Interim Safe Storage Project.		
Location:	The site was located adjacent to the north wall of the 105-F Reactor supply fan room of the Building, which was the northwest corner of the 105-F Reactor Building.		
Process Description:	The site was not visible at the surface, but was identifiable by a 20-centimeter (8-inch) diameter, 91-centimeter (36-inch) long steel pipe welded to what appeared to be the top of a 91-centimeter (36-inch) diameter steel tank. The upper surface of the "tank" was above grade. Liquid was observed through the steel pipe when the site was investigated for the 100-F Technical Baseline Report.		
Related Sites/ Structures:	118-F-8, 105-F Reactor and Fan Room.		
Waste Type:	Water		
Waste Description:			
Closure Info:	During the reclassification investigations for the Remaining Sites Verification Package (RSVP) (2004-137) a focused sampling design was implemented on October 22, 2004, in accordance with Work Instruction for 100-F-18 Condensate Drain Field and Underground Tank. The site was investigated through field observations and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present.		

One test trench was excavated to explore the location specified in the 2/05/04 Geophysical Survey of a metallic geophysical anomaly. The survey was done to determine if the tank and drain field were present or if they were completely, or partially, removed during decommissioning and demolition activities. No remnants of the tank or drain field were found, indicating that the "tank" and drain field (if present) were likely removed during the 105-F Reactor Interim Safe Storage Project.

The contaminants of potential concern (COPCs) for the site are carbon-14, cobalt 60, cesium-137, europium 152, europium-154, europium-155, tritium, uranium-234, uranium-235, uranium-238, strontium-90, hexavalent chromium, lead, mercury, semivolatile organic compounds, volatile organic compounds, plutonium-238, plutonium-239/240, polychlorinated biphenyls, total petroleum hydrocarbons, arsenic, barium, cadmium, total chromium, silver, and selenium.

The RSVP demonstrated that the site meets the objectives for no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA 1999). This report also shows that site soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future land uses of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-F-19	Classification:	Accepted
Names:	100-F-19; 1904-F Process Sewer; Contaminated Underground Lines; Effluent Water System; 100-F Reactor Cooling Water Effluent Underground Pipelines	Reclassification:	Interim Closed Out (9/15/2003)
Type:	Radioactive Process Sewer	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	This site contained the 100-F Reactor cooling water effluent lines which have been divided into a small pipeline or trench and three subsites. The three subsites have been remediated and Interim Closed Out. Only the 116-F-2 trench section remains to be remediated. See cleanup activities field and each subsite for documentation of the remediation and closure. Subsite 19:1 contained a line that was constructed of steel (152 centimeters [60 inches] in diameter, 235 meters [770 feet] long) and concrete (182 centimeters [72 inches] in diameter, 280 meters [920 feet] long) from the basin to the 1904-F Outfall Structure. Subsite 19:2 consisted of effluent lines that transported 105-F Reactor cooling water from the reactor core to the 107-F Retention Basin (three lines - one measuring 106-centimeters [42-inches] in diameter and 635 meters [2,080 feet] long, a second measuring 152 centimeters [60 inches] in diameter and 283 meters [930 feet] long and the third measuring 105 centimeters [41 inches] in diameter and 238 meters [781 feet] long). The large effluent lines running between the 105-F Reactor Building and the 107-F Retention Basin were underground for the western section of the lines and above ground for the remainder. The above ground portions of each line have been removed, cut into sections, and placed in the retention basin where they are currently covered with a layer of soil. Subsite 19:3 consisted of the effluent line that ran from the 105-F Reactor and the 182-F and 183-F Buildings to the 116-F-1 Lewis Canal. It also included all associated expansion and valve boxes, but excluded the retention basin, outfall structure, and those effluent lines that were within the confines of the 105-F Reactor Building. Other excluded lines were all the clean water pipelines that were upstream of the reactor building, all underground lines that were		

unique to the Experimental Animal Farm, and the smaller reactor effluent lines on the southwest side of the reactor. The underground process sewers show little evidence of their location at the surface. Effluent pipe ends are exposed on the east side of the 100-F Area entrance road.

Location: Subsite 100-F-19:1 included the lines from the 107-F Retention Basin that extend to the north where they met the 116-F-8 (1904-F) Outfall Structure. These pipelines are in the northeast section of the 100-F Area, near the 146-F biology facilities, the 100-F Retention Basins, and the 100-F Outfalls.

Subsite 100-F-19:2 included the main effluent lines that exited the 105-F Reactor Building, extending to the east and then curving to the north where they discharged to the 107-F Retention Basin. This subsite also included the pipeline that exited the north side of the reactor and extended to the west emptying into the Lewis Canal.

Subsite 100-F-19:3 included pipelines from both the 182-F and 183-F Buildings to the Lewis Canal, and the process sewer line connecting 182-F and 183-F.

Process Description: Effluent water passed from the reactor rear face and flowed via gravity through the underground effluent lines, junction boxes and diversion boxes to the retention basins where it was held up for a short period of time to allow thermal and radiological cooling before being released through the outfall structure to the Columbia River. These pipelines carried radioactive effluent from the 100-F Area Retention Basins to the 1904-F and 116-F-16 outfalls and spillways.

During periods of reactor fuel cladding ruptures, some effluent was diverted to an open trench. Cooling of the 105-F Reactor during operation required that a large volume, approximately 380,000 liters/minute (100,000 gallons/minute) of high quality water be continuously supplied to the reactor on a single pass basis. This water was obtained from the Columbia River and, after chemical treatment and filtering in the water treatment plant, was directed through the reactor process tubes. As it passed through the reactor, the cooling water became radioactive to a degree due to irradiation of the remaining impurities and the pick-up of corrosion products from within the piping and process tubes. Upon exiting from the reactor, the coolant was conveyed to the 107-F Retention Basin by gravity flow via a large diameter pipe, the effluent water line. After being retained in the 107-F Retention Basin long enough to permit decay of the short half-life radioactive elements, the water flowed through another large diameter pipe to the 116-F-8 (1904-F) Outfall Structure.

Occasionally during reactor operation, failure of the protective cladding on one of the fuel elements would occur. The reactor coolant would then pick up debris from this failure and, for a limited time, be contaminated with long half-life radionuclides. On these occasions, the effluent would not be permitted to return directly to the river, but would be diverted from the 107-F Retention Basin to the 107-F Liquid Waste Disposal Trench which was located near the retention basin. The trench functioned as a large filter with the highly radioactive particulate matter being retained in the soil below the trench and the purified water eventually finding its way back to the river.

Related Sites/ Structures: Related sites include the 105-F Reactor Building, the 1608-F Lift Station, the 107-F Retention Basin (116-F-14), the 1904-F Outfall Structure (116-F-8), the 107-F Liquid Waste Disposal Trench (116-F-2), and the 116-F-1 Lewis Canal. The water treatment pipelines are site 100-F-26, the clean water pipelines are 100-F-41, and pipes associated with the animal farm are 100-F-29.

Waste Type: Process Effluent

Waste Description: The waste was radioactively contaminated steel piping, concrete and soil. Reactor cooling water became radioactively contaminated as it passed through the reactor core. Activation

products created in the water included calcium-41, chromium-51, and zinc-65. Activation products from the reactor core that were picked up and transported by the cooling water included tritium, carbon-14, cobalt-60, nickel-63, and europium-152/154/155. Fuel element fission products such as strontium-90, and cesium-137, as well as transuranics such as plutonium-239/240 were introduced into cooling water due to fuel cladding failures. Concentrations of radionuclides in cooling water during normal reactor operations were approximately 0.2 microcuries/liter. Concentrations of radionuclides have built up in rust flakes and scale on the inner surfaces of the pipelines and in sludge in the diversion and junction boxes. Average beta-gamma concentrations for the effluent line scale and junction/diversion boxes are 83,000 and 120,000 picocuries/liter, respectively. Average plutonium-239/240 concentrations are 66 picocuries/gram for the effluent line scale and 720 picocuries/gram for the sludge at the bottom of the diversion and junction boxes. Direct readings of the bottom of the effluent lines averaged approximately 40,000 counts/minute with a Geiger-Mueller probe. Additional chemicals were added to the effluent for purposes of water treatment. These included aluminum sulfate (alum), with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.

This Site has the Following SubSites:

Code: 100-F-19:1

Names: 100-F-19:1; 100-F Reactor Cooling Water Effluent Underground Pipelines (North Group)

Code: 100-F-19:2

Names: 100-F-19:2; 100-F Reactor Cooling Water Effluent Underground Pipelines (South Group)

Code: 100-F-19:3

Names: 100-F-19:3; 100-F Reactor Cooling Water Effluent Underground Pipelines (West Group)

Code: 100-F-19:1

Classification: Accepted

Names: 100-F-19:1; 100-F Reactor Cooling Water Effluent Underground Pipelines (North Group)

Reclassification: Interim Closed Out (5/22/2002)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-19:1 North Pipelines subsite included piping that ran north-northwest from the north side of the 116-F-14 Retention Basin to the 116-F-8 Outfall Structure and also included a second underground effluent pipeline that extended northwest from the 116-F-14 Retention Basin to a junction box and to the 116-F-16 Outfall Structure.

The pipelines in this area have been removed including miscellaneous co-located pipelines that were within the excavation boundary.

Location: These pipelines are in the northeast section of the 100-F Area, near the 146-F biology facilities, the 100-F Retention Basins, and the 100-F Outfalls.

Process Description: These pipelines carried radioactive effluent from the 100-F Area Retention Basins to the 1904-F and 116-F-16 outfalls and spillways.

Waste Type: Not Specified

Waste Description: The waste was radioactively contaminated steel piping, concrete and soil.

Closure Info: 100-F-19:1, 100-F-19:3, 100-F-34 and 116-F-12 were addressed as a group. The information below documents information for the group of sites.

The 100-F-19:1 North Pipelines, 100-F-19:3 West Pipelines, 100-F-34 Biology Facility French Drain, and the 116-F-12 French Drain were remediated as a group in CVP-2001-00002. These sites meet the cleanup standards specified in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

The site remedial action began on August 7, 2001. Excavation of the site involved removing overburden materials, pipelines, french drain structures, and contaminated soil. Cleanup verification sampling began on September 7, 2001, and was finished on September 25, 2001. The results showed that the materials from the 100-F-19:3 subsite containing COCs at concentrations exceeding RAGs have been excavated and disposed of.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. All cleanup verification samples for the 100-F-19:3, 100-F-34 and 116-F-12 sites are listed under 100-F-19:1.

The SubSite is Part Of:

Code: 100-F-19

Names: 100-F-19; 1904-F Process Sewer; Contaminated Underground Lines; Effluent Water System; 100-F Reactor Cooling Water Effluent Underground Pipelines

Code: 100-F-19:2

Classification: Accepted

Names: 100-F-19:2; 100-F Reactor Cooling Water Effluent Underground Pipelines (South Group)

Reclassification: Interim Closed Out (9/15/2003)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-19:2 Reactor Cooling Water Effluent Pipeline and co-located sites, (116-F-11 Cushion Corridor French Drain, UPR-100-F-1 Sewer Line Leak, and the 100-F-29 Experimental Animal Farm Pipelines), were remediated as a group and documented in CVP-2001-00003.

See 126-F-1 for information on cleanup of leaks from the 100-F-19:2 above-ground pipelines.

Location: This group of effluent lines exited the reactor building, extending to the east, and to the north where they discharged to the 107-F Retention Basin. A portion of these pipelines were above ground before emptying into the retention basin. Another section of pipe in this subsite ran from the north side of the reactor and emptied into Lewis Canal.

Waste Type: Not Specified

Waste Description: The waste was radioactively contaminated steel piping, concrete and soil.

Closure Info: 100-F-19:2, 116-F-11, UPR-100-F-1 and 100-F-29 were addressed as a group. The information below documents information for the group of sites.

The 100-F-19:2 Reactor Cooling Water Effluent Pipeline and co-located sites, (116-F-11 Cushion Corridor French Drain, UPR-100-F-1 Sewer Line Leak, and the 100-F-29 Experimental Animal Farm Pipelines), were remediated as a group and documented in CVP-2001-00003.

Remedial Action ran from August 2001 until December 2002. Verification sampling was

conducted in January 2003. Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. Contaminants of concern (COCs) were C-14, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Ni-63, and Sr-90.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. The basis for reclassification was described in detail in the Cleanup Verification Package 2001-00003.

The cleanup verification package does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

The SubSite is Part Of:

Code: 100-F-19

Names: 100-F-19; 1904-F Process Sewer; Contaminated Underground Lines; Effluent Water System; 100-F Reactor Cooling Water Effluent Underground Pipelines

Code: 100-F-19:3

Classification: Accepted

Names: 100-F-19:3; 100-F Reactor Cooling Water Effluent Underground Pipelines (West Group)

Reclassification: Interim Closed Out (5/22/2002)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-19:3 West Pipelines subsite included sections of effluent pipelines located north of the reactor running west from the 182-F Reservoir and the 126-F-12 (183-F) Clearwell to the 116-F-1 Lewis Canal. This subsite also included piping running in a north-south direction between the 182-F Reservoir and the 126-F-12 (183-F) Clearwell. The site contaminants of concern included C-14, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Ni-63, Sr-90, hexavalent chromium.

Location: Subsite 100-F-19:3 included pipelines from both the 182-F and 183-F Buildings to the Lewis Canal, and the process sewer line connecting 182-F and 183-F. These pipelines are in the northern part of the 100-F Area, running from the 182-F Reservoir and 183-F Clearwell to the Lewis Canal.

Waste Type: Not Specified

Waste Description: The waste was radioactively contaminated steel piping, concrete and soil.

Closure Info: 100-F-19:1, 100-F-19:3, 100-F-34 and 116-F-12 were addressed as a group. The information below documents information for the group of sites.

The 100-F-19:1 North Pipelines, 100-F-19:3 West Pipelines, 100-F-34 Biology Facility French Drain, and the 116-F-12 French Drain were remediated as a group in CVP-2001-00002. These sites meet the cleanup standards specified in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

The site remedial action began on August 7, 2001. Excavation of the site involved removing overburden materials, pipelines, french drain structures, and contaminated soil. Cleanup verification sampling began on September 7, 2001, and was finished on September 25, 2001. The results showed that the materials from the 100-F-19:3 subsite containing COCs at

concentrations exceeding RAGs have been excavated and disposed of.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. All cleanup verification samples for the 100-F-19:3, 100-F-34 and 116-F-12 sites are listed under 100-F-19:1.

The SubSite is Part Of:

Code: 100-F-19

Names: 100-F-19; 1904-F Process Sewer; Contaminated Underground Lines; Effluent Water System; 100-F Reactor Cooling Water Effluent Underground Pipelines

Code: 100-F-23

Classification: Accepted

Names: 100-F-23; 141-C Drywell; 100-F Experimental Animal Farm Drywell

Reclassification: Interim Closed Out (8/14/2003)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and closed out.

The site was a drywell (french drain). The 141-C Building included a dry well at its southwest corner that drained a loading dock at the facility's southwest end.

Location: The waste site was located in the 100-F Experimental Animal Farm are. The 141-C Drywell was located approximately 90 meters (295 feet) east of the 107-F Retention Basin Perimeter Fence and approximately 45 meters (148 feet) northeast of Well #A4596.

Process Description: Animals were monitored for radioactivity in this facility. The french drain received wash down of animal wastes. The french drain may have received liquid waste from the 141-C Isotope Study Facility/Animal Barn, which housed plant and animal research on the effects of ionizing radiation. The site may have received liquid wastes from animal pens and 141-C Building research laboratories. It is also likely that the french drain received storm water runoff from the loading dock.

Related Sites/Structures: The 141-C Drywell received liquid wastes from animal pens and 141-C Building research laboratories.

Waste Type: Animal Waste

Waste

Description:

Closure Info: Remedial action at the 100-F-23 site began and was completed on April 12, 2003. Excavation of the site involved removing the overburden materials and underlying contaminated soil. The elevation of the bottom of the excavation was approximately 124.3 m (408 ft) upon completion. The excavation was approximately 170 m² (1,829 ft²) in area with a maximum depth of approximately 3.2 m (11 ft). Approximately 458 m³ (505 t) of material from the site was disposed at ERDF. No associated pipeline structure was discovered during excavation of the site. Contaminants of concern are C-14, Cs-137, Co-60, Eu-152, Sr-90, hexavalent chromium. Cleanup verification sampling began and was finished on April 16, 2003.

The CVP demonstrates that remedial action at the 100-F-23 site has achieved the RAOs and corresponding RAGs as established in the ROD (EPA 1999) and RDR/RAWP (DOE/RL-96-17). These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that

residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Code: 100-F-24 **Classification:** Accepted
Names: 100-F-24; 145-F Drywell **Reclassification:** Interim Closed Out (8/12/2003)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site has been remediated and closed out.
Location: The site was located approximately 93 meters (305 feet) west of the 107-F Retention Basin perimeter fence and approximately 46 meters (151 feet) northwest of Well #A4596.
Process Description: The french drain received liquid animal wastes from the 145-F Building laboratories, which conducted experiments on the effects of ionizing radiation.
Related Sites/ Structures: The site received liquid waste from the 145-F Building research laboratories.
Waste Type: Animal Waste
Waste Description:
Closure Info: The CVP-2003-00012 has documented that remedial action at the 100-F-24 site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP (DOE/RL-96-17).

Remedial action began and ended on April 12, 2003. At the completion of remedial action, the total excavation was approximately 113 meters squared (1,216 square feet) in area with a depth greater than 2.7 meters (8.9 feet). Approximately 259 metric tons (286 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. The pipeline structure associated with the site was entirely within the footprint of the excavation and removed during remediation. Contaminants of concern are C-14, Cs-137, Co-60, Eu-152, Sr-90, hexavalent chromium. Verification samples were collected on April 16, 2003.

Since the Remaining Sites DQO (BHI-01249) COPC lists were originally established, remediation of contaminated soil associated with the Experimental Animal Farm facilities in the 100-F Area, such as the 116-F-9 Experimental Animal Farm Animal Waste Leaching Trench (CVP-2001-00008), has provided potential contaminant information based on sampling and analysis. Cleanup verification sampling at the 116-F-9 site indicated that the COCs identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/R-96-22) (carbon-14, cesium-137, cobalt 60, europium-152, strontium-90, and hexavalent chromium) are appropriate for waste sites associated with Animal Farm activities studying the effects of radiation.

The 100-F-24 French drain is believed to have received liquid wastes from 145-F Animal Monitoring Laboratory. Based on verification sampling results from remediation of the 116 -F-9 site, and with concurrence from the regulators, the COCs selected for the 100-F-24 site are the same as those identified in the SAP (DOE/RL-96-22) for the 116-F-9 site (CVP-2001-00008).

The remaining soils at the 100-F-24 site have been sampled, analyzed, and modeled. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The 100-F-24 site is

verified to be remediated in accordance with the ROD (EPA 1999) and may be backfilled.

Code: 100-F-25	Classification: Accepted
Names: 100-F-25; 146-FR Drywells	Reclassification: Interim Closed Out (8/14/2003)
Type: French Drain	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1975

Description: The site has been remediated and closed out. The 100-F-25, 146-FR Drywells, were a pair of french drains associated with the 146-F and 146-FR Aquatic Biology and Fish Ponds Laboratories, which both housed research on the effects of ionizing radiation on fish.

Location: The site was located approximately 75 meters (246 feet) south-southwest of the 116-F-8 Outfall Site and 15 meters (49 feet) east of Well # 1-F5-6. The 100F Area coordinates for the drywells are N80511.5, W29327.9 (center) and N80521.5, W29327.9.

Process Description: The french drains are believed to have received liquid wastes from 146-F and 146-FR research laboratories and ponds.

Related Sites/ Structures: The site was related to the 146-FR and 146-F Buildings, both housed research on the effects of ionizing radiation on fish.

Waste Type: Steam Condensate

Waste Description:

Closure Info: 100-F-25 and UPR-100-F-3 were addressed as a group. The information below documents information for the group of sites.

The CVP-2003-00010 has documented that remedial action at the site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP.

Waste site contaminants of potential concern (COPCs) for the 100-F-25 site were originally identified in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (Remaining Sites DQO) (BHI-01249). Process effluent from the 105-F Reactor was used in the 146-F and 146 FR aquatic laboratories, which fed the 100-F-25, 146-F Drywells. Since the Remaining Sites DQO was published, remediation of contaminated soil associated with process effluent has provided additional potential contaminant information. The contaminants of concern are: carbon-14, cesium-137, cobalt-60, europium-152, europium-154, nickel-63, strontium-90, mercury and hexavalent chromium.

Remedial actions were conducted on April 12, 2003. At the completion of remedial action, the total excavation was approximately 243 meters squared (2,615 square feet) in area with a depth of approximately 4.0 meters (13 feet). Approximately 809 metric tons (892 tons) of material (structures and soil) from the site were disposed at the Environmental Restoration Disposal Facility. Contaminants of Concern are c-14, Cs-137, Co-60, Eu-152, Eu-154, Ni-63, Sr-90, hexavalent chromium, mercury. Verification samples were collected on April 16, 2003.

The CVP demonstrates that remedial action at the site have achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP (DOE/96-17). The remaining soils at the UPR-100-F-3 site have been sampled, analyzed, and modeled. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Code:	100-F-26	Classification:	Accepted
Names:	100-F-26; 100-F Water Treatment Facility Underground Pipelines	Reclassification:	None
Type:	Process Sewer	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	<p>The site encompasses the upstream (pre-reactor) process sewers for the 100-F Area, including all underground water lines used to transport reactor cooling water between water treatment facilities and the 105-F Reactor Building. These include potentially contaminated underground lines running between buildings and those that run to drainage facilities. Excluded lines consist of those located within buildings, lines downstream of the reactor building, (100-F-19 i.e., those lines that carry cooling water from the reactor to the retention basin, trench, and/or the river outfall) some of the underground lines associated with the Experimental Animal Farm (100-F-29 and 100-F-33) and clean water pipelines (100-F-41). For evaluation purposes, the site has been divided into 16 subsites based on design purpose (e.g., sanitary sewer or process water), expected sources of contamination, and potential remedial actions. The 16 subsites are as follows: - 100-F-26:1 North process sewer collection pipelines - 100-F-26:2 Process water pipelines to the aquatic biology and strontium gardens - 100-F-26:3 184-F Powerhouse pipelines - 100-F-26:4 South process pipelines - 100-F-26:5 190-F bypass pipelines - 100-F-26:6 190-F Reservoir pipelines - 100-F-26:7 Sodium dichromate and sodium silicate pipelines - 100-F-26:8 1607-F1 sanitary sewer pipelines - 100-F-26:9 1607-F2 sanitary sewer pipelines - 100-F-26:10 1607-F3 sanitary sewer pipelines - 100-F-26:11 1607-F4 sanitary sewer pipelines - 100-F-26:12 1.8-m (72-in.) main process sewer pipeline - 100-F-26:13 108-F drain pipelines - 100-F-26:14 116-F-5 influent pipelines - 100-F-26:15 Miscellaneous pipelines associated with the 1608-F sump - 100-F-26:16 Reactor cooling water pipelines.</p>		
Location:	<p>The location is described as underground lines running from the 181-F River Pumphouse to the 182-F Reservoir, the 183-F Basins and Clearwells, the 184-F Powerhouse, the 190-F Buildings, 108-F Biology Laboratory, and to the 105-F Reactor Building. Also, the drainage lines running from the water treatment buildings to the junction with the 100-F-19 Effluent Pipeline at the Animal Farm are included in the site. Septic sewer system pipelines are included only where they are co-located with the other pipelines in this site.</p>		
Process Description:	<p>Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, and pumped to the reactor core at a rate of 1.93E+05 liters (51,000 gallons) to 2.69E+05 liters (71,000 gallons) per minute.</p>		
Related Sites/ Structures:	<p>Related structures include the 181-F River Pumphouse, the 182-F Settling Basin, the 183-F Basins and Clearwells, the 184-F Powerhouse, the 190-F Water Treatment Building, the 105-F Reactor, 185-F, the 108-F Biology Laboratory, and the several 1700-series support buildings. Pipeline sites in the 100-F Area include the Process Effluent Pipelines in site 100-F-19, the Water Treatment Pipelines in site 100-F-26, the river effluent lines are site 100-F-39, the clean water pipelines were 100-F-41, the experimental animal farm pipelines in site 100-F-29 and miscellaneous pipelines in 100-F-44.</p>		
Waste Type:	Water		
Waste Description:	<p>The waste consists of contaminated pipelines made of various materials (i.e. steel piping, concrete and soil). Chemical additives to the reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.</p>		

This Site has the Following SubSites:

100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100 KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, ROD).

The 100-F-26:1 subsite pipelines were stratified into five service areas based on the contributing discharges to pipeline segments from each of the two facilities. The subsite is a network of reinforced concrete and vitrified clay process sewer pipelines that received flow from the 182-F Reservoir and 183-F Clearwells.

Location: These pipelines are adjacent to the 182-F Reservoir and 183-F Clearwell.

Waste Type: Soil

Waste Description: The waste was pipeline sediment/scale and underlying soil.

Closure Info: The Remaining Sites Verification Package (RSVP). 2005-008, has documented that the subsite has achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100 KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, ROD).

Confirmatory sampling of the subsite was conducted between December 1, 2004, and January 10, 2005. A stratified sampling design with focused sampling of pipeline sediment/scale and underlying soil was implemented in each of the five service areas. In each service area, a test pit was excavated and a section of the pipeline was removed. The inverts of the pipelines were identified at depths of 4 to 4.9 m (13 to 16 ft) below ground surface (bgs) at the locations excavated, with the exception of the sewer line southwest of the 182-F Reservoir, for which a junction box was located at 1.5 m (5 ft) bgs. Soil samples beneath the pipe and samples of the scale/sediment inside the pipe were collected.

The contaminants of potential concern (COPCs) are cobalt 60, cesium-137, europium-152, europium-154, strontium-90, silver, barium, cadmium, chromium (total), mercury, lead, selenium, arsenic, hexavalent chromium and polychlorinated biphenyls (PCBs).

The confirmatory sampling results supported a reclassification of this site to no action. The results demonstrated that residual contaminant concentrations supported future unrestricted land use that can be represented (or bounded) by the rural-residential scenario. These results also indicated that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. This subsite does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:2

Classification: Accepted

Names: 100-F-26:2; Process Water Pipelines to the Aquatic Biology and Strontium Gardens

Reclassification: No Action (5/26/2005)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: According to the Work Instruction for 100-F-26:2 Process Water Pipelines to the Aquatic Biology Fish Ponds and Strontium Gardens, the subsite consisted of a 5.1-centimeter (2-inch) diameter carbon steel pipeline that exited the east side of the 190-F Pumphouse, then split and

conveyed flow to both the Aquatic Biology Fish Ponds and the Strontium Gardens. However, field excavation of test pits and exploratory trenches did not reveal the pipeline to the Strontium Gardens, nor did it reveal any indication that the Strontium Gardens pipeline split from the Aquatic Biology pipeline. The Aquatic Biology pipeline was opened and found to contain enough residual scale/sediment for the collection of one sample.

Location: These pipelines ran diagonally across the 100-F Area, from the 190-F Pumphouse northeast to the 146-F biology facilities, and southeast to the Strontium Gardens.

Waste Type: Not Specified

Waste Description: The waste is the pipeline and any contaminated soil that may have occurred because of leaks in the pipeline.

Closure Info: The Remaining Sites Verification Package for 100-F-26:2, RSVP-2005-005, has documented that the subsite has achieved the remedial action objectives (RAOs) and the remedial action goals (RAGs) for a no action reclassification. The RAOs/RAGs were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Sit (Remaining Sites ROD).

Contaminants of potential concern (COPCs) for the 100-F-26 underground pipeline waste site included strontium-90, cesium-137, cobalt-60, europium-152, europium-154, hexavalent chromium, arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver. Historical information and process knowledge for the 190-F Pumphouse was used to further develop the COPCs, resulting in the inclusion of polychlorinated biphenyls (PCBs). In addition, as a precautionary measure, gross-alpha samples were collected to determine if alpha emitters were present at levels above background.

Confirmatory sampling of the subsite was conducted from November 17 through 18, 2004, in accordance with the site work instruction. Since no manholes or junction boxes were indicated on site drawings, three test pits were excavated in search of the two 5.1 cm (2 in) process water pipelines conveying flow to the Aquatic Biology Fish Ponds and the Strontium Gardens. According to historical information discussed in the work instruction, the pipeline split at the location of test pit 1, and one 5.1 cm (2 in) pipe traveled southwest to the Strontium Gardens while the other 5.1 cm (2 in) carbon steel pipe traveled northeast to the Aquatic Biology Fish Ponds.

However, excavation of test pits and exploratory trenches at the locations of test pit 1 and test pit 3 did not reveal the pipeline to the Strontium Gardens, nor did they reveal any indication that there was ever a pipeline to the Strontium Gardens that split from the Aquatic Biology pipeline at the location of Test Pit 1. Further excavation of exploratory test trenches in the vicinity of test pits 1 and 3, between test pits 1 and 3, and between test pit 1 and the 190-F Pumphouse also did not reveal any indication that the Strontium Gardens pipeline split from the Aquatic Biology pipeline, nor that it exists in its presumed location. Consequently, as it could not be located, no confirmatory samples from the Strontium Garden pipeline were collected.

The purpose of excavating test pit 1 was to collect a sample of pipe scale from the pipe at the location where it split and formed two separate pipelines. As previously discussed, field excavation did not locate a split in the Aquatic Biology pipeline at or in the vicinity of test pit 1; therefore, it was determined by the field sampling task lead that test pit 1 was no longer a defensible focused sampling location. Since test pit 2 was located at a 90 degree bend in the pipeline, and no other pipelines contributed flow upstream or downstream of test pit 2, it was determined that residual contamination at test pit 2 was representative of the residual contamination throughout the pipeline. Therefore, test pit 2 was identified as a defensible worst case focused sampling location for the Aquatic Biology pipeline. Confirmatory samples of the

residual scale/sediment in the 5.1 cm (2 in) carbon steel pipe and soil beneath the pipe were collected at the 90 degree elbow in the pipe at test pit 2.

The no action decision for the 100-F-26:2 subsite is supported based on current reviews of the site history and confirmatory sampling results. The analytical results from soil samples collected were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The sampling results were stored in the Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS). They were also included in Appendix A of the RSVP.

These results indicated that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future land uses of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The subsite does not have a deep zone; therefore, no deep zone institutional controls were required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:3

Classification: Accepted

Names: 100-F-26:3; 184-F Powerhouse Pipelines

Reclassification: No Action (12/3/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The selected action for this subsite involved evaluation of the 100-B-14:6 pipeline subsite RSVP and data, evaluation of process knowledge for the 100-F-26:3 pipeline subsite, and proposal of no further action. The 100-F-26:3 pipeline subsite consisted of a network of process sewer pipelines that serviced the 184-F power house and 188-F ash disposal basin. The 184-F power house was primarily a boiler house, containing four boilers and one small turbine generator for emergency power generation. The 188-F ash disposal basin was an open rectangular-shaped pit used for the disposal of ashes from the 184-F Power House. Ash from the power house was combined with raw river water and pumped directly from the sluice pit in the power house to the ash disposal basin. Contaminants of Concern were ICP metals, mercury, hexavalent chromium, PCBs.

This site is analogous to the 100-B-14:6 subsite (184-B Power House pipelines, Waste Site Reclassification Form Control Number 2004-010, dated 5/10/2004).

Analytical results obtained from confirmatory sampling at the analogous 100-B-14:6 subsite indicated that the 100-F-26:3 subsite had also met the Remedial Action Objectives specified in the Remaining Sites ROD. The 100-B-14:6 site evaluation showed that there were no hazardous/dangerous materials present at the site and, accordingly, no residual contamination in the soil. The basis for reclassification of the subsite was supported, based on reviews of the processes associated with steam boilers, site history, and confirmatory sampling at the analogous subsite which was determined to meet the cleanup criteria. The remaining contaminant levels were protective of human health, groundwater and the Columbia River.

Location: Subsite location is the network of pipelines running from the 184-F power house to the 188-F ash disposal basin.

Waste Type: Not Specified

Waste The waste was the remaining pipelines and any potentially contaminated soil.

Description:

DESCRIPTION.

Closure Info: The selected action for this subsite involved evaluation of the 100-B-14:6 pipeline subsite RSVP and data, evaluation of process knowledge for the 100-F-26:3 pipeline subsite, and proposal of no further action. The 100-F-26:3 pipeline subsite consisted of a network of process sewer pipelines that serviced the 184-F power house and 188-F ash disposal basin. The 184-F power house was primarily a boiler house, containing four boilers and one small turbine generator for emergency power generation. The 188-F ash disposal basin was an open rectangular-shaped pit used for the disposal of ashes from the 184-F Power House. Ash from the power house was combined with raw river water and pumped directly from the sluice pit in the power house to the ash disposal basin. Contaminants of Concern were ICP metals, mercury, hexavalent chromium, PCBs.

This site is analogous to the 100-B-14:6 subsite (184-B Power House pipelines, Waste Site Reclassification Form Control Number 2004-010, dated 5/10/2004).

Analytical results obtained from confirmatory sampling at the analogous 100-B-14:6 subsite indicated that the 100-F-26:3 subsite had also met the Remedial Action Objectives specified in the Remaining Sites ROD. The 100-B-14:6 site evaluation showed that there were no hazardous/dangerous materials present at the site and, accordingly, no residual contamination in the soil. The basis for reclassification of the subsite was supported, based on reviews of the processes associated with steam boilers, site history, and confirmatory sampling at the analogous subsite which was determined to meet the cleanup criteria. The remaining contaminant levels were protective of human health, groundwater and the Columbia River.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:4

Classification: Accepted

Names: 100-F-26:4; South Process Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite is a network of process sewer pipelines that received flow from the 105-F Reactor, the 190-F Pumphouse, the 1717-F Combined Shops Buildings and the 108-F Biology Laboratory in the 100-F Areas. This subsite is a network of process sewer pipelines that received flow from the 105-F Reactor, the 190-F Pumphouse, the 1717-F Combined Shops Buildings and the 108-F Biology Laboratory in the 100-F Areas. The pipelines in 100-F-26:4 were subdivided into "service areas" for purposes of planning the confirmatory sampling effort. These service areas are:

Service Area 1 (105-F Reactor Building process sewer)
 - 39.6 m (130 ft) of 0.2-m (8-in.) vitrified clay pipe (VCP)
 - 62 m (203 ft) of 0.3 m (12-in.) VCP

Service Area 2 (108-F Biology Laboratory process sewer)
 - 96 m (315 ft) of 0.15-m (6-in.) VCP
 - 32 m (105 ft) of 0.15-m (6-in.) cast iron pipe

Service Area 3 (190-F Pumphouse process sewer)
 - 21.3 m (70 ft) of 0.76-m (30-in.) reinforced concrete pipe (RCP)

Service Area 4 (189-F Refrigeration Building process sewer)

- 54.9 m (180 ft) of 1.4-m (54-in.) RCP

Service Area 5 (1717-F Combined Shops Building process sewer)

- 120.4 m (395 ft) of 0.15-m (6-in.) VCP

Service Area 6 (central process sewer collection line)

- 285 m (935 ft) of 1.5-m (60-in.) RCP

- 53.3 m (175 ft) of 0.91-m (36-in.) RCP

- 72 m (236 ft) of 0.3-m (12-in.) VCP.

The contaminated cast-iron pipe found during the February 2002 excavation of the 108-F building was not located during this remedial action. Therefore, an additional test pit was excavated on November 29, 2005, in an attempt to locate the contaminated 15-centimeter (6-inch)-diameter cast-iron pipe. The additional excavation was unsuccessful, and the excavated material was placed back in the pit. Additional efforts in July 2006 to locate the contaminated pipe using a metal detector were also unsuccessful. However, the contaminated 15-centimeter (6-inch)-diameter cast-iron pipe (100-F-26:4) was found during test pitting activities in December 2006. The contaminated pipe was associated with the 100-F-26:4 pipeline site and was not a part of the 116-F-15 sump as previously indicated. Remediation and sampling activities for the 100-F-26:4 pipeline site will be included in a future work instruction and verification package.

Location: The pipelines in this subsite are located in the center of the 100-F Area, east of the 105-F Reactor and the 190-F Pumphouse and west of the 108-F Biology Laboratory and the 1717-F Combined Shops Building.

Waste Type: Not Specified

Waste Description: The waste is potentially contaminated equipment (pipelines) and any contaminated soil associated with the pipeline.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:5

Classification: Accepted

Names: 100-F-26:5; 190-F Bypass Process Sewer Pipelines

Reclassification: No Action (7/21/2005)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The Remaining Sites Verification Package, RSVP-2005-007 demonstrates that the 100-F-26:5 subsite has met the objectives for no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL 2005b) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

The subsite included the underground pipelines that serviced the 185-F Building and the 190-F Pumphouse Building, they were composed of 1.2-meter (48-inch) reinforced concrete pipe (RCP) and 0.46-meter (18-inch) vitrified clay pipe (VCP). The historic design flow direction consisted of discharges from the 185-F and 190-F Facilities traveling generally south before the pipeline turned west to discharge to one of the 100-F-19:3 [100-F Reactor Cooling Water Effluent Underground Pipelines (West Group)]. A discrepancy as to the termination point of the 100-F-26:5 pipeline was found, the CVP for the 100-F-19:3 waste site indicated that the 100-F-

26:5 pipeline was approximately 63 meters (207 feet) longer at the southwest end of the subsite than was shown on Drawing 0100F-DD-C0189.

Contaminants of potential concern (COPCs) for the subsite included strontium-90, cesium-137, cobalt-60, europium-152, europium-154, hexavalent chromium, arsenic, barium, cadmium, total chromium, lead, mercury, selenium, silver, and polychlorinated biphenyls (PCBs).

A total of 10 samples were collected between November 2004 and January 2005 from the service areas consisting of soil under the pipes, sediment inside of the pipes or manholes, one field duplicate, and an equipment blank. Samples (J022P0 through J022P6, J026X4, J02D79, J02D80 and J022M5) were collected and analyzed for the established COPCs. The samples and results have been reported to the HEIS database.

Mercury levels in test pit 2 (805 milligrams/kilograms) were significantly higher than the direct exposure remedial action goal (RAG) of 24 milligrams/kilograms. However, the sample that contained the high mercury concentration was taken at a depth of 5.5 meters (18 feet) below ground surface in the deep zone, and therefore direct exposure RAGs were not applicable.

The results demonstrated that residual contaminant concentrations support future land use that can be represented (or bounded) by the rural-residential scenario. These results also showed that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. However, because mercury concentrations in deep vadose zone soil exceed direct exposure, institutional controls are required for the 100-F-26:5 waste site to prevent excavation or drilling into the deep vadose zone soils.

Location: pipelines running from the 185-F and 190-F Facilities traveling generally south before the pipeline turned west to discharge to one of the 100-F-19:3 [100-F Reactor Cooling Water Effluent Underground Pipelines (West Group)].

Waste Type: Not Specified

Waste Description: The waste includes the pipelines, the contaminated scale and sediment which may be contained

within them, and the underlying soils.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:6

Classification: Accepted

Names: 100-F-26:6; 190-F Reservoir Pipelines

Reclassification: No Action (12/3/2004)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite includes cast iron pipe servicing the 190-F Pumphouse Building.

Location: The location is described as underground lines running from the 190-F Building to the 105-F Reactor Building.

Process Description: The subsite received flow via a cast iron pipeline (CIP) with lead joints, from the re-use water reservoir portion of the 190-F Pumphouse. Waste water from the steam jet condensers was collected in the re-use water reservoir and pumped back to the main reservoir (182-F Building) during the winter months to maintain the temperature of the process water.

Closure Info: The 100-F-26:6 pipeline subsite has been determined to meet the Remedial Action Objectives (RAOs) and Remedial Action Goals (RAGs) as established by the Interim Action Record of

Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD). The selected action for this subsite involved (1) evaluation of the analogous 100-B-14:7 subsite's RSVP and data, (2) evaluation of process knowledge, and (3) proposal of no further action.

The lead contained in the pipeline did not present a direct exposure risk to human health, no exposure pathway to groundwater existed. There was no history of radiological contamination associated with the 190-F Reservoir Pipelines and no radiological contamination was detected during decommissioning of the 190-F complex. There were no known process incidents at 105-F Reactor that would have introduced radiological contamination from the reactor into the 190-F Reservoir Pipelines.

The 190-F re-use water reservoir and pipeline are analogous to the 190-B Sump and Pipelines (100-B-14:7), as they had a similar source of water and supported a similar process.

The 100-B-14:7 pipeline subsite was determined to meet the cleanup criteria, consequently the 100-F-26:6 subsite also has met the cleanup criteria and the remaining contaminant levels were protective of human health, groundwater and the Columbia River. The site has been reclassified to No Action.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:7

Classification: Accepted

Names: 100-F-26:7; Sodium Dichromate and Sodium Silicate Pipelines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Note from the WIDS Administrator: After this reclassification form was approved, the pipeline was cut through as part of a different waste site remediation. Sodium dichromate was still present in the pipeline. Plans are being developed to remove/remediate the entire pipeline. The reclassification status listed on the reclassification form is no longer valid. The reclassification status for this subsite was cleared in WIDS on 6/10/2010.

The subsite consisted of two parallel, 0.07 meter (3 inch) steel pipelines that conveyed sodium dichromate and sodium silicate, respectively, from the 108-F Chemical Pumping Building to the 190-F Water Treatment Building.

The 100-F-26:7 waste site is a pair of 7.6-centimeter (3-inch) steel pipelines that conveyed sodium dichromate and sodium silicate, respectively, from the 108-F Chemical Pumping Building to the 190-F Water Treatment Building.

Based on historical information, the sodium silicate pipeline conveyed only chemicals with low inherent toxicity or that readily degrade to compounds of low inherent toxicity, and therefore is not considered hazardous/dangerous or to present a risk to human health or the environment.

Because the sodium silicate pipeline was within 0.8 m (2 ft) of the sodium dichromate pipeline along their entire lengths, the two were treated as twin pipelines for confirmatory sampling. Samples were taken of the soil beneath a 90-degree bend in the sodium dichromate pipeline and from a section of the pipe. The maximum detected results from the soil and pipe samples were

used to support site reclassification. The samples met the cleanup criteria so the pipes were left in place. A waste site reclassification to interim closed out was approved (120708).

During overburden removal of the 100-F-26:9 pipeline on February 14, 2007, WCH unearthed, broke open, spilled and cleaned up 1 to 2 gallons of liquid from the 100-F-26:7 interim closed out pipeline where it crossed diagonally over the top of the 100-F-26:9 pipeline. Conclusions from the soil sample results affected by the spill were that concentrations of total and hexavalent chromium were above cleanup standards. The waste site reclassification for 100-F-26:7 was withdrawn and the site was referred for remove, treat and disposal (135297).

Location: The pipelines ran from the 108-F Chemical Pumping Building to the 190-F Water Treatment Building.

Waste Type: Not Specified

Waste The waste is contaminated steel piping and underlying soils.

Description:

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:8

Classification: Accepted

Names: 100-F-26:8; 1607-F1 Sanitary Sewer Pipelines

Reclassification: Interim Closed Out (3/14/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite includes the 1607-F1 influent sanitary sewer pipelines. These pipelines were 200 m (660 ft) long and constructed of 8-inch vitrified clay. The pipelines serviced the 1701-F, 1709-F, and 1720-F Buildings.

Location: The 100-F-26:8 sanitary sewer pipelines and 1607-F1 sanitary sewer system waste sites are located within the 100-FR-1 Operable Unit of the Hanford Site, approximately 730 m (2395 ft) south of the 105-F Reactor Building.

Waste Type: Not Specified

Waste The waste is any potentially contaminated pipelines and associated soils.

Description:

Closure Info: 1607-F1 and 100-F-26:8 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP) for the 1607-F1 sanitary sewer system and 100-F-26:8 sanitary sewer pipelines waste sites has documented that they have met the Remedial Action Objectives (RAOs) and the corresponding Remedial Action Goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) for interim closure.

Remediation of the 1607-F1 and 100-F-26:8 waste sites were performed from January 8 to April 3, 2007 and documented as one RSVP. Both sites were excavated to approximately 3.4 meters (11 feet) below grade resulting in a combined volume of approximately 464 cubic meters (607 cubic yards) of material stockpiled for disposal at the Environmental Restoration Disposal Facility (ERDF). Approximately 266 meters (872 feet) of pipeline were removed during remediation. There were no anomalies or stained soil discovered during remediation.

During pipeline excavation, a french drain was discovered on the west side of the former 1709-F facility. Although this french drain was independent of the pipelines, it was removed.

The COCs/COPCs were established using the confirmatory sampling analytical results. Based on these results, the COC/COPCs for the 1607-F1 and 100-F-26:8 waste sites verification sampling design were the metals barium, lead, and zinc; pesticides (dichlorodiphenyl-dichloroethane [DDD], dichlorodiphenyl-dichloroethylene [DDE], dichlorodiphenyl-trichloroethane [DDT]); SVOCs (benzo(a)pyrene, benzo(k)fluoranthene, and chrysene); and PCBs (aroclor-1260). Petroleum hydrocarbons and mercury were added as COCs/COPCs based on the discovery of the 1709-F french drain during remediation of the 100-F-26:8 pipelines. These additions were based on the assumption that the probable sources of effluent in the french drain were from hose drying and truck washing activities. Therefore, potential contaminants in the effluent were from motor oil leaks and broken mercury switches.

Verification sampling for the remediated 1607-F1 and the 100 F 26:8 waste sites was performed in September and October 2007. Evaluation of the verification sampling results shows that all direct exposure cleanup levels were met for the four decision units of the 1607-F1 and 100-F-26:8 waste sites: the 1607-F1 septic tank and 100-F-26:8 pipelines excavation footprint, 1709-F french drain, road crossing areas, and overburden stockpiles.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. No institutional controls are required for this site to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:9

Classification: Accepted

Names: 100-F-26:9; 1607-F2 Sanitary Sewer Pipelines

Reclassification: Interim Closed Out (10/29/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100 F 26:9 subsite consisted of underground pipelines of the 1607-F2 sanitary sewers servicing the 105-F, 108-F, 184-F, 185-F, and 190-F buildings, and the 1700 F administration and service buildings (1704-F, 1707-F, 1707-FA, 1713-F, 1717-F, 1719 F, and 1722-F). According to documentation the 1607-F2 septic tank, which was Interim Closed Out in CVP-2002-00005, was posted as an underground radioactive material area. No evidence was found to substantiate the posting.

Location: The collection pipelines were located at 105-F, 108-F, 184-F, 185-F, 190-F, 1704-F, 1707-F, 1707-FA, 1713-F, 1717-F, 1719 F, and 1722-F Buildings, and ran to the south and east to the 1607-F2 septic tank.

Waste Type: Not Specified

Waste Description: The waste includes the pipelines and the contaminated scale and sediment which may be contained within them, and any contaminated soil associated with leaks from the pipelines.

Closure Info: In accordance with the Remaining Sites Verification Package, (RSVP-2008-029), the confirmatory and verification sampling results support a reclassification to Interim Closed Out.

The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD).

Twelve test pits were excavated and sampled in the 100-F-26:9 pipeline subsite. The contaminants at seven of the service areas (1, 3, 4, 5, 6, 7 and 8) were found to be at concentrations protective of human health, groundwater, and the Columbia River. A remedial action requirement was determined for service areas 2, 9, and 10. Service Area 11 was remediated because it was downstream of service areas 2 and 10.

Remediation of these service areas was performed from February 8 through October 30, 2007. The site was excavated to a depth of approximately 3.7 m (12 ft) below grade, resulting in approximately 1,360 bank cubic meters (BCM) (1,780 bank cubic yards [BCY]) of material disposed of at the Environmental Restoration Disposal Facility. Approximately 6,340 BCM (8,290 BCY) of overburden and layback soil was removed and stockpiled for use as clean backfill. Verification sampling for the 100-F-26:9 service areas 2, 9, 10, and 11 pipeline site was performed between February 2007 and February 2008.

The contaminants of concern for verification sampling were identified in the 100-F-26:9, 1607-F2 Sanitary Sewer Pipelines Verification Work Instruction (0100F-WI-G0024) as gamma-emitting radionuclides by gamma energy analysis, alpha emitting radionuclides by gross alpha proportional counting; beta-emitting radionuclides by gross beta proportional counting and for inductively coupled plasma metals, mercury, hexavalent chromium, TPH, semivolatle organic compounds, and PCBs.

The results of sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:10

Classification: Accepted

Names: 100-F-26:10; 1607-F3 Sanitary Sewer Pipelines

Reclassification: Interim Closed Out (12/3/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-26:10 underground pipeline subsite consisted of underground sanitary sewer pipelines that received effluent from the 182-F, 183-F, and 151-F Buildings and discharged to the 1607-F3 septic system. This subsite includes the 1607-F3 influent sanitary sewer pipelines. These pipelines were constructed of 6 and 8-inch vitrified clay. These pipelines serviced the 151-F, 182-F and 183-F Buildings. The Remaining Sites Verification Package (RSVP), 2007-028, has documented that the subsite achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites

ROD).

Location: The pipelines and septic systems were about one-quarter mile northwest and north of the 105-F Reactor.

Waste Type: Not Specified

Waste Description: The waste was contaminated pipelines and associated soils.

Waste Type: Not Specified

Waste Description: The waste was contaminated pipelines and associated soils.

Closure Info: In preparation for the site remediation, two road crossings were excavated, sampled, and immediately backfilled in January 2007. Remedial action was performed from March 7 through March 12, 2007. The site was excavated between 2.4 meters (8 feet) and 4.3 meters (14 feet) below grade, resulting in approximately 1,900 bank cubic meters (BCM) (2,500 bank cubic yards [BCY]) of material disposed at the Environmental Restoration Disposal Facility, including removal of approximately 600 meters (1,970 feet) of pipeline. Approximately 4,200 BCM (5,500 BCY) of overburden soil was removed and stockpiled for use as clean backfill.

According to documentation, a portion of the north-south vitrified clay pipeline (VCP) line that serviced the 182-F Pump Station and a portion of the 183-F Water Treatment Plant VCP line were removed during decommissioning of the buildings, leaving two separate sections of pipeline. The 1607-F3 septic tank, drain field, and associated contaminated soil were removed in September 2005. Remedial action objectives for the 1607-F3 waste site were met after the additional excavation of contaminated soil in 2006 and were addressed in RSVP-2006-047.

The Contaminants of Concern/Contaminants of Potential Concern (COCs/COPCs) for verification sampling were determined based on the confirmatory sampling results from the 100-F-26:10 waste site. The COCs/COPCs were identified in the verification work instruction (0100F WI G0064) as cesium-137, europium-152, arsenic, barium, boron, cadmium, total chromium, cobalt, copper, lead, manganese, molybdenum, nickel, vanadium, zinc, hexavalent chromium, gamma-chlordane, SVOCs, and aroclor-1260.

The verification samples were analyzed by gamma energy analysis and for pesticides, SVOCs, PCBs, metals by inductively coupled plasma analysis, mercury and hexavalent chromium, which included all of the COCs/COPCs listed in the verification work instruction. The road crossing samples were additionally analyzed for nickel-63 and total strontium.

Verification sampling for the site was performed in January and August 2007. The site was divided into three decision units for verification sampling. The first decision unit consisted of the excavation footprint of the pipeline, the second decision unit consisted of the overburden stockpiles, and the third decision unit consisted of the pipeline excavations underlying the haul road (road-crossing area) and the overburden stockpiles used to backfill in the road crossings. Statistical and judgmental sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

The samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) System project-specific database prior to submission for archival in the Hanford Environmental Information System (HEIS) site-wide database. The results were also included in Appendix D of the RSVP.

The results of verification sampling indicated that residual contaminant concentrations did not

preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The SubSite is Part Of:**Code:** 100-F-26**Names:** 100-F-26; 100-F Water Treatment Facility Underground Pipelines**Code:** 100-F-26:11**Classification:** Accepted**Names:** 100-F-26:11; 1607-F4 Sanitary Sewer Pipelines**Reclassification:** No Action (5/26/2005)**Type:** Process Sewer**Start Date:****Status:** Inactive**End Date:**

Description: The subsite was located approximately 139 meters (456 feet) west of the 105-F Reactor Building. The subsite consisted of a 0.15-meter (6-inch) diameter vitrified clay pipe (VCP) that received effluent from the 115-F Gas Recirculation Building. The VCP originated at the southwest corner of the 115-F Gas Recirculation Building and carried flow west approximately 53.6 meters (178 feet). The pipeline terminated at the inlet to the 1607-F4 septic tank.

Location: The 100-F-26:11 subsite is located approximately 139 meters (456 feet) west of the 105-F Reactor Building.

Waste Type: Soil

Waste Description: The waste was the pipeline interior scale and the soil underneath the pipe.

Closure Info: The Remaining Sites Verification Package for 100-F-26:11, RSVP-2005-003, has documented that the subsite has achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) for a no action reclassification. The RAOs and RAGs were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-I, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD).

Contaminants of concern (COCs) for the underground pipeline waste site included americium-241, strontium-90; cesium-137, cobalt-60, europium-152, europium-154, europium-155, hexavalent chromium, arsenic, barium, cadmium, total chromium, lead, mercury, selenium, silver, pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds.

Confirmatory sampling of the subsite was conducted on November 22, 2004, in accordance with the WCH work instructions. A focused sampling approach was selected using the probable worst-case locations for sampling. Confirmatory samples of the 0.15-m (6-in.) influent VCP were collected via excavation of two test pits, one at either side of the pipeline. Samples were taken of the pipeline interior scale and the soil underneath the pipe. The samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The results were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS) and were included in Appendix A of the RSVP.

Analytical results of pipe scale and underlying soil samples for the subsite were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection,

excluding the soil sample for lead and the pipe scale sample for aroclor-1260.

The results also demonstrated that residual contaminant concentrations support unrestricted future land uses of shallow zone soil (i.e., surface to 4.6 meter [15 feet]) and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls were required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:12

Classification: Accepted

Names: 100-F-26:12; 72-inch Main Process Sewer Pipeline

Reclassification: Interim Closed Out (4/29/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This waste site has been remediated. No anomalies or stained soil were discovered during remediation.

The 100-F-26: 12 underground pipeline subsite consisted of an approximately 308 meters (1,011 ft) long, 1.8 meters (72 in.) diameter, east west-trending reinforced concrete pipe that joined the North Process Sewer Pipelines (100-F-26: 1) and the South Process Pipelines (100-F-26:4) with the 1.8-m (72-in.) reactor cooling water effluent pipeline (100-F-19).

Location: The 100-F-26:12 pipeline ran for 308 meters (1,011 ft) from west to east about 50 meters north of the 184-F Powerhouse.

Waste Type: Not Specified

Waste Description: The waste was the sewer pipe and surrounding soils.

Closure Info: Radiological field measurements and staining discovered during excavation of the 100-F-19 pipeline in August 2001 indicated that contamination was present within the 100-F-26:12 sewer pipe and its surrounding soils. The site was referred for remedial action without requiring additional confirmatory sampling (per WCH-CCN-117910). Remediation of the pipeline subsite was performed from January 11 through October 4, 2007. The subsite was excavated between 4.0 meters (13 ft) and 6.0 meters (20 ft) below grade, resulting in approximately 2,900 bank cubic meters (BCM) (3,800 bank cubic yards [BCY]) of material disposed of at the Environmental Restoration Disposal Facility that including removing of approximately 308 meters (1,011 ft) of pipe. Approximately 23,340 BCM (30,530 BCY) of overburden was stockpiled for use as clean backfill.

The portion of the pipeline that ran beneath the railroad crossing (near the coal conveyor structure) was encased in concrete to support the additional load. The pipeline encased in concrete was removed. The coal conveyor structure was evaluated and found to be absent of hydraulic systems. The large concrete monolith associated with the coal conveyor was abandoned in place.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:13

Classification: Accepted

Names: 100-F-26:13; 108-F Drain Pipelines **Reclassification:** Interim Closed Out (3/3/2008)
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The 100-F-26:13 subsite consisted of one 0.15 meter (6 inch), two 0.2 meter (8 inch), and one 0.31 meter (12 inch) diameter vitrified clay pipe (VCP) segments encased in concrete. The pipelines discharged effluent from the former 108-F Biological Laboratory, which was originally built in 1944 to support treatment of cooling water for use in the 105-F Reactor, to the 188-D Ash Disposal Area (126-F-1). In 1949, the 108-F Building was completely remodeled for use in life-science studies to test the effects of radiation and contamination on plant and animal life. In 1999, the 108-F Building was decontaminated, demolished, and removed; however, the 100-F-26:13 pipeline segments were left in place.

This subsite was a network of process sewer pipelines that received effluent from the 108-F Biological Laboratory and then discharged it to the 188-F Ash Disposal Area (126-F-1 waste site). This subsite included one 0.15 m (6 in), two 0.2 m (8 in), and one 0.31 m (12 in) diameter vitrified clay pipe (VCP) segments encased in concrete. Routing of the 100-F-26:13 pipelines is as follows. One 0.2 m (8 in) VCP starts at the sulfuric acid storage tanks previously located on the west side of the 108-F Building and flows south to the confluence with the 0.31 m (12 in) VCP. The second 0.2 m (8 in) VCP starts at the east side of the 108-F Building and flows south to the confluence with the 0.31-m (12-in.) VCP. There is a 0.15 m (6 in) VCP that connects and flows into the 0.2 m (8 in) VCP before it connects into the 0.31 m (12 in) VCP. The 0.31 m (12 in) VCP that received flow from both 0.2 m (8 in) VCPs flows southeast and discharges into the 188-F Ash Disposal Pit.

Location: These pipelines are in the south-central part of the 100-F Area, running from the 108-F Building to the 126-F-1 Ash Disposal Pit.

Waste Type: Not Specified

Waste Description: The waste was potentially contaminated pipelines.

Closure Info: The Remaining Sites Verification Package for 100-F-26:13, RSVP-2005-011 has documented that the subsite has achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD).

Remediation of this subsite was performed in two stages because a portion of the pipelines were located under the main access road to the 100-F Area. The first stage was performed between February 5 and March 27, 2007, and consisted of excavating and removing all pipeline segments except the portion underlying the main access road. The second stage included excavation and removal of the pipeline segment under the access road and was performed on August 24, 2007.

Approximately 580 bank cubic meters (BCM) [(760 bank cubic yards (BCY))] of pipeline material and suspect contaminated adjacent and underlying soils were removed and stockpiled in the staged waste area for later disposal to ERDF. The staged waste area footprint will be addressed with the 100-F-26:9 subsite. Excavation depths at the subsite ranged from 4.3 meters to 5.2 meters (14 feet to 17 feet) below ground surface.

The contaminants of potential concern (COPCs) were identified in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, rev. 4). Contaminants of potential concern

(COPCs) are identified in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL -96-22, Revision 4). The COPCs include cobalt-60, cesium-137, europium-152, europium -154, strontium-90, silver, barium, cadmium, chromium (total), mercury, lead, selenium, arsenic, and hexavalent chromium.

Historical information and process knowledge for the 108-F Biology Laboratory was used to further develop the COPCs for the 100-F-26:13 underground pipeline subsite. As a result, uranium-234, uranium-235, uranium-238, americium-241, plutonium-238, plutonium 239/240, and polychlorinated biphenyls (PCBs) were included as COPCs. Sulfuric acid was used at the 108-F facilities; however, samples will not require anion analysis because the groundwater protection value for sulfate is large (25,000 mg/kg) compared to other potential contaminants.

Verification sampling was performed in July and August 2007, the analytical results indicated that the residual concentrations of COCs/COPCs at this site have met the cleanup objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification to Interim Closed Out. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and are presented in Appendix B of the RSVP.

The results of verification sampling illustrate that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Excavation depths include both shallow-zone and deep-zone components. However, the excavation area was considered as one decision unit and was interim closed out using the more restrictive shallow-zone criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:14

Classification: Accepted

Names: 100-F-26:14; 116-F-5 Influent Pipelines

Reclassification: Interim Closed Out (2/29/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite consisted of underground pipelines located southwest of the 105-F Building (a 10.2-centimeter (4- inch) influent pipeline that ran from the 105-F Reactor Building to the 116-F-5 ball washer crib, two process pipelines (30.48- centimeter [12- inch] and 15.24- centimeter [6- inch]) that connected to a previously remediated process pipeline (100-F-19:2); and a short 15.24- centimeter [6- inch] cast-iron pipe). These pipelines were associated with the 116-F-5 Ball Washer Crib and remnants of process pipelines on the west side of the 105-F Building.

The 30.48-cm (12 in) process line ran from the 115-F seal pit to the 60.96 cm (24 in) process sewer south of the fuel storage basin (W-73174). The 15.24 cm (6 in) process line received effluent from the tunnel eductor discharge (H-1-70185) and joined with the process line from the 115-F seal pit prior to entering the process sewer. The process sewer was remediated between August 2001 and December 2002 (CVP-2001-00003). The remedial design drawings also show a short 15.24 cm (6 in) cast-iron pipeline off the end of the ball washer influent line near the 105-F Building (0100F-DD-C0032). A possible reference to this pipeline is made on drawing M-1904 F sheet 5. The pipe is referenced by the notation "6 [inch] V.P. BELOW 12

[inch] V.P." with an arrow pointing to the 30.48 cm (12 in.) process line from the 115-F seal pit. No additional historical information is available regarding this pipe.

Location: The 100 F 26:14 pipeline subsite consists of underground pipelines associated with the 116-F-5 Ball Washer Crib and remnants of process pipelines on the west side of the 105-F Buildings. The 100-F-26:14 subsite is an influent pipeline that runs from 118-F-8 (105-F) Reactor Building to 116-F-5 trench.

Waste Type: Not Specified

Waste Description: The waste was contaminated pipelines and associated soils.

Closure Info: The Remaining Sites Verification Package (RSVP) 2007-029 for 100-F-26:14 documents that the subsite has achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.(ROD).

Remediation of this subsite was performed from February 1 through April 24, 2007. The excavation cut through the middle of the 118-F-8:4 which had been remediated. The total depth of the 118-F-8:4 (8 meters [26 feet] below ground surface) was below the deepest (6 meters [20 feet]) segment of the 100-F-26:14 pipeline.

Approximately 700 BCM (916 BCY) of contaminated soil was disposed at the Environmental Restoration Disposal Facility and 900 BCM (1,177 BCY) of overburden and layback soil were stockpiled for use as clean backfill.

The COCs/COPCs for verification sampling were strontium-90, cesium-137, cobalt-60, europium-152, europium-154, nickel-63, hexavalent chromium, arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver.

Verification sampling was performed on August 8, 9, and 21, 2007, to determine if the RAGs had been met. The laboratory-reported data results for all constituents are stored in the WCH Environmental Remediation System (ENRE) project-specific database prior to submission for archival in the Hanford Environmental Information System (HEIS) site-wide database and were summarized in Appendix C of the RSVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep-zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:15

Classification: Accepted

Names: 100-F-26:15; Miscellaneous Pipelines Associated with 1608-F Sump

Reclassification: Interim Closed Out (3/18/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite includes the miscellaneous radioactive pipelines draining into the 1608-F sump and pumphouse.

The Remaining Sites Verification Package (RSVP) 2007-031, has documented that the subsite conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). The RSVP supports a reclassification of this site to interim closed out.

Location: The 100-F-26:15 pipelines in the vicinity of the southeast corner of the 105-F Reactor.

Waste Type: Not Specified

Waste Description: The waste was radioactively contaminated piping and associated soils.

Closure Info: The 100-F-26:15 subsite was remediated from January 29 through January 31, 2007. Two distinct areas were excavated resulting in disposal of approximately 82 cubic meters (107 cubic yards) of contaminated materials to the Environmental Restoration Disposal Facility. Only 3 of the 16 pipeline segments (numbers 2, 4, and 15 in Table 1 of the RSVP [CCN 138712]) were found during the excavation. Excavations for the remaining pipeline segments were performed to native soil to verify their previous removal. Eight of the pipeline segments (numbers 7, 8, 9, 10, 11, 12, 14 and 16) were associated with the remediation of the 100-F-19:2, reactor cooling water effluent pipelines, in 2002 (CVP-2001-00003, CCN 133565). The five remaining pipeline segments (numbers 1, 3, 5, 6, and 13) were not discovered during either of the pipeline removal activities in 2002 and 2007. These were most likely removed during previous D activities or historical pipeline replacement projects.

For the five pipeline segments that were not found during either remediation (numbers 1, 3, 5, 6, and 13), excavations at the locations shown on historical drawings were performed until native soil was encountered to verify their previous removal. Additional verification was available for pipeline segments 1 and 6 as these were associated with the 1608-F building. The below grade portion of the 1608-F building is present in the subsurface and was used as a guide to verify these pipeline segments were no longer present. Excavation was performed next to the 1608-F building for pipeline segments 1 and 6 and continued until the bottom of the structure was reached, thereby verifying the pipeline segments were no longer present.

The subsite contaminants of potential concern (COPCs) are described in the verification work instruction (0100F-WI-G0059). COPCs for verification sampling included ICP metals, hexavalent chromium, and mercury. Gross alpha, gross beta, and gamma energy analysis (GEA) were used to detect radioactivity with isotope specific analyses performed for those samples with results greater than background. Americium-241, cesium-137, cobalt-60, europium-152, europium-154, and europium 155 were analyzed by gamma energy analysis (GEA).

Two samples (J14D62 and J14D63) were collected on January 30, 2007, in the primary excavation adjacent to the 105-F Building foundation to allow for an early backfill. The early backfill was necessary to secure the foundation from damage due to undermining. Note that in Table 2 of the RSVP (CCN 138712) these two samples were inadvertently omitted from the summary list of the verification samples, but they (and their results) are listed in Appendix A Attachment 1 "100-F-26:15 Verification Sampling Results."

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental

Information System (HEIS) and were presented in Appendix A of the RSVP.

The sampling results illustrated that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

Code: 100-F-26:16

Classification: Accepted

Names: 100-F-26:16; Reactor Cooling Water Pipelines

Reclassification: No Action (1/11/2005)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-26:16 subsite consisted of pipelines inside the Cooling Water Pipe Tunnels that ran between the 190-F Pumphouse and the 105-F Reactor.

Location: The process water tunnels were located due west of the 105-F Reactor (between 190-F and 105-F).

Closure Info: Evaluation of this site indicated that the remedial action objectives and goals have been met as established by the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-1U-6, and 200-CW-3 Operable Units, Hanford Site, (Remaining Sites ROD). The selected action for the 100-F-26:16 site involved using historical information and analogous confirmatory sampling data to support proposal of no action.

Originally, the process water piping was contained inside concrete tunnels. As part of decommissioning activities during 1987, the process water tunnels were filled to grade with clean soil (WHC-EP-0478). This document indicates that the pipelines inside the tunnels were removed and salvaged at the time of decommissioning of the water tunnels.

There was no history of radiological contamination associated with the 100-F Cooling Water Tunnels and no known process incidents at 105-F Reactor that would have introduced contamination from the reactor into the tunnels. Historical sampling of concrete and soil underlying the 105-C Cooling Water Tunnels (BHI-01050) and pipe scale sampling inside the cooling water pipelines at the 100-B Reactor valve pit indicate that residual contamination associated with the 105-B and 105-C Cooling Water Tunnels meets the cleanup criteria.

Given that (1) the 105 F Reactor pipelines are believed to be removed, (2) the tunnels have been back-filled, and (3) the 105-B and 105-C Reactor Cooling Water Tunnels have been determined to meet the cleanup criteria and through evaluation the 100-F-26:16 Reactor Cooling Water Pipelines are analogous to the 105-B and 105-C Reactor Cooling Water Tunnels, the 100-F-26:16 Reactor Cooling Water Tunnels meet the cleanup criteria and the residual contaminant levels are protective of human health, groundwater and the Columbia River.

The SubSite is Part Of:

Code: 100-F-26

Names: 100-F-26; 100-F Water Treatment Facility Underground Pipelines

surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. The basis for reclassification was described in detail in the Cleanup Verification Package 2001-00003.

The cleanup verification package does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

Code: 100-F-31	Classification: Accepted
Names: 100-F-31; 144-F Sanitary Sewer System	Reclassification: Interim Closed Out (8/24/2006)
Type: Septic Tank	Start Date:
Status: Inactive	End Date: 1/1/1977

Description: The site has been remediated and interim closed. The site consisted of a septic tank and drain field. The area has been restored to match the surrounding terrain.

Location: The site was located in the 100-F Area within the former Pacific Northwest Laboratory's Experimental Animal Farm site. The 144-F Building was located between the 141-C Animal Barn, Large Animal Barn & Biology Laboratory, Hog Barn Building and the 116-F-14 (107-F Retention Basin) site. The septic system was located directly south of 132-F-2 (144-F Building) and approximately 20 meters (65 feet) west of the 107-F Retention Basin Fence.

Process Description: The septic system was believed to have received both animal and human septic waste from the 132-F-2 (144-F Particle Exposure Laboratory). The 100-F Area included laboratories that performed radiological studies on various species of animals. These laboratories housed animals (mainly dogs) exposed to particulate materials. The 144-F Building was a one-story concrete block building with an office and six laboratories, and included indoor and outdoor animal runs. The 100-F experimental farm was abandoned when Pacific Northwest Laboratory moved its biological studies to the 300 Area and it was believed that the 144-F facility was decommissioned and demolished in 1977, leaving the septic system in place.

Related Sites/Structures: The site received effluent from the 132-F-2 (144-F Particle Exposure Laboratory Building). Pipeline sites in the 100-F Area include the Process Effluent Pipelines in site 100-F-19, the Water Treatment Pipelines in site 100-F-26, the river effluent lines are site 100-F-39, the clean water pipelines were 100-F-41, the experimental animal farm pipelines in site 100-F-29 and miscellaneous pipelines in 100-F-44.

Waste Type: Sanitary Sewage

Waste Description: It is unclear from the drawings H-1-14122, Grading Plan Facilities for Radioactive Inhalation Studies and H-1-14123, Plumbing & Details-Facilities for Radioactive Inhalation Studies, whether the site received animal waste as well as human sanitary waste. Since the site serviced the 144-F Building, there is the potential to have received hazardous contaminants.

Closure Info: The Remaining Sites Verification Package, RSVP- 2006-033, has documented that the site conditions have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

The contaminants of potential concern (COPCs) for the septic system were identified based on historical data, process knowledge, geophysical survey results, and site visit information with focused sampling of residual septic system contents. The COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included cobalt-60, cesium-137, europium

152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-234, uranium 235, hexavalent chromium, mercury, lead, and polycyclic aromatic hydrocarbons (PAHs). As a result of further evaluation of this site, a decision was made to add arsenic, barium, cadmium, total chromium, selenium, silver, and polychlorinated biphenyls (PCBs) as COPCs.

Remediation of the 100-F-31 waste site consisted of the removal of the septic tank, drain field, associated piping, and overburden material. Approximately 350 bank m³ (460 bank yds³) of material was excavated and disposed at the Environmental Restoration Disposal Facility (ERDF). The site was excavated to a maximum depth of 3.0 m (9.8 ft) below ground surface.

Following excavation of the 100-F-31 waste site, verification sampling was performed on February 6, 2006 in accordance with the Verification Work Instruction for the 100-F-31 Septic System, 144-F Sanitary Sewer System. Analytical results from the verification soil samples indicated that the northern side of the excavation contained residual contamination of aroclor-1248. This residual PCB was detected at a concentration of 7.3 mg/kg, which exceeds the direct exposure RAG (0.5 mg/kg). Additional remediation was performed in April 2006 and the PCB-contaminated soil was removed from the north sidewall of the 100-F-31 excavation footprint. A second set of verification samples were collected on May 17, 2006. These samples were analyzed for PCBs to verify that the subsequent remediation efforts had successfully removed the contamination.

The verification sample results were stored in the Environmental Restoration (ENRE) project-specific database prior to archiving in the Hanford Environmental Information System (HEIS) and are included in Appendix A of the RSVP.

Per the RSVP and contact with field representatives, remediation of the waste site consisted of the removal of the septic system, drain field, associated piping, and overburden material. The system was much smaller than historical drawings illustrated. A total of approximately 350 bank cubic meters (460 bank cubic yards) of material was excavated and disposed at the Environmental Restoration Disposal Facility.

The results of verification sampling showed that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils [i.e., surface to 4.6 meters (15 feet) deep]. The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 100-F-33	Classification: Accepted
Names: 100-F-33; 146-F Aquatic Biology Fish Ponds	Reclassification: Interim Closed Out (8/25/2006)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed. The waste site, also referred to as the 146-F Aquatic Biology Fishponds and the fish laboratory, was designed to conduct tests on fish. The ponds were removed in 1975, no visual evidence remains of their original location. The fish ponds were constructed of unlined reinforced concrete. Originally, there were 6 divided small ponds, 1 circular pond and 1 rectangular pond. The site is an area where unplanned releases likely occurred from the fish ponds.	
Location: The site was located approximately 610 meters (2,000 feet) northwest of the 105-F Reactor Building. Well 199-F5-6 was located just west of the site. The fish ponds were located west of 146-F Aquatic Biology Laboratory, which has been demolished.	

Release Description:	There was no documented record of an unplanned release from this site. However, due to leakage from the ponds and associated piping and/or splashing from within the ponds, the release of contaminated water to the surrounding environment was likely.
Process Description:	The studies involved exposing fish to varying concentrations of reactor cooling water effluent to assess possible effects of effluent discharge on aquatic life in the Columbia River. In addition to hatchery troughs, there were six rearing ponds located next to the laboratory. Effluent water was continuously circulated through the troughs at a rate of about 0.2 to 0.3 liters per second (3 to 5 gallons per minute) and was discharged to the Pacific Northwest Laboratory Outfall (116-F-16) via the 147-F Pump House. Testing began in 1945 and was conducted using various mixtures of river and effluent water to determine effects on fish. The effluent water contained a variety of chemicals that included process cooling water, sludge from the water purification area, condenser water, refrigeration cooling water, floor drainage containing radioactive substances and substances that inhibited corrosion, such as materials used for purging the tubes in the pile. From 1947 through 1950, salmon eggs, rainbow trout, carp, and crayfish were tested under several conditions. Testing included unrefrigerated effluent water, effluent treated with five parts of river water from the 107-F Retention Basin, charcoal filtered and unfiltered river water with 2 parts per million (ppm) dichromate added, pre-pile process water, 5 ppm sodium silicate, and copper sulfate. The testing was designed to determine the accumulation of activity in bone, liver, skin, and the gastrointestinal tract. Some of the feed supplied to the fish was algae and snails. Document HW-20266-RD stated that some of the feed was grown in effluent from the 107-F Retention Basin. The fish ponds were constructed of unlined reinforced concrete. The configuration of the fish ponds were 6 small rectangular ponds, in a 2 by 3 matrix, one large circular pond located due south of the smaller ponds. Two larger rectangular ponds may have been located between the 6 smaller ponds and the circular pond. There is a note on Drawing H-1-2898 Sheet M-1, Mechanical Plot Plan, Aquatic Biology Laboratory that says that these larger rectangular ponds were not built during 1951-1952 construction. These ponds may never have been constructed. Later drawings show only the six smaller rectangular ponds and the one large circular pond. The six pairs of small rearing ponds were numbered 1 through 12. The structures had outer dimensions of 3.35 meters (11 feet) by 2.90 meters (9.5 feet). Each had a center dividing wall separating it into two halves. If the outer walls and dividing walls were 15 centimeters (6 inches) thick, the dimensions of each half would have been 1.2 meters (4 feet) by 3.0 meters (10 feet) by 0.9 meters (3 feet) which is the size of a liquid waste disposal facility documented in both HW-43121 and HW-33305. Pond 13 was the largest, measuring 16 meters by 2 meters (51 feet by 6 feet). It also contained a circular pond that measured 9 meters (30 feet) in diameter. Drawing H-1-2898, Architectural Plot Plan, Aquatic Biology Laboratory, showed the addition of 3 additional ponds. Hanford Drawing, H-1-2898, Sheet 17, Rectangular Ponds - Aquatic Biology Laboratory shows a pair of the pond structures that were 5.8 meters (19 feet) by 3.5 meters (11.5 feet). Each of the ponds were split lengthwise down the middle by a divider. The divider was removable and did not extend the full length of the pond. The ponds sloped towards the end of the structure containing the drains (2 drains per structure). The depth of the ponds was 0.91 meters (3 feet) sloping to 1 meter (3.3 feet). There was a note on Drawing H-1-2898 Sheet M-1, Mechanical Plot Plan, Aquatic Biology Laboratory that stated these larger rectangular ponds were not built during 1951-1952 construction. These ponds may never have been constructed. Later drawings show only the six smaller rectangular ponds and the one large circular pond. Hanford Drawing H-1-2898, Sheet 18, Circular Pond - Aquatic Biology Laboratory shows the large circular pond to be 9.1 meters (30 feet) in diameter and about 0.87 meters (34 inches) high. The pond slopes to the middle toward a center drain.
Related Sites/ Structures:	The site was related to the 146-F Aquatic Biology Fish Ponds laboratory.
Waste Type:	Water

Waste Description:	contaminants as the radioactive process effluent. A pipeline containing radioactive process effluent came from the reactor to this site. The waste was the pipelines and contaminated soil.
	Contaminants of potential concern were Co-60, Ce-137, Eur-152, Eu-154, Eu-155, Pu-238, Pu-239/240, Sr-90, U-234, U-235, Cr6, Hg, Pb, and polycyclic aromatic hydrocarbons (PAHs).
Closure Info:	The Remaining Sites Verification Package, (RSVP-2006-021), for the 100-F-33 site, documents that the waste site has met the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).
	Contaminants of concern were Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Pu-238, Pu-239/240, Sr-90, U-234, U-235, PAH, mercury, lead, hexavalent chromium,
	Based on field observations during confirmatory sampling and the results of laboratory analysis of samples collected from trench 1 and trench 2, it was decided that the northern portion of the site required remediation. However, the confirmatory sample results for the southern portion of the site, collected in the area of the circular fish pond (test pit 3), did not indicate that residual contaminants were present exceeding cleanup criteria, and, therefore, it was decided that this portion of the site did not require remedial action. Site personnel noted that 10 m (33 ft) of the process sewer leading to the circular pond in the south half of the site appeared to be outside of the excavation. The drain at the head end of this sewer was sampled (J01TF8) as part of 100-F-33 test pit 3 and did not require remedial action. It is assumed that this segment was closed in place using the same information.
	Remedial action of the northern portion of the site was initiated on August 5, 2005, and continued through August 8, 2005, with excavation of 2,024 m ³ (2,231 U.S. t) of material including concrete debris, piping, and soil. Excavated soil and debris were staged at the site until disposal of the materials to the Environmental Restoration Disposal Facility (ERDF) occurred from September 19 to September 21, 2005. Radiological surveys were performed over the excavation and staging pile areas using a mobile sodium iodide detector.
	Verification sampling was performed on January 24, 2006 to evaluate if the remedial action objectives had been reached. Based on statistical evaluation of the resulting data, the residual contaminant concentrations met the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The laboratory-reported data results for all constituents were stored in the WCH ENRE project-specific database prior to archiving in HEIS and were presented in Appendix A of the RSVP.
	The results of verification sampling demonstrate that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 100-F-34	Classification: Accepted
Names: 100-F-34; Biology Facility French Drain	Reclassification: Interim Closed Out (5/22/2002)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and closed out. The french drain was removed during the 100-F	

Area cooling water effluent pipeline remediation activity in 2002 (100-F-19:1).

Location: The drain was located due south of the demolished 1705-F Experimental Gardens. The drain location is noted on Hanford Drawing H-1-13850. There is a label titled "Greenhouse and Slab (Removed) June 6, 1975" and behind and between the "o" and the "v" of "Removed" is a small circle.

Process Description: It was not known what purpose this site served. The pipeline that connected the french drain to a facility has not been located on any of the numerous drawings that have been researched for this area.

Related Sites/ Structures: The site is believed to be associated with one of the Biology Facilities that were part of the Experimental Animal Farm.

Closure Info: 100-F-19:1, 100-F-19:3, 100-F-34 and 116-F-12 were addressed as a group. The information below documents information for the group of sites.

The 100-F-19:1 North Pipelines, 100-F-19:3 West Pipelines, 100-F-34 Biology Facility French Drain, and the 116-F-12 French Drain were remediated as a group in CVP-2001-00002. These sites meet the cleanup standards specified in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

The site remedial action began on August 7, 2001. Excavation of the site involved removing overburden materials, pipelines, french drain structures, and contaminated soil. Cleanup verification sampling began on September 7, 2001, and was finished on September 25, 2001. The results showed that the materials from the 100-F-19:3 subsite containing COCs at concentrations exceeding RAGs have been excavated and disposed of.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. All cleanup verification samples for the 100-F-19:3, 100-F-34 and 116-F-12 sites are listed under 100-F-19:1.

Code: 100-F-36	Classification: Accepted
Names: 100-F-36; 108-F Biological Laboratory; 108-F Chemical Pump House	Reclassification: No Action (5/24/2007)
Type: Laboratory	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1973

Description: The site has been remediated and reclassified to No Action. The site consisted of a building that was demolished in August of 1999. Most of the building debris and foundations were removed. All exposed piping was cut at the edge of the excavation; the piping trench, sump, and french drain 100-F-15 were removed (the pipe remains at the site); all disturbed areas were graded smooth, and the facility footprint soils were fixed in place with soil cement.

Location: The site was located approximately 100 meters (330 feet) east of the 105-F Reactor Building.

Process Description: The 108-F building was constructed in 1944 as part of the original Hanford site construction. It was originally a chemical makeup facility that supported the 105-F reactor. In 1949, the 108-F building was completely remodeled for use in life-science studies for the effects of radiation and contamination on plant and animal life. The original 108-F building was a four-story steel frame, concrete block structure with reinforced concrete foundation, and a total floor space of about 1,858 square meters (20,000 square feet). The roof was constructed of concrete tile with a built-up tar and gravel surface. In 1949, and again in 1962, the 108-F building was

remodeled, and the floor space increased by the addition of a 1,022 square meter (11,000 square foot) annex. This addition was a three-story concrete block structure adjoining the older building. The interior of the building contained 39 offices, 47 laboratories, and a heavily shielded cobalt-60 source room, 18 rooms for handling small animals, a large conference room, an administrative section, a library, lunch and locker rooms. Since radioactive materials were used in the work performed within the building, the laboratories and storage rooms were maintained in a controlled status until 1973 when the laboratory activities were phased out and transferred to 300 Area facilities. From 1983 through 1984, the first floor of the 108-F Building was used for office space.

Related Sites/ Structures: The initial intended use of the 108-F Building was to provide chemical treatment of the 105-F Reactor cooling water. Site 116-F-15 was a sump with an associated trench in the middle of the building. During excavations and sampling in Winter 2002, the 6 inch (15 centimeter) cast iron pipe at this location had radiation readings of 3000 disintegrations per minute (dpm) alpha and 250,000 dpm beta-gamma. The excavation was closed up without removing any material. French drains on the perimeter of the building included 100-F-4, 100-F-11, 100-F-15, and 100-F-16.

Waste Type: Equipment

Waste Description: The main drain trench and sump were posted as a radiological contamination area. Potential contaminants of concern for this facility were plutonium-238, strontium-90, cobalt-60, and cesium-137.

Waste Type: Equipment

Waste Description: On the first floor there are exposed sheets of lead, approximately 0.64 centimeters (0.25 inches) thick under the wallboard. All paint within the facility is suspected to contain lead.

Waste Type: Oil

Waste Description: Oil in the elevator motor, compressor motors, water coolant system and hoist equipment was suspected to contain polychlorinated biphenyl (PCB) and Resource Conservation and Recovery Act of 1976 (RCRA) metals.

Waste Type: Soil

Waste Description: Friable asbestos insulation, asbestos cement, pipe wrapping and suspected asbestos-containing floor tiles were in the building before demolition.

The 108-F closeout report reported contaminants of concern as mercury, PCBs, lead, asbestos, sodium dichromate, and miscellaneous low radiological contamination.

Closure Info: 100-F-36 and 116-F-15 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package for 100-F-36 and 116-F-15 (RSVP-2007-002) has documented the reclassification of the co-located sites. The 100-F-36, 108-F Biological Laboratory waste site has met the objectives for No Action and the 116-F-15, 108-F Radiation Crib waste site has met the objectives for Interim Closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Remediation of the 116-F-15 waste site was performed on September 26, 2005, and consisted of the removal of approximately 86 metric tons (95 US tons) of material, including concrete debris, piping, and soil. The material was disposed at the Environmental Restoration Disposal Facility. The soil was excavated and field surveyed to a depth of approximately 2.6 meters (8.5 feet).

Following excavation, verification sampling was performed. Contaminants of potential concern (COPCs) were combined because the sites were co-located within the boundary of the 100-F-36 waste site. Each confirmatory and verification sample was analyzed for all constituents. The combined list of COPCs identified in the RDR/RAWP included the following: cobalt-60, cesium-137, europium- 152, europium- 154, europium- 155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, inductively coupled plasma metals, mercury, hexavalent chromium, polychlorinated biphenyls, and asbestos.

After the remediation, verification sampling of the waste site was performed on December 12, 2006. All sample data results were stored in the Environmental Restoration (ENRE) project-specific database prior to being archived in the Hanford Environmental Information System (HEIS) and summarized in appendix B of the RSVP.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for contaminants of potential concern and other constituents. Screening levels were not exceeded for either site constituents, with the exception of boron, mercury, and vanadium.

Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of these constituents does not pose a risk to ecological receptors because concentrations of vanadium and mercury are below site background levels and boron concentrations are consistent with those seen elsewhere at the Hanford Site (no established background value is available for boron). A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

The results of sampling indicated that residual contaminant concentrations did not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep).

The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. Remedial actions were not required for deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The results indicated compliance with the remedial action objectives and goals for the site. The results of the sampling data were used to make reclassification decisions for the site in accordance with the TPA-MP-14 procedure.

The results indicated compliance with the remedial action objectives and goals for these sites. The results of the sampling are used to make reclassification decisions for the 100-F-36 and 116-F-15 sites in accordance with the TPA-MP-14 (DOE-RL 2007) procedure.

Code: 100-F-37	Classification: Accepted
Names: 100-F-37; French Drain Discovered Near Hydrant F-2	Reclassification: No Action (8/11/2004)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site consisted of an abandoned french drain.	
Location: The site was about 235 meters (760 feet) east-northeast of the 100-F Reactor. It was in the northeast corner of the intersection of the F Area perimeter Road and the north-south road that	

ran on the east side of the 1716-F, 1713-F, 1717-F, and 1707-F facilities.

Waste Type: Soil

Waste Description: The analytical results showed a high level of lead at 214 ppm.

Closure Info: Sampling of the discolored stained soil associated with the french drain was performed on November 3, 2000 to support disposal of the concrete pipe that was removed during excavation of the electrical conduit trench. The sample was submitted for inductively coupled plasma metals (ICP metals), mercury, and semi-volatile organic analysis (SVOA). Radiological surveys during excavation and sampling did not identify any field detectable radiological activity and since the site was not associated with historical radiological processes, the sample was not analyzed for radionuclides.

The sample results demonstrated that the site had achieved the remedial action objectives and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL-96-17, Rev. 5, Draft B) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (commonly called the Remaining Sites Record of Decision) (EPA, 1999).

These results demonstrated that the associated residual soil concentrations support future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of vadose zone soil and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site is not a deep zone site (i.e., below 4.6 meters [15 feet]); therefore, deep zone institutional controls are not required.

Code: 100-F-38	Classification: Accepted
Names: 100-F-38; Yellow Stained Soil Near Hydrant F-2	Reclassification: Interim Closed Out (3/13/2006)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The waste site consisted of yellow soil discovered during the excavation of a trench for electrical conduit in November 2000. The trench ran diagonally through the parking lot from the subcontractor trailer to Hydrant F-2.	
Location: The site was located approximately 235 meters (760 feet) east-northeast of the 100-F Reactor. It was in the northeast corner of the intersection of the F Area perimeter road and the north-south road that ran on the east side of the 1716-F, 1713-F, 1717-F, and 1707-F facilities.	
Related Sites/ Structures: A small unidentified structure north of this site can be seen in aerial photos shown in the 100-F Area Technical Baseline Report. The yellow stained soil was found immediately north of Hydrant F-2, and south of the unearthed rust coated rocks and french drain (100-F-37), discovered in the same excavation. Their relationship, however, was not known.	
Waste Type: Soil	
Waste Description: The stained soil showed high levels of chromium and lead. No radioactivity was detected with field instruments.	
Closure Info: The site has been evaluated and remediated in accordance with the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (commonly called the Remaining Sites Record of Decision [ROD]) (EPA 1999) and the	

Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR).

Sampling of the yellow soil at the site was performed during November 2000. A focused sampling approach was used to collect a sample of the yellow soil when it was first encountered while trenching at that location for the placement of underground utilities. At the time of discovery, the yellow soils were assumed to be associated with the disposal or spilling of unused paint. Therefore, inductively coupled plasma (ICP) metals were identified as the potential contaminants associated with the yellow soil. Although the excavation of the utility trench was not performed within a radiologically controlled area, a radiological control technician was directed to perform a field survey to verify that radiological contamination was not present. Radiological contamination was not detected during this survey.

The contaminants of concern (COCs) included arsenic, barium, beryllium, boron, cadmium, total chromium, Chromium VI, cobalt, copper, lead, manganese, molybdenum, nickel, vanadium, zinc, and Aroclor-1260. The laboratory analytical results for the single soil sample indicated that concentrations of barium, lead, and chromium exceed remedial action goals (RAGs). Remedial action occurred in September 15, 2005. Verification sampling occurred in November 21, 2005.

Barium, lead, and aroclor-1260 were quantified at levels exceeding applicable RAGs for the protection of groundwater and/or the Columbia River. However, results of the 100 Area Analogous Sites RESRAD Calculations indicate that none of these contaminants will reach groundwater (and therefore the Columbia River) within 1,000 years. Residual concentrations of all other COCs/COPCs were below applicable RAGs. The laboratory-reported analytical results for all constituents have been stored in the WCH Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System. The depth of the excavation was approximately 0.9 meters (3 feet), and there were no stockpile areas associated with this site.

Code:	100-F-39	Classification:	Accepted
Names:	100-F-39; 100F River Effluent Pipelines; 100F River Lines	Reclassification:	None
Type:	Radioactive Process Sewer	Start Date:	
Status:	Inactive	End Date:	
Description:	This site consists of the river effluent pipelines (river lines) that extend from 1904-F outfall (116-F-8) in the 100F area into the main channel of the Columbia River.		
Location:	The river lines are located in the Columbia River, adjacent to the 100F area. The lines extend north into the main channel of the river from the 1904-F outfall (116-F-8). The river effluent pipelines extend from, and are perpendicular to, the discharge (river side) face of the 116-F-8 outfall structure for 91 meters (300 feet) into the main channel of the river.		
Release Description:	No recorded releases were found.		
Process Description:	Reactor cooling water was discharged from the 105-F Building through 152 centimeter (60 inch) diameter effluent lines to temporary storage in 116-F-14 (the 107-F Retention Basin), before being pumped to the river via 116-F-8 and two associated 107 centimeter (42 inch) pipelines (100-F-39). In the event the lines became plugged or had to be removed from service during operation, the effluent overflowed the outfall and entered the river via an attached spillway (100-F-42). The two river lines were constructed of 107-centimeter (42-inch) diameter reinforced concrete/steel pipes with 1.3-centimeter (0.5-inch) thick walls. The two parallel lines were originally 91 meters (300 feet) long). During a survey in 1994, the pipes were found to extend about 24 meters (80 feet) offshore, protruding 1.2 to 2.4 meters (4 to 8 feet) above the		

riverbed. No buried or exposed pipelines could be found further offshore using geophysical instruments. The pipelines may have been obscured by large pieces of debris or rip rap. In 1946, damaged sections of pipe were removed from the river and buried in the riverbank. The broken pipe sections were buried in the riverbank just upstream of the outfall and marked with stakes.

Related Sites/ Structures: The site is associated with the 116-F-8 outfall, the process effluent lines (100-F-19), the water treatment facility pipelines (100-F-26), the 107-F Retention Basin (116-F-14), the animal barn (141-C), the 100F Experimental Animal Farm Process Sewer Pipelines (100-F-29), the aquatic biology fish ponds (100-F-33), the PNL outfall (116-F-16), the PNL spillway (100-F-43), and the 100-F-42 spillway. Pipeline sites in the 100-F Area include the Process Effluent Pipelines in site 100-F-19, the Water Treatment Pipelines in site 100-F-26, the river effluent lines are site 100-F-39, the clean water pipelines were 100-F-41, the experimental animal farm pipelines in site 100-F-29 and miscellaneous pipelines in 100-F-44.

Waste Type: Process Effluent

Waste Description: The waste includes the pipelines and the contaminated scale and sediment which may be contained within them.

Contaminants of concern/potential concern are based on those for 116-F-8 Outfall Structure. Contaminants of concern include cobalt-60, europium-152, europium-154, europium-155, and hexavalent chromium.

Contaminants of potential concern include carbon-14, cesium-137, nickel-63, and strontium-90.

Code: 100-F-42	Classification: Accepted
Names: 100-F-42; 1904-F Spillway; 100-F-39:1 Flume	Reclassification: Interim Closed Out (9/26/2006)
Type: Outfall	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed. The site consisted of a reinforced concrete spillway (also referred to as a flume). The spillway extended from the 116-F-8 Outfall to the Columbia River shoreline and into the river.	
Location: The spillway was located approximately 214 meters (700 feet) north of the 116-F-14 Retention Basin. The upper end of the spillway began at the west face of the outfall and terminated in the river.	
Process Description: The spillway was an alternate discharge point for the 116-F-8 Outfall Structure. It was to be used only if the 100-F-39 river effluent pipelines were blocked, damaged, or undergoing maintenance. There was no corroborated physical or historical evidence that the spillway was ever used. The flume was constructed of reinforced concrete and was 4 by 0.6 meters (14 by 2 feet) deep and about 40 meters (130 feet) long. It was an open concrete structure with a flat bottom and two sidewalls. An engineered erosion barrier composed of heavy riprap was constructed at the discharge end of the concrete structure. The spillway was designed to prevent excessive backwater at the 107-F Retention Basin during high water or in the event of a blockage of the outfall lines.	

Related Sites/ Structures: The site was associated with the 100-F-39, 100-F River Effluent Pipelines, the 116-F-8 Outfall Structure, the 116-F-16 (PNL) Outfall, and 100-F-43 (PNL) Spillway.

Waste Type: Construction Debris

Waste Description: If ever put into service, the COPCs for the 100-F-42 spillway would be the same as those for

Description:

the 116-F-8 outfall structure. The contaminants of concern include Cobalt-60, Europium-152/154/155, and hexavalent chromium.

Closure Info: 116-F-8 and 100-F-42 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2006-038) documented that the 116-F-8 and 100-F-42 waste sites have met the objectives for interim closure. The remedial action objectives (RAOs) and remedial action goals (RAGs) for these sites were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The 100-F-42 Spillway was administratively separated from the 116-F-8 Outfall for inclusion within the Remaining Sites ROD by agreement among the Tri-Parties. It was subsequently determined that sufficient evidence existed to warrant remedial action during remediation of the 116-F-8 waste site, therefore both waste sites were remediated and evaluated as a single unit.

The waste site Contaminates of Concern (COCs) were based on the list presented in the Remaining Sites ROD, as expanded in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) for the 116-F-8 waste site. The COCs included: cobalt-60, europium-152, europium-154, europium-155, and hexavalent chromium. Cesium 137 was also included as a COC due to analytical detections within verification samples.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site COCs; screening levels were not exceeded. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which included a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decisions for the 116-F-8 and 100-F-42 waste sites.

Remedial action activities at the waste sites were conducted from August 31, 2004, to September 22, 2005. Remediation involved excavation and staging of clean overburden material and removal of the demolished concrete outfall structure, the concrete spillway structure above the Columbia River ordinary high water mark, and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. The residual 100-F-39 effluent pipelines will be sealed with concrete prior to backfill of the remediation footprint. Contaminated materials were disposed at the ERDF.

Final cleanup verification sampling was conducted from February 9 to 26, 2006, following variance analyses. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as required per the SAP. Each verification sample was composed of a composite sample formed by combining soil collected at the required number of randomly selected locations within each sampling area (excluding the quality assurance/quality control samples).

Due to their immediate proximity and historic functional relationship, the 116-F-8 and 100-F-42 waste sites were combined into one unit for the purposes of decision unit stratification.

The cleanup verification sample analytical data were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System. The sampling information was also included in Appendix A of the RSVP.

Approximately 1,325 meters squared (14,260 square feet) of plan area was excavated, including excavation within the deep zone (greater than 4.6 meters [15 feet] below ground surface) up to 8 meters (26 feet) below ground surface. Approximately 4,900 metric tons (5,400 U.S. tons) of material from the sites was removed and disposed at the ERDF.

The results of verification sampling demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also showed that residual contaminant concentrations were protective of groundwater and the Columbia River. The results of deep zone verification sampling also showed that residual deep zone contaminant concentrations met the requirements for unrestricted direct exposure; accordingly, no institutional controls are required for deep zone soils.

Code:	100-F-43	Classification:	Accepted
Names:	100-F-43; 116-F-16 PNL Outfall; Spillway for PNL Outfall; 100-F-39:1	Reclassification:	Interim Closed Out (9/14/2006)
Type:	Outfall	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. The 100-F-43 spillway (also referred to as a "flume") was constructed of reinforced concrete, and extended from the 116-F-16 PNL Outfall to the Columbia River shoreline and into the river. An engineered erosion barrier composed of heavy riprap was constructed at the discharge end of the concrete structure.		
Location:	The site was located approximately 670 meters (2,200 feet) northeast of the 105-F Reactor Building and about 15 meters (50 feet) upstream of the 116-F-8 Outfall. It was connected to the 116-F-16 PNL outfall face at E580952 N148128, and extends into the river to E580975 N148160.		
Process Description:	The 116-F-16 PNL Outfall emptied into the spillway via direct discharge. The spillway was a 4.6-meter (15-foot) wide concrete structure that extended approximately 6.1 meters (20 feet) out from the shoreline and approximately 3.7 meters (12 feet) into the Columbia River. The sides were 46 centimeters (18 inches) high and extended down the length of the structure. The vertical walls of the upper portion had been demolished and covered with soil.		
Related Sites/ Structures:	The site was associated with 100-F-29 (100-F EAF Process Sewer Pipelines), 100-F-19, 100-F Reactor Cooling Water Effluent Underground Pipelines, Contaminated Underground Lines, Effluent Water System, 1904-F Process Sewer (See Subsites), the 116-F-8 (1904-F) Outfall Structure, the 100-F-42 (1904-F) Spillway, and the 116-F-16 PNL Outfall.		
Waste Type:	Animal Waste		
Waste Description:	The unit received animal sewage, 107-F Retention Basin water from fish studies, and low-level contamination resulting from various 100-F EAF projects.		
	If ever put into service, the COPCs for the 100-F-42 spillway would be the same as those for the 116-F-16 outfall structure, and include Plutonium-239/240, Strontium-90, Cesium-137, Lead, and hexavalent chromium.		
Closure Info:	116-F-16 and 100-F-43 were addressed as a group. The information below documents information for the group of sites.		
	The 100-F-43 waste site was administratively separated from the 116-F-16 waste site for future inclusion within the Remaining Sites Record of Decision by agreement among the Tri-Parties. It was subsequently determined that sufficient evidence existed to warrant remedial action of		

both waste sites as a single unit. All samples collected during remediation are listed under 116-F-16

The Remaining Sites Verification Package (RSVP-2006-039) has documented that the 116-F-16 and 100-F-43 waste sites were remediated in accordance with the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). Remedial action objectives (RAOs) and remedial action goals (RAGs) for this site were documented in the Remaining Sites ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action activities at the sites were conducted from August 31, 2004, to September 8, 2005. Remediation involved excavation and staging of clean overburden material and removal of the outfall, the concrete spillway structure above the Columbia River ordinary high water mark, and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. Final cleanup verification sampling was conducted on February 13 and 15, 2006.

The Contaminants of Concern included: cesium-137, plutonium-239/240, strontium-90, hexavalent chromium, and lead.

Approximately 384 meters squared (4,130 square feet) of plan area was excavated, with all remedial activities restricted to the shallow zone (less than 4.6 meters [15 feet] below ground surface). Approximately 2,090 metric tons (2,300 U.S. tons) of contaminated material was removed from the site and disposed at the ERDF. The cleanup verification sample data have been summarized in Appendix A of the RSVP. The data were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System.

No institutional controls are required for this site to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].

Code: 100-F-44	Classification: Accepted
Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)	Reclassification: None
Type: Process Sewer	Start Date:
Status: Inactive	End Date:
Description: The site consists of a compilation of pipelines and pipeline segments not previously addressed in any closure documents. The various pipelines may require remedial action. See the subsite summaries for specific information.	
Location: The underground pipeline segments are located in the F Area and co-located with those described in waste site 100-F-26 (100-F Water Treatment Facility Underground Pipelines, 16 subsites).	
Related Sites/ Structures: Segments of pipelines were identified within the areas of the following buildings: 105-F, 1717-F, 190-F, 1608-F, 141-C, 187-F1 elevated water tower and 189-F. Pipeline sites in the 100-F Area include the Process Effluent Pipelines in site 100-F-19, the Water Treatment Pipelines in site 100-F-26, the river effluent lines are site 100-F-39, the clean water pipelines were 100-F-41, the experimental animal farm pipelines in site 100-F-29 and miscellaneous pipelines in 100-F-44.	

This Site has the Following SubSites:

Code: 100-F-44:1
Names: 100-F-44:1; Discovery Pipeline Near 182-F Reservoir

Code: 100-F-44:2
Names: 100-F-44:2; Discovery Pipeline Near 108-F Building

Code: 100-F-44:3
Names: 100-F-44:3; 1607-F3 Sewer System Pipeline

Code: 100-F-44:4
Names: 100-F-44:4; Discovery Pipeline in Silica Gel Pit

Code: 100-F-44:5
Names: 100-F-44:5; Process Sewer Pipelines

Code: 100-F-44:6
Names: 100-F-44:6; 189-F Refrigeration Pipeline

Code: 100-F-44:7
Names: 100-F-44:7; 1717-F Blowdown Pipeline

Code: 100-F-44:8
Names: 100-F-44:8; 1717-F Fuel Oil Supply and Return Pipelines

Code: 100-F-44:9
Names: 100-F-44:9; 105-F Process Sewer Pipeline

Code: 100-F-44:10
Names: 100-F-44:10; 141-C Sewer Pipelines; 100-F Experimental Animal Farm Sewer Pipelines

Code: 100-F-44:1	Classification: Accepted
Names: 100-F-44:1; Discovery Pipeline Near 182-F Reservoir	Reclassification: No Action (4/26/2007)
Type: Process Sewer	Start Date:
Status: Inactive	End Date:

Description: The 100-F-44:1 pipeline site was discovered during confirmatory sampling at test pit 5 of the 100-F-26: 1 pipelines site. The test pit contained a junction box with two 76 centimeters (30-inches) reinforced concrete pipes and a previously unidentified 20-centimeter (8-inch) carbon steel pipe. The smaller pipe was just west of the 182-F Reservoir and ran north from the junction box an undetermined distance at a depth of (7 feet) below the ground surface. The only building in the vicinity was the former 182-FA Pump Test Stand. Drawing H-1-11253 shows a 20-centimeter (8-inch) pipe between the 182-FA building and the junction box where two 76-centimeter (30-inch) reinforced concrete pipes met.

The Pump Test Stand was built in 1959 to test new designs for impellers and prototype pumps for future use at the 190 Pumphouse. It was located west of the 182-F reservoir. The pumps, instrument panels and suction piping were housed inside an army surplus prefabricated building. Apparently the project was of a short duration, therefore sanitary and steam utilities were not constructed. The only underground piping installed from the pump test stand was between the 182-F reservoir and the process sewer. Water from the 182-F reservoir was recirculated through a suppression tank with constant makeup and bleed to control temperature rise.

Location: The pipeline runs north-south and west of the 182-F reservoir. The junction box was sampled at coordinates N148179 E580343 where the pipeline starts, before continuing north for an

undetermined distance at a depth of 2.1m (7 ft) below ground surface.

Waste Type: Not Specified

Waste Description: The waste is piping, scale/sediment, concrete, and soil (if contaminants are present).

Closure Info: The maximum detected results for all COPCs in pipeline scale/sediment and underlying soil samples were less than background or applicable RAGs and therefore meet the RAOs. Based on these results, no remedial action is required for this segment of pipeline. As documented in the Remaining Site Verification Package for 100-F-26:1 North Process Sewer Collection Pipelines (Attachment to Waste Site Reclassification Form 2005-008), the process sewer that joined the 182-FA discharge pipe at the junction box was sampled as part of confirmatory sampling for the 100-F-26:1 pipelines site.

Evaluation of the confirmatory sample results for the 100-F-26:1 satisfied the remedial action objectives and the site was reclassified to "No Action". The water carried by the 100-F-44:1 pipeline was essentially the same water as that carried by the 100-F-26:1 pipeline, therefore no remedial action for the 100-F-44:1 subsite was needed and it may be reclassified.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:2

Classification: Accepted

Names: 100-F-44:2; Discovery Pipeline Near 108-F Building

Reclassification: No Action (5/30/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: A geophysical survey of the 100-F-44:2 subsite was conducted in January 2007 (Geophysical Site Investigation Summary form CCN 0574490) using ground-penetrating radar. Two east-westerly trending linears were identified that appear to originate or pass through the former junction box location. The linear that extends to the east is consistent with the location and depth of the 100-F-26:4 pipeline. The linear that extends to the west is consistent with the location and orientation of the pipeline of interest (100-F-44:2). The assumed 100-F-44:2 pipeline linear is interpreted to be between 1 and 1.5 m (3 and 5 ft) deep.

Location: This pipeline is on the east side of the 187-F1 water tower.

Waste Type: Not Specified

Waste Description: The waste includes the pipelines and any contaminated soil associated with these pipelines.

Closure Info: The current subsite conditions as documented in the Remaining Sites Verification Package 2007-006, have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Confirmatory sampling at the 100-F-44:2 subsite was performed on January 16. A test pit was excavated to a depth of approximately 2 meters (7 feet) where the pipeline was located (Washington State Plane Coordinates N 147619, E 580539). The pipe was located and uncovered eastward toward the 100-F-26:4 excavation boundary. The pipe was cut open at coordinates N 14618, E 580542. No interior pipe sample could be taken because there was no

sediment or scale inside the pipe.

The results of confirmatory sampling illustrated that contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and are summarized in Appendix B of the RSVP.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:3

Classification: Accepted

Names: 100-F-44:3; 1607-F3 Sewer System Pipeline

Reclassification: Rejected (6/14/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-44:3 subsite was identified as a 30.1 cm (12 in) diameter steel or cast iron pipeline. During confirmatory sampling of the 100-F-26:10 test pit #2, in 2004, a pipeline was observed at the bottom of the manhole, estimated at a depth of approximately 6.4 m (21 ft). Based on the observation of the pipeline as recorded in the sampling logbook EL 1578-4 page 43, the pipeline was listed as a discovery site, and added as the Site 100-F-44:3 subsite. The logbook is the only source of information for this site.

No other pipeline was encountered during the excavation. There was no evidence to support the existence of the 100-F-44:3, 0.3-meter (1-foot)-diameter steel or cast iron pipe within the manhole at the 100-F-26:10 test pit #2. Therefore, 100-F-44:3 was reclassified as Rejected from consideration as a waste site. The 100-F-44:3 subsite does not pose a risk to human health or the environment and will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario, and no institutional controls are required.

The subsite was originally identified, by visual observation during confirmatory sampling within the manhole at 100-F-26:10 test pit #2. However, it has been determined, through the excavation of the 100-F-26:10 pipelines in 2007, that the visual observation of the 100-F-44:3, 0.3-meter (1-foot)-diameter steel or cast iron pipe was erroneous. The entire manhole was removed during the 100-F-26:10 remediation, as was a volume of the soil beneath and surrounding the manhole. The 100-F-26:10 vitrified clay pipelines intersecting with the manhole location were removed, and the excavated site will be closed out following completion of the selected remedial action per the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.

The purpose of the pipeline was unknown, although a 0.3 m (1 ft) process sewer pipeline entering a manhole containing septic pipelines is certainly not a standard procedure. The test pit was located at coordinates E580259, N148001 and east of the 183-D Filter Plant.

Therefore, 100-F-44:3 was reclassified as "rejected" from consideration as a waste site. The

subsite does not pose a risk to human health or the environment and will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario, and no institutional controls are required.

Location: pipeline was reported to be within a manhole. The manhole was located at the Washington State Plane coordinates of E580259, N148001.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:4

Classification: Accepted

Names: 100-F-44:4; Discovery Pipeline in Silica Gel Pit

Reclassification: No Action (9/23/2008)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-44:4 subsite consisted of a steel pipe discovered October 17, 2004, during trenching to locate the 118-F-4 Silica Gel Pit. The 110-F Gas Storage Tanks consisted of two low-pressure (carbon dioxide) storage tanks, 33 high-pressure (helium) storage tanks, an unloading platform, and a rail tank-car spot. The area is believed to have remained essentially unchanged from the time of the reactor's construction in 1944 until the demolition of nearby structures [i.e., 132-F-3 (115-F Gas Recirculation Facility)] in 1984. There were no pipelines indicated on historical drawings for the area. Water, sewer, fire, and steam lines were all north of the 110-F structure and entered the northwest corner of 132-F-3.

The nearest waste site was the 118-F-4 Silica Gel Pit. According to historical records silica gel was deposited once in 1949. No installation of pipelines was involved.

Location: The pipeline was located 122 m (400 ft) west southwest of 105-F, at coordinates N147522 E580298.

Waste Type: Soil

Waste Description: The waste was pipeline sediment/scale and underlying soil.

Closure Info: The Remaining Sites Verification Package 2008-030, documented that the 100-F-44:4 subsite has met the remedial action objectives and goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site. (Remaining Sites ROD)

A phased approach was used to evaluate the pipeline and collect samples in support of the sampling objectives. Confirmatory sampling began on February 13, 2008 (EL-1601-2 pp. 38, 49, 50). An exploratory test trench approximately 5 to 6 m (15 to 20 ft) long was excavated. However, the pipe was not found at that location. On February 21, 2008, another trench was dug approximately 6 m (20 ft) due east of the first trench and of approximately the same length. This time the pipe was found and observed to be approximately 5 cm (2 in.) in diameter and 0.9 m (3 ft) below grade. The pipe length was determined to be 6 m (20 ft).

The visual evidence indicated this pipe was a piece of electrical conduit debris and not a process pipeline or sewer pipeline. Though the pipe was identified as non-hazardous conduit debris, part of the confirmatory samples planned for the waste site was collected. On February 25, 2008 the pipe was cut and a sample of about 250 ml of soil was taken from inside the pipe.

Evaluation of the results from confirmatory investigative sampling indicates that all contaminants of potential concern (COPCs) listed are less than the direct exposure cleanup level. In addition, the vadose zone underlying the pipe is approximately 7.8 m (25 ft) thick. Therefore, residual concentrations of these contaminants are predicted to be protective of groundwater and the Columbia River. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and were summarized in Appendix A of the RSVP.

Residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. No residual contamination existed within the deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:5

Classification: Accepted

Names: 100-F-44:5; Process Sewer Pipelines

Reclassification: No Action (4/22/2009)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-F-44:5 subsite is a network of reinforced concrete and steel pipelines that received process flow from the 190-F Building and discharged to a 1.07 m (42-in.) diameter pipeline associated with the 100-F-19:3 reactor cooling water effluent pipelines (CVP-2001-00003), which have been remediated. This pipeline subsite includes reinforced concrete pipe (RCP) and steel pipe consisting of the following:

- Two 0.9 m (36-in.) diameter RCP, 14 m (46-ft) long process sewers
- Two 0.15 m (6-in.) diameter steel, 14 m (46-ft) long process sewers
- 1.2 m (48 in.) diameter RCP, 38 m (125 ft) long process sewer
- 0.15 m (6-in.) diameter steel, 25 m (82 ft) long process sewer
- 1.2 m (48 in.) diameter RCP, unknown length (up to 54 m [177-ft] long) process sewer.

In 1956, an annex was added to the south side of the 190-F Pump House to increase the process water flow throughout the system. It is assumed, based on the 190-F Annex construction photographs and site drawings, that in the process of excavation for the 190-F Annex below-grade pump room, approximately 54 m (177 ft) of the original 1.2 m (48 in.) diameter RCP running east to west was removed and replaced with the 1.2 m (48 in.) diameter RCP that elbows to the south in a path around the 190-F Annex. However, an unknown length of the original pipeline could remain, and therefore has been included in the 100 F-44:5 subsite decision.

The Remaining Sites Verification Package for the 100-F-44:5 (RSVP-2008-016) documents that the subsite has met the objectives for reclassification to No Action. The remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units,(Remaining Sites ROD) have also been met.

Confirmatory sampling at the site was conducted on January 17, 2008. Samples of soil underlying the below-grade concrete floor of the pump room that previously contained the 100-F-44:5 pipelines were collected. The two 0.9 m (36-in.) diameter reinforced concrete pipe, 14 m (46-ft) long process sewer pipelines were not in the pump room; however, it was confirmed that the location was consistent with the design drawing (H-1-26685). Evidence to that effect included two portals in the south vertical wall and two portals in the north vertical wall. The sampling logbook (WCH EL-1601) documents that the excavator operator confirmed a low spot in the floor that may have indicated a sump between the walls. A section of the floor was rumbled and removed, and the excavator collected soil from beneath the floor location as soil sample material.

Historical process knowledge of the subsite and similar sites were used to develop the site-specific confirmatory sample design and include nickel-63, uranium-238, and polychlorinated biphenyls as COPCs. Because the subsite was an extension of the 190-F bypass process water pipelines that were associated with the 100-F-26 waste site, the COPCs for the 100-F-26 (strontium-90, cesium-137, cobalt-60, europium-152, europium-154, hexavalent chromium, arsenic, barium, cadmium, total chromium, lead, mercury, selenium, and silver) waste site were included.

The complete laboratory results are stored in the WCH Environmental Restoration project-specific database prior to submitting to the Hanford Environmental Information System for archiving and were provided in Appendix B of the RSVP.

Site contamination did not extend into the deep zone soils; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone at the waste site are required.

Location: It is located directly north of the 105-F Reactor and south of the 190-F Building Annex.

Waste Type: Soil

Waste Description: The waste is potentially contaminated soil.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:6

Classification: Accepted

Names: 100-F-44:6; 189-F Refrigeration Pipeline

Reclassification: Rejected (4/30/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: A 76-centimeter (30-inch) pipe entering the foundation of the 189-F Refrigeration Building was discovered during excavation of a test pit for confirmatory sampling at 100-F-26:4 (South Process Sewer Pipeline) on December 17, 2004. The subsite has been reclassified as Rejected based on the absence of potential chemical or radionuclide contamination associated with service water pipelines.

The origin of the pipeline was investigated as part of the 100-F Orphan Sites Evaluation task. Initially, the pipeline was thought to be an abandoned 107-centimeter (42-inch)-diameter raw water line for the 189-F Refrigeration Building. As such, the pipeline was assigned to waste site 100-F-41 (100-F Service Water Pipelines, 100-F Clean Water Pipelines) and designated as subsite 2. Because its former use was uncertain, the pipeline was reassigned to 100-F-44 (Miscellaneous Pipelines) and designated subsite 6.

The subsite has been reclassified as Rejected based on the absence of potential chemical or radionuclide contamination associated with service water pipelines.

Location: This pipeline ran from the 181-F River Pumphouse to the 189-F Refrigeration Facility in the north-central part of the 100-F Area.

Process Description: The pipe has been identified as a raw water pipeline that supplied water to the condenser units in the 189-F Refrigeration Building. The pipeline also supplied backup raw water to the 182-F and 183-F facilities. The information discovered during the review substantiated the initial finding that the pipeline was the abandoned 107-centimeter (42-inch) raw water line for the 189-F Refrigeration Building. It varied in diameter from 76 centimeters (30 inches) to 107 centimeters (42 inches) and is 908 meters (2,979 feet) in total length, including laterals.

Waste Type: Not Specified

Waste Description: The waste is the old buried pipes from the raw water pipeline system.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:7

Classification: Accepted

Names: 100-F-44:7; 1717-F Blowdown Pipeline

Reclassification: Rejected (8/27/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The reclassification form number 2007-012 and documentation states that the subsite has been reclassified to Rejected. The reclassification was based on the absence of potential chemical or radionuclide contamination within the pipelines.

This subsite, originally thought to be one pipeline, actually comprises two 10 cm (4 in.) cast-iron pipelines each 27 m (88 ft) in length.

The DS-100F-008 pipeline segment was a 10 centimeter (4 inch) cast iron blowdown pipeline, 27 meters (88 feet) in length. The pipeline discharged into WIDS Site 100-F-5, 1717-F Building Drywell. Conflicting construction drawings indicated there may be a drain line of identical size and length running in parallel to this line. The two pipelines had been used to connect the 1717-F auxiliary boiler system to the 105-F, 1717-F Building Drywell for safety reasons. As a rule the blowdown valve on a boiler was plumbed into a dedicated pipeline or drain. The existence of the pipelines was confirmed by geophysical methods. During decommissioning and demolition of the 1717 F Maintenance Shop structure in 1983, short sections of both pipelines were removed.

Location: The segment consisted of one or two pipelines extending 23 meters (76 feet) from N147757 E580622 to N147757 E580645. The two 10 centimeter (4 inch) diameter pipelines were identified, in historical construction drawings, on the west side of the former 1717-F Maintenance Shop.

Process Description: Both pipelines connected from an auxiliary boiler system in the 1717-F Building to the 100-F-5, 1717-F Building Drywell. Water carried in the pipelines consisted of sanitary (potable) water. The Blowdown pipe served to prevent an explosion if the boiler pressure got too high, hot liquids and vapors would not be able to backflow, and possibly damage other locations or personnel in or around the boiler system. Having a dedicated pipeline also ensured that the carrying capacity of that pipeline would not become restricted over time due to incidental use.

Therefore, each of the boilers in the heating system required a separate dedicated blowdown pipeline.

Steam condensate, from the heating systems serviced by the 1717-F auxiliary boiler system, was not returned to the boiler system for reuse. Therefore, water would not have contained chemical or radiological contaminants from the laboratories or other facilities serviced by the 1717-F auxiliary boiler (heating) system. Only unregulated concentrations of water treatment chemicals, used to produce potable water, would be present in the boiler system and, therefore, in the water carried by the pipelines.

The SubSite is Part Of:

Code: 100-F-44

Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:8

Classification: Accepted

Names: 100-F-44:8; 1717-F Fuel Oil Supply and Return Pipelines

Reclassification: Interim Closed Out (12/15/2011)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This waste site has been remediated. Segment DS-100-F-009 was two 3.8 centimeter (1.5 inch) diameter black steel pipelines. They extended 36 meters (118 feet) from N147753 E580610 to N147753 E580637 to N147756 E580645. They were fuel oil supply and return pipelines that serviced the three underground fuel oil tanks (WIDS site 100-F-32) and the 1717-F building. Evidence was found that the tanks were offered for sale and photographs showed a disturbance where the tanks were previously located. It is possible these pipelines were removed as part of the tank removal.

Location: These pipelines were located about 240 meters (787 feet) northeast of the 105-F Reactor.

Process Description: The pipelines allowed fuel oil to be supplied to the 1717-F maintenance shop and office buildings.

Waste Type: Not Specified

Waste Description: The waste includes the pipelines and any contaminated soil associated with these pipelines.

Closure Info: In 2008, the pipelines were located. Confirmatory sampling determined that liquid with a strong diesel odor was still present in the lines. Remedial action at the 100-F-44:8 pipelines began on October 27, 2010, and continued through January 4, 2011, to a depth of approximately 0.7 meters (2.3 ft) across the entire excavation footprint. Due to the shallow nature of the excavation, no overburden was associated with this site. The excavation resulted in approximately 80 bank cubic meters (BCM) (104.6 bank cubic yards [BCY]) of contaminated soil and debris being removed for disposal at the Environmental Restoration Disposal Facility (ERDF). Approximately 72 meters (238 ft) of 3.81 centimeters (1.5 inch) diameter steel pipe, along with contaminated soil, piping, conduit, wires, concrete, and used personal protective equipment was excavated from this waste site and disposed at the ERDF. Following the verification sample analysis, it was determined that additional remediation was needed due to sample locations that exceeded cleanup criteria. A second remediation was conducted on June 9, 2011, with the removal of 126.4 BCM (165.3 BCY) of contaminated soil. With agreement from the U.S. Environmental Protection Agency (EPA), additional soil was removed from areas that exceeded direct exposure and/or groundwater and river protection RAGs in the excavation and staging pile area footprint.

The SubSite is Part Of:**Code:** 100-F-44**Names:** 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)**Code:** 100-F-44:9**Classification:** Accepted**Names:** 100-F-44:9; 105-F Process Sewer Pipeline**Reclassification:** Interim Closed Out (9/14/2011)**Type:** Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The pipeline has been removed. The segment was a 46 centimeter (18 inch) steel process sewer pipeline approximately 42 meters (140 feet) in length.**Location:** The 100-F-44:9 waste site was located in the 100-FR-1 Operable Unit of the Hanford Site. It was east of the former 105-F Reactor Building, within the 105-F Exclusion Area fence line. The pipeline was 42.5 meters (140 feet) long, extending from N147620 E580460 to N147620 E580473 to N147618 E580475, and ending at N147591 E580475.**Process Description:** The pipeline conveyed effluent from the east side of the 105-F Reactor Building and appeared to discharge to a 1.07-m (42-in.)-diameter pipeline associated with the 100-F-19:2 Reactor cooling water effluent pipelines that have since been remediated.**Related Sites/ Structures:** 100-F-44:9 was associated with the 100-F-19:2 cooling water pipeline.**Waste Type:** Not Specified**Waste Description:** Possible chemical and/or radionuclide contaminated pipelines and underlying soils.**Closure Info:** A geophysical survey of the site was conducted in January 2007. The geophysical survey findings agreed with historical documentation for the pipeline that shows a north-south trending, 18-in.-diameter steel pipeline paralleling the 105-F Reactor footprint along the east side. The pipeline turns to the west near the northern side of the reactor. Remedial action at the 100-F-44:9 pipeline subsite began on November 3, 2010, and continued through January 5, 2011, to a depth of approximately 3 meters (10 ft). One staging area was developed during the excavation for storing soil prior to disposal at the ERDF. Contaminated soil, pipe, asphalt, clay pipe, concrete, and rebar were removed from the 100-F-44:9 excavation for shipment and disposal to the ERDF. The post-excavation surveys, conducted on January 10, 2011, identified no residual radioactivity above twice background within the site.

An anomaly was discovered within the excavation of the 100-F-44:9 subsite that appeared to be a large metal valve. A sample of the anomaly not collected after the object was found to be empty. Industrial Hygiene and radiological readings did not detect contamination present within the anomaly.

The SubSite is Part Of:**Code:** 100-F-44**Names:** 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-44:10 **Classification:** Accepted
Names: 100-F-44:10; 141-C Sewer Pipelines; 100-F Experimental Animal Farm Sewer Pipelines **Reclassification:** Rejected (10/11/2007)
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The basis for reclassification to rejection of subsite 100-F-44:10 (DS-100F-017) is supported by historical review, associated site information, exploratory trenching, and geophysical data. The subsite consisted of two 20.3-centimeters (8-inch)-diameter sewer pipeline segments exiting the 141-C building. It has been determined through the excavation results that there is no evidence to support the existence of the site. It has been determined through the excavation results that there is no evidence to support the existence of the pipelines. The pipelines were likely removed during earlier demolition activities. The subsite does not pose a risk to human health or the environment and will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario, and no institutional controls are required.

Historical review determined that during Decontamination and Decommissioning activities of the 141-C Building (between August and December 1979), the building, concrete pad, foundation and contaminated soils were removed. The only remaining structure was a temporary steel post that marked the location of a 6-inch gate valve. The valve and 36.5 meters (120 feet) of potentially contaminated 20 centimeter (8-inch) steel pipe that extended from the valve to the decommissioned waste lift station (141-N) was capped and abandoned in place.

Documentation in the Cleanup Verification Package-2001-0003 for sites 100-F-19:2, 116-F-11, 100-F-29, and UPR-100-F-1 stated that pipelines were excavated on March 22, 2002 that extended from just east of the former 141-C Building to the former 141-N waste lift station. A geophysical survey was performed in April 2004 to locate and map any buried remains from the demolished 141-C Building. The geophysical survey narrative stated that the entire site appeared to have been disturbed from operational or deactivation activities. There were no obvious anomalous features detected that had the characteristics of remnants of the infrastructure from the original site (e.g., foundation footings, buried debris, pipelines, utilities).

In August 2005 during the 141-C Building remediation, exploratory trenches were dug to confirm that the sewer lines formerly servicing the 141-C Building had been removed during previous deactivation activities. No sewer lines were located by these excavations and field instrumentation did not detect any beta-gamma or alpha activity above background levels. There was no evidence to support the existence of the pipe segments in the vicinity of the 141-C Building.

Location: The waste site was located within the 100-F Experimental Animal Farm area. The subsite consisted of two 20.3-centimeters (8-inch)-diameter sewer pipeline segments exiting the 141-C building. It has been determined through the excavation results that there is no evidence to support the existence of the pipelines.

The SubSite is Part Of:

Code: 100-F-44
Names: 100-F-44; 100-F Miscellaneous Pipelines (See Subsites)

Code: 100-F-45 **Classification:** Accepted
Names: 100-F-45; Buried River Effluent Pipelines **Reclassification:** Interim Closed Out (12/15/2011)
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: from the river effluent pipeline.

Location: The site is located on a steep river bank approximately 10 meters (33 feet) from the Columbia River, approximately 670 meters (2,200 feet) northeast of the 105-F Reactor Building and about 15 meters (50 feet) upstream from the 116-F-16 PNL Outfall.

Process Description: The 100-F Area process sewers discharged via the 1904-F (116-F-8) Outfall to the Columbia River through two 106 centimeter (42 inch) steel lines (BHI-01141). Soon after the 105-F Reactor started up in 1945, these pipelines began to experience a problem common to all of the early reactors, floating river effluent lines. More than 100 feet of each of these lines were bent and broken. Historical documentation suggested that these broken sections were removed from the river and buried somewhere along the shoreline, although the exact location was not recorded. In 1946, the original pipelines were replaced with much shorter ones, causing confusion over time.

Related Sites/ Structures: These suspected pipeline sections are believed to have resulted from the failure of the 100-F-39, 100-F River Effluent Pipelines which are also co-located with 116-F-8 Outfall Structure, and the 100-F-42, 1904-F Spillway/Flume.

Waste Type: Equipment

Waste Description: Contaminants of concern/potential concern are based on those for the 1904-F outfall (116-F-8). Contaminants of concern include Co-60, Eu-152, Eu-154, Eu-155, and Cr+6. Contaminants of potential concern include C-14, Cs-137, Ni-63, and Sr-90.

Closure Info: Remedial action at the 100-F-45 waste site began on March 14, 2011, and continued through March 21, 2011, to a depth of approximately 0.5 to 2.0 m (1.7 to 6.6 ft). The excavation resulted in approximately 160.0 bank cubic meters (BCM) (208.0 bank cubic yards [BCY]) of contaminated soil and debris being removed, including 15.3 m (50.0 ft) of 42-in.-diameter steel pipe, for disposal at the Environmental Restoration and Disposal Facility (ERDF). Approximately 217.0 BCM (283.8 BCY) of overburden material was stockpiled southwest of the excavation for use as clean backfill. A small staging pile area was used for contaminated soil and pipe material, which was later loaded out and disposed at the ERDF.

Upon completion of remedial activities, high river flow caused water seepage into the excavated area. This seepage caused some of the surrounding bank to fall into the finished excavation area. Prior to verification sampling, this soil material was removed at the specified sampling locations.

No elevated radiological readings were detected during the excavation of the 100-F-45 waste site; therefore, no Global Positioning Environmental Radiological Surveyor (GPERS) surveys were conducted.

Contaminated soil and 15.3 m (50.0 ft) of 42-in.-diameter steel pipe were removed from the 100-F-45 excavation for shipment and disposal to the ERDF. No anomalous materials or stained soil were encountered during the excavation.

Code: 100-F-46	Classification: Accepted
Names: 100-F-46; 119-F Stack Sampling French Drain	Reclassification: No Action (8/8/2008)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site consisted of the 119-F french drain, a gravel-filled vertical pipe, and the pipeline from the 119-F Stack Sampling Building to the french drain.	
Location: The french drain was located about 7.5 meters (25 feet) northwest of the west wall of the 119-F	

Stack Sampling Building. The influent end of the pipeline was at E580382.2 N147614.2. The pipeline depth was above the top of the 117-F air tunnels such that it was likely removed during the decontamination and decommissioning (D&D) activities for the 117 F Building and air tunnels.

Process Description: The 116-F reactor stack exhaust gases were sampled by pulling moist stack offgases through a steam-heated pipe to the 119-F Stack Sampling Building where the gas stream was sampled. The condensate from the stack offgases drained via a 2 inch cast iron pipeline to the 119-F french drain. A 5 centimeter (2 inch) cast iron pipe drained condensate from the 119-F Stack Sampling Building into the french drain. The drain pipeline is included as part of this waste site.

Related Sites/ Structures: The site was associated with the 118-F-8 Reactor Building 116-F Stack, 119-F Stack Sampling Building, 117-F Filter Building and Air Tunnels.

Waste Type: Equipment

Waste Description: The site may contain contaminated soil from condensate entering the french drain. The waste includes the french drain and the pipelines. It is likely that these structures no longer exist. However, remediation of these structures is not documented in a cleanup verification package.

The condensate from the 116-F stack potentially contained the same contaminants of concern identified for the 116-F stack during the characterization sampling performed for the allowable residual contamination level (ARCL) evaluation completed in 1985. Low levels of tritium-3, carbon-14, strontium-90, cobalt-60, cesium-13, europium-152, and plutonium-239 were reported for the 116-F stack.

Potential Contaminants of Concern: Low levels of tritium-3, carbon-14, strontium-90, cobalt-60, cesium-13, europium-152, and plutonium-239 were reported for the 116-F stack.

Closure Info: The Remaining Sites Verification Package, RSVP-2008-021, documents that the site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Both the 100-F-46 French drain and the condensate pipeline were presumed to have been removed during decommissioning and demolition of the 117-F Filter Building (132-F-5) and associated air tunnels in 1983. These structures were decontaminated, removed to a depth of 1 meter (3 feet) below grade, and backfilled to grade.

Confirmatory sampling at the 100-F-46 french drain site was performed on November 29, 2007. A test pit was excavated to approximately 4.5 m (15 ft) depth, with no indication of either the french drain or the associated cast iron condensate pipeline. The site contaminants of potential concern (COPCs) that were developed from process knowledge included: tritium, carbon-14, strontium-90, cobalt-60, cesium-137, europium-152, and plutonium-239/240. Based on further evaluation of contaminants potentially discharged to the 100-F-46 French drain, europium-154, europium-155, the expanded list of inductively coupled plasma metals, mercury, hexavalent chromium, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, (PAHs), and total petroleum hydrocarbons (TPH) were added as COPCs.

The laboratory-reported data results for all constituents were stored in the WCH Environmental Remediation System (ENRE) project-specific database prior to submission for archival in the Hanford Environmental Information System (HEIS) site-wide database and were summarized in Appendix B of the RSVP.

The confirmatory sampling results support a reclassification of the site to No Action. The results also indicate that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 100-F-47	Classification: Accepted
Names: 100-F-47; 151-F Substation	Reclassification: Interim Closed Out (12/15/2011)
Type: Electrical Substation	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1965

Description: The substation consisted of a fenced, gravel-bed yard measuring 92.4 meters (303 feet) by 137.2 meters (450 feet), with the 151-F Switch House along the eastern fence line. A railroad spur entered the yard from the south and paralleled the east fence line.

The 151-F Substation distributed power to transformers located at the 181-F River Pump House, 182-F Head House, 183-F Filter House, 184-F Power House, 190-F Pump House, and the 105-F Reactor, each of which, in turn, distributed power to associated facilities.

Location: The 151-F Building and associated switch yard were located approximately 350 meters (1148 feet) northwest of the 105-F Reactor Building. The 151-F Building was centered along the east fence line of the switch yard.

Process Description: The 151-F Substation was fully energized in January 1945 and supplied 13.8 KV electrical power to the 100-F Area.

More than 100 concrete footings and pads of various sizes protruded from the crushed gravel bed throughout the yard, supporting a variety of electrical equipment, including two 31,250 KVA, 220/13.8 KV transformers, one 37.5 KVA transformer, three oil circuit breakers, and several power line towers and stands. Underground concrete-encased "Korduct" ducts connected the switch house with the transformers and oil circuit breakers.

The single-story concrete block switch house was 24.4 meters (80 feet) long by 9.1 meters (30 feet) wide and 3.4 meters (11 feet) high. A 3.4 meter (11 foot) wide by 3.4 meters (11 feet) high by 21.9 meters (72 feet) long reinforced concrete cable pit ran beneath the block house.

Related Sites/ Structures: The 151-F Building and associated switch yard were located approximately 350 meters (1148 feet) northwest of the 105-F Reactor Building. The 151-F Building was centered along the east fence line of the switch yard

Waste Type: Soil

Waste Description: There have been no reported unplanned discharges of oil containing PCBs. Since leak/spill reporting is inconsistent for the entire period of operation of the substation, it is prudent to assume unplanned discharges of oil may have occurred at locations where transformers or oil circuit breakers were positioned, or where the railroad tanker was located. Confirmatory sampling around these locations should be considered.

There may be more than 2,744 meters (9,000 feet) of underground electrical cable, generally housed in fiber or transite conduit, and encased in at least 7.6 centimeters (3 inches) of concrete. It is suspected that much of this copper cabling is encased in an asbestos wrap and an outer lead sheath. Also, depending on the extent of unplanned releases, these lines may be contaminated by PCB-containing oil. This same cabling may also still remain in the cable pit of

the 151-F Building.

Potential Contaminants of Concern: PCBs, lead, and asbestos.

Closure Info: Remediation of the 100-F-47 waste site was performed from October 20, 2010, through June 27, 2011, to a depth between 1 and 4.35 m (3 and 14.3 ft) across the entire excavation footprint. Due to the shallow nature of the contamination, no overburden was associated with this site. Approximately 14,500 m³ (19,000 yd³) of contaminated soil, concrete, rebar, wire, steel cable, asphalt, asbestos, wood, steel, porcelain, and glass were removed from the 100-F-47 excavation and were directly loaded for shipment and disposal at the Environmental Restoration Disposal Facility. No anomalous materials were encountered during the excavation. Two small transformers were found during the excavation, and will be characterized for disposal at a later date.

Code: 100-F-48	Classification: Accepted
Names: 100-F-48; 184-F Coal Pit Debris	Reclassification: Interim Closed Out (12/15/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:

Description: The waste site consisted of an area of debris that was identified in an aerial photograph and a historical literature search. The debris has been removed and disposed into the Environmental Restoration Disposal Facility.

Location: The coal pit debris is located immediately north of the 184-F Power House site (removed), about 500 meters (1,650 feet) northeast of the 105-F Reactor Building.

Process Description: Inert demolition debris was commonly disposed on site in the large operations support storage facilities such as the coal storage bins and the water treatment and storage basins. The criteria for what was allowed to be disposed on site are not documented but generally are thought to include nonradioactive solid debris such as building materials (e.g., siding, roofing, structural, concrete/concrete block, fencing) removed during demolition of administrative and ancillary support facilities between 1967 and 1990. Some unacceptable solid waste forms such as asbestos-containing siding or roofing were allowed to be disposed.

Related Sites/ Structures: The associated structures included the 184-F Power House and 184-F Coal Handling Facilities.

Closure Info: Confirmatory Sampling Failed. Analytical results from the confirmatory samples indicate that the material in the drum found in the geophysical anomaly area exceeded shallow-zone direct exposure Remedial Action Goals (RAGs) for thorium-230, uranium-233/234, uranium-238, and arsenic. The material also exceeded groundwater and river protection RAGs for copper, lead, mercury, and zinc.

Based on the confirmatory sampling results, the 100-F-48 waste site was recommended for remediation.

Remediation of the 100-F-48 waste site was performed from September 21, 2010, to January 11, 2011. The coal scrape area was remediated to a depth of approximately 0.3 m (1 ft), while the main excavation area had a final depth that ranged from approximately 0.2 m (0.7 ft) to 3.5 m (11.4 ft). The 100-F-48 waste site excavation resulted in approximately 13,922 BCM (18,209 BCY) of material being removed for disposal at the Environmental Restoration Disposal Facility (ERDF).

Soil and debris from the main excavation area were direct-loaded to ERDF, while material

removed from the coal scrape area was staged at the east stockpile area before eventual removal to ERDF. Types of debris uncovered include: concrete, steel pipe, rebar, porcelain, clay pipe, bricks, wire, cable, suspect ACM, and asphalt. No overburden soil stockpiles were associated with the waste site.

The 100-F-48 waste site anomalies included two deteriorated, leaking drums, and a single intact, non-leaking drum. The single intact, non-leaking drum was found to be empty. The two deteriorated, leaking drums were sampled, and one drum was found to contain high concentrations of TPH and lead.

Code:	100-F-49	Classification:	Accepted
Names:	100-F-49; 1716-F Maintenance Garage Lubrication Pit	Reclassification:	Interim Closed Out (12/15/2011)
Type:	Foundation	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site consisted of components of the 1716-F Maintenance Garage, including the foundation, the lubrication pit, and the contaminated drain(s). The waste site has been remediated. The foundation of the former garage building was T-shaped with overall dimensions of approximately 15 by 17 m (50 by 55 ft).		
Location:	The building was located in the northwest corner of the Service Building group approximately 1,101 meters (3,612 feet) north of the 100-FR-2 east-west perimeter road. The building was on the west side of F Avenue, about 13 meters (43 feet) from the road.		
Process Description:	The 1716-F facility provided automotive repair, light vehicle maintenance, and lubrication service for the 100 F Area vehicles.		
Waste Type:	Soil		
Waste Description:	There may have been oil spills in the lubrication pit and battery acid spills in the high bay area.		
	The Geophysical team identified this area as a potential new waste site due to the probable oil spills (polychlorinated biphenyls [PCBs], total petroleum hydrocarbons [TPH]) in the lube pit, potential battery acid in the high bay area, potential unknown pipelines, and the potential asbestos siding debris.		
Closure Info:	Confirmatory Sampling Failed. Results of confirmatory sampling indicated that test trench 1 met all remedial action goals. Results from the remainder of the site indicated contamination with lead and polychlorinated biphenyls (PCBs) above direct exposure RAGs. In addition, the remainder of the site also exceeded groundwater and river protection RAGs for numerous metals, semivolatile organic analytes, pesticides, and total petroleum hydrocarbons (TPH). In all, 29 different contaminants exceeded groundwater and/or river protection RAGs. Asbestos was also confirmed at the site. Based on these results, the entire 100-F-49 waste site, except for suspect utility lines associated with test trench 1, was recommended for remediation.		
	The 100-F-49 waste site was remediated between January 11 and April 12, 2011. During the 100-F-49 remedial activities, a steel tank was discovered at Washington State Plane (WSP) coordinates N 147891, E 580666. The tank was not expected to be present at this location, and therefore, the excavator had slightly broken into the tank, causing some of the liquid from the tank to spill into the surrounding soils. The spilled liquid from the tank and soil was sampled (J1F1N1) and determined that the tank was used for oil storage purposes. The tank and its location were carefully observed and determined to be the same oil tank that 2008 confirmatory sampling expected to find. The liquid and sludge contents were pumped from the tank prior to its disposal. The steel tank structure, oil saturated soils, and additional underlying soil were		

removed from the 100-F-49 excavation and disposed at the Environmental Restoration Disposal Facility (ERDF).

Remediation included removal of the 1-in.-diameter steel pipe, 20 m³(21.3 yd³) of concrete, a 1,325-L (350-gal) steel storage tank and approximately 1,325 L (350 gal) of fuel, oil and sludge from the tank. Miscellaneous debris such as concrete and rebar were removed from the excavation and stockpiled adjacent to the site for disposal at the ERDF. The deepest part of the 100-F-49 excavation extended to approximately 2.7 m (8.9 ft). Approximately 2,727 bank cubic meters (3,567 bank cubic yards) of soil and debris was excavated from the 100-F-49 waste site. Roughly half of the materials were stockpiled adjacent to the excavation prior to disposal at the ERDF. The other half of the excavated materials was directly loaded for disposal at the ERDF.

Following the load out of stockpile materials, the staging pile area was scraped to 0.3 m (1 ft) below ground surface. A very small green/yellow stain was observed at 0.3-m (1-ft) depth at WSP coordinates N 147943.3, E 580631.1. It was determined that the stain was not caused by the stockpile; rather the stain was present at this location prior to any 100-F-49 stockpiling activities. The stained soil was sampled (J1FHT7). The sample data of the stained soil indicates that all individual contaminant of potential concern concentrations are below RAGs.

Code: 100-F-51	Classification: Accepted
Names: 100-F-51; 146-F Fish Laboratory Soil	Reclassification: Interim Closed Out (9/26/2011)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:

Description: The site is the soil under and around the former 146-F Fish Laboratory.

Location: The 146-F Fish Laboratory was located approximately 489 meters (1600 feet) northeast of the 105-F Reactor Building, and about 91 meters (300 feet) southwest of the 1904-F Outfall.

Process Description: The laboratory sat on a curbed, concrete pad, the laboratory was 5 meters (16 feet) wide by 24 meters (80 feet) long. The floor sloped toward a central trough that was 15.8 meters (52 feet) long by 0.4 meters (1.5 feet) wide by 0.2 meters (0.5 feet) deep, which in turn drained out the north end of the building and directly east into the 147-F Pump House pit. The laboratory contained ten pairs of elevated, open-top, wooden fish troughs, each 3.7 meters (12 feet) long by 0.3 meters (1 feet) wide by 0.2 meters (0.75 feet) deep, as well as three head tanks and associated piping to the troughs.

River water was pumped to the Fish Laboratory through a 15 centimeter (6 inch) line from the 181-F River Pump House; process water was pumped to the building through a 5 centimeter (2 inch) line from the 190-F Main Process Pump House and Annex; and process effluent was pumped to the facility (where it was cooled before use), via the 148-F Pump House from the 107 F Retention Basin. Spills and overflows from the troughs and head tanks drained to the 147-F Pump House pit, which pumped to the 1904-F Outfall and discharged to the Columbia River.

There were removable wooden walkways between the troughs. In addition, the building contained a process water refrigeration system, fish food bins, refrigerator and freezer, electric heater and swamp cooler, an office, and a bathroom. Immediately to the east of the building were the outdoor rearing ponds and the 149-F Biology Warehouse, and immediately to the south was the 146-FR Radioecology and Aquatic Biology Laboratory that was built in 1952.

Related Sites/ Structures: Associated structures included: 116-F-8 (1904-F Outfall), 100-F-57 (190-F Process Water Pump House Debris), 100-F-52 (146-FR Radioecology/Aquatic Biology Laboratory Soil), 116-F14 (107-F Retention Basin)

Waste Type:	Soil
Waste Description:	No reports were found of unplanned discharges to the soil from this building. However, because of the open-trough operations within the building it is prudent to assume such discharges may have occurred. A partial geophysical survey of the area recorded mixed subsurface debris that could be a portion of the original foundation.
	Contaminants of concern/potential concern are based on those for the 1904-F Outfall (116-F-8). Contaminants of concern include cobalt 60, europium 152, europium 154, europium 155, and hexavalent chromium. Contaminants of potential concern include carbon 14, cesium 137, nickel 63, and strontium 90.
Closure Info:	100-F-51 and 100-F-63 were addressed as a group. The information below documents information for the group of sites.
	In November 2007 and February 2008, confirmatory sampling of the 100-F-51 waste site was carried out during the excavation of two test pits, at the north end and southeast corner of the laboratory (WCH 2007b). Confirmatory sampling results failed to meet remedial action goals (RAGs) and indicated the need for remedial action at the 100-F-51 waste site. Confirmatory sampling was not performed for the 100-F-63 waste site; the site was added to the 100-F Area scope for remove, treat, and dispose in 2010 (WCH 2010a).
	Remedial action at the 100-F-51 and 100-F-63 waste sites began on December 20, 2010, and continued through January 20, 2011. Excavation depth ranged from 0.5 to 1.5 m (1.6 to 4.9 ft) below ground surface bgs and resulted in approximately 253 bank cubic meters (BCM) (331 bank cubic yards [BCY]) of soil and debris being removed and disposed at the Environmental Restoration Disposal Facility. Approximately 330 BCM (432 BCY) of overburden soil was stockpiled to be used as backfill. The 100-F-51 and 100-F-63 waste sites debris included concrete, clay pipe, steel pipe, and asphalt. The verification sampling results support a reclassification of the 100-F-51 and 100-F-63 waste sites to interim closed out.

Code:	100-F-53	Classification:	Accepted
Names:	100-F-53; 108-F Septic System	Reclassification:	No Action (6/26/2009)
Type:	Septic Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site potentially consisted of pipelines, a septic tank, the drain field and any contaminated soil around them. The site represented what was thought to be a septic system. It was unknown if an engineered liquid waste disposal facility existed at the site, either as a septic system or a crib system.		
Location:	The site was located approximately 190 meters (625 feet) east of the 105-F Reactor Building.		
Release Description:	Releases unknown.		
Process Description:	Gravity drain sewer system, either sanitary or chemical, discharged to the soil column via a drain field.		
Related Sites/Structures:	Any liquid waste discharges to this suspect site would have originated from the 100-F-36 (108-F Chemical Pump House, 108-F Biological Laboratory) site.		
Waste Type:	Soil		
Waste Description:	The waste potentially consists of the pipelines, the septic tank, the drain field and any contaminated soil around them. Geophysical measurements were inconclusive. No clear evidence was found of a septic tank, a septic line, or a drain field.		

Since the septic system (if it existed) would have been associated with 108-F Building and the activities within the building (before 1949 and the addition of the biology facilities to 108-F), the contaminants of potential concern may have been hexavalent chromium or mercury.

Closure Info: The Remaining Sites Verification Package, 2008-019, has documented that the 100-F-53 waste site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

An aerial photograph P-1888 taken during construction of the 100-F Area showed that the Crafts Office was one of the first buildings constructed in the 100-F Area. This building did not appear on photographs taken during operation of the 100-F Area, indicating it was removed early in the operations time period. Based on the historic aerial photographs, the 100-F Area Plot Plan drawing (Drawing C-3231), and the building description in DuPont (1945), it was concluded that the TC-32 Crafts Office was the Layout building and that this is the building seen in the historic photographs. It follows that the drain field shown on the drawing (and found in the 100-F-53 test trench) serviced this temporary construction building. Thus, the septic tank associated with the 100-F-53 septic system was a wood framed box buried 0.3 m (1 ft) below grade and located somewhere between the drain field and the "Layout" building.

A geophysical survey was performed at the site in August 2005 (Bergstrom and Mitchell 2005) to locate evidence of a septic tank, underground pipelines, and a drain field based on the historical drawing (HEW 1944). Ground-penetrating radar and an electromagnetic induction (EM-61) metal detector were the geophysical methods used for the investigation. The results showed no features that would have been characteristic of a typical septic tank. Several linears were detected that could be characteristic of underground pipelines and/or utilities, but the results were inconclusive. Also, scattered anomalies throughout the surveyed area were likely buried remnants from decommissioning of the 108-F Building. It should be noted the geophysical methods used have only a limited capability to detect wood septic tanks and vitrified clay pipes (characteristic of drain fields and sanitary sewer piping).

The Contaminants of Potential Concern (COPCs) for the Phase II effort were identified based on the results of Phase I confirmatory sampling. The list of COPCs included inductively coupled plasma (ICP) metals, mercury, pesticides, polychlorinated biphenyls, and semivolatile organic compounds (SVOCs). Radionuclides were not COPCs for Phase II sampling because the nature of the site as a construction office did not suggest potential for radiological contamination, and all detected radionuclide values from the Phase I confirmatory sampling were less than background activity.

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and were summarized in Appendix B of the RSVP.

Based on historical and photographic evidence, including field observations during Phase I and Phase II confirmatory sampling, the 100-F-53 septic system was determined not to have been associated with the 108-F Biological Laboratory, but instead serviced a temporary construction building. Confirmatory sampling activities determined that the septic tank had previously been removed and sampling results indicated that the residual concentrations of COPCs at this site meet the remedial action objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the confirmatory sampling results supported a

reclassification of the site to No Action.

The results also show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario), allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep), and demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	100-F-54	Classification:	Accepted
Names:	100-F-54; 100-F Animal Farm Pastures	Reclassification:	No Action (4/17/2008)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consists of the soil associated with the former pastures for holding contaminated domestic farm animals used in experimental toxicology studies. This site consisted of the remaining soil associated with the former pastures. A major portion of the animal farm activities were conducted in the segregated complex northeast of the reactor building and near the outfalls.		
Location:	The pastures were located east of the 105 F larger pasture, north of the 1 larger pasture, was approximately 580 meters squared (6250 square feet) and was centered at the 141-N Building footprint, was approximately 1,500 meters squared (16,100 square feet) and was centered at N147942 E580895 (H-1-13850). The smaller pasture, directly to the east of the N147957 E580927.		
Process Description:	There were three general pasture areas associated with the complex. The first was a large, contiguous pasture extending from the 141-G Building north to the perimeter road. The second consisted of two smaller pastures; one adjacent and to the west of the 141-H Building; and the other adjacent and to the north of the 141 T Building. The third consisted of two larger pastures (one for hogs, one for goats) directly south of the 141-C and 145-F Buildings. Radioactively dosed animals were confined to the buildings until their feces and urine met certain limits; then they were allowed into the pastures. There was concern that the pastures may contain low-level contamination.		
Related Sites/ Structures:	Dosed animals were housed in the 141-H and 141-F Buildings, which were adjacent to these pastures.		
Waste Type:	Soil		
Waste Description:	Animals were pastured in these areas, their waste would have discharged to the ground and may have contaminated the soil.		
	Historical documents indicated strontium-90, iodide-131, isotopes of plutonium, cesium-137, and other radioisotopes were used in the animal exposure studies.		
Closure Info:	The Remaining Sites Verification Package, 2008-015, documents that the current site conditions have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD).		
	Three general pasture areas were associated with the experimental animal farm complex. Later a few areas were used for stockpiling soil associated with the 100-F Area Remedial Action		

excavations. These areas were subsequently surveyed and/or sampled to demonstrate no residual radiological activity.

Field observations indicated that only two pasture areas remained that were relatively undisturbed, potentially exhibited soil representative of the pasture, and were available for sampling. One area was within a pasture south of the former 141-C and 145-F Buildings, and the second area was within a pasture north of the former 141-T Building.

Confirmatory sampling at the site was conducted on November 19, 2007. A statistical sample design was selected for confirmatory sampling because the distribution of potential residual soil contamination was uncertain. Historical documents indicated strontium-90, iodide-131, isotopes of plutonium, cesium-137, and other radioisotopes were used in the animal exposure studies. Therefore, the contaminants of potential concern for this soil investigation included radionuclides evaluated using laboratory analytical methods for gamma-, beta-, and alpha-emitting radionuclides. The analytical results indicated no residual radiological activity above background activity or exceeding cleanup criteria.

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The complete laboratory results are stored in the WCH Environmental Restoration project-specific database prior to submitting to the Hanford Environmental Information System for archiving and are provided in Appendix A of the RSVP.

The results of confirmatory sampling illustrate that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The results of confirmatory sampling were used to make reclassification decisions in accordance with the TPA-MP-14 procedure. In accordance with this evaluation, the confirmatory sampling results support a reclassification of this site to No Action.

Code:	100-F-55	Classification:	Accepted
Names:	100-F-55; 1607-F7 Contaminated Ash Layer	Reclassification:	Interim Closed Out (12/22/2011)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site has been remediated. The ash layer was discovered during 1607-F7 sampling activities. The site consisted of a black layer of ash approximately 0.3 meters (1 foot) below the ground surface north of the 1607-F7 septic system, near the former 141-M building.		
Location:	The ash layer was observed in a trench near the 1607-F7 Septic System, approximately 0.3 meters (1 foot) below grade.		
Related Sites/ Structures:	The ash layer is unrelated to the 1607-F7 Septic System.		
Waste Type:	Soil		
Waste Description:	The waste is a contaminated ash layer. The only known contaminant of potential concern is hexavalent chromium.		
Closure Info:	100-F-55 and 100-F-62 were addressed as a group. The information below documents information for the group of sites.		

Remedial action at the 100-F-55 waste site was performed from September 16 to October 7, 2010 to a depth of 0.7 meters (2.3 ft). Remedial action at the 100-F-62 waste site was performed from December 2010 to March 2011. The 100-F-62 north pipeline excavation included the removal of the pipelines to the former 1607-F7 septic tank and contained the 100-F-55 waste site excavation. From the north excavation, approximately 2 meters (7 ft) of the 4 inch diameter vitrified clay pipe were removed, and approximately 5 meters (16 ft) of 4 inch diameter steel pipe with lead bells were removed. Verification sample results indicated additional remediation was required. Additional remediation was performed from July 29 to August 9, 2011. The center section of the north excavation was further remediated, and the entire south excavation was further remediated and expanded to the south. The final north excavation depth is 2.3 meters (7.6 ft), and the final south excavation depth is 4.4 meters (14.5 ft). Additional remediation also occurred at the east staging pile area and the northeast quadrant of the south staging pile area.

Code: 100-F-56	Classification: Accepted
Names: 100-F-56; 100-F Surface Debris/Stains	Reclassification: Interim Closed Out (12/15/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:

Description: The waste site was miscellaneous discarded/abandoned materials across the 100-F Area. The waste site was divided into two subsites, 100-F-56:1, 100-F Garnet Sand Areas and 100-F-56:2, Other 100-F Surface Debris Areas. Both subsites have been remediated, so the parent site is also Interim Closed Out.

Location: The subsite areas were located throughout the 100-F Area.

Process Description: Various sizes and forms of hazardous (CERCLA) and/or dangerous (MTCA) surface debris were left during the construction, operation, decontamination and decommissioning (D), and remedial action (RA) activities at the 100-F Area.

Related Sites/Structures: Temporary and permanent 100-F Area facilities removed by remedial action or decontamination/decommissioning activities are listed in the Buildings section of the OSE report for 100-F.

Waste Type: Misc. Trash and Debris

Waste Description: The solid waste types addressed here are typically transite, lead battery residues, and treated wood including isolated railroad ties, treated power pole, and wood posts. Railroad ties in railroad beds are not addressed here.

The contaminants of potential concern relate to waste characterization for disposal of the debris. There are no significant environmental contaminants of concern for this site since the debris is expected to leave no residue during removal.

This Site has the Following SubSites:

Code: 100-F-56:1

Names: 100-F-56:1; 100-F Garnet Sand Areas

Code: 100-F-56:2

Names: 100-F-56:2; Other 100-F Surface Debris Areas

Code: 100-F-56:1	Classification: Accepted
Names: 100-F-56:1; 100-F Garnet Sand Areas	Reclassification: Interim Closed Out (12/15/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite has been remediated. The subsite consisted of two garnet sand areas. The first area was described as red garnet sand (sand blasting) with some scattered miscellaneous debris (wood, metal, glass, vitrified clay chunks). The second area was described as stained soil - garnet sandblasting. Soil and debris was removed and disposed into the Environmental Restoration Disposal Facility.

Location: One area was located 200 meters (656 ft) north of the 105-F Reactor Building and the other located was 300 meters (984 ft) south of the 105-F reactor.

Process Description: The exact process that caused the garnet sand to be located at these locations is unknown. However, garnet sand was used in sandblasting operations to clean rust, paint, and contamination from the surface of metal components. The garnet material is not a hazardous substance. However, there is contamination potential due to the paint and other materials removed by sandblasting.

Waste Type: Not Specified

Waste Description: The waste consists of potentially contaminated soil, wood, metal, glass, vitrified clay and garnet sand.

Closure Info: Remediation of the 100-F-56:1 waste subsite occurred from March 1 to April 4, 2011. Following remediation, verification sampling was conducted in July 2011. Results showed that a single sample taken from the northern excavation contained contaminant concentrations in excess of the cleanup criteria for hexavalent chromium. Further remediation was performed to excavate an additional meter in depth at that location. A new sample was collected from the original failed location in August 2011.

The soil within the 100-F-56:1 northern and southern waste subsite footprints was excavated to a depth of approximately 0.2 meters (9 in.) below ground surface (bgs). The garnet sand was mixed with soil, therefore, no clean soil in the immediate vicinity was available for backfill.

The SubSite is Part Of:

Code: 100-F-56

Names: 100-F-56; 100-F Surface Debris/Stains

Code: 100-F-56:2

Classification: Accepted

Names: 100-F-56:2; Other 100-F Surface Debris Areas

Reclassification: Interim Closed Out (6/2/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of twenty locations having stained soil and/or debris across the 100-F Area. Seventeen of the sites are the result of treated wood debris. Two of the sites have oil filters and one site has lead debris.

Location: The debris is located throughout the 100-F Area. The GPS coordinates are provided in the 100-F Orphan Sites Evaluation Report (OSR-2005-0001) and are associated with the 100-F-56:2 waste site in the WCH GIS database using the OSE-ID field.

Waste Type: Not Specified

Waste Description: The waste includes discarded oil filters, lead debris, treated wood debris, and potentially contaminated soils.

Closure Info: The WCH Field Remediation (FR) project performed remedial action and housekeeping

activities at the 100-F Area from July 2005 to March 2008. During these activities, FR found that many of the previously identified 100-F-56 waste site components appeared to have been at other sites that were remediated after the orphan sites evaluation. A total of seven locations containing wood debris (i.e., rail road ties and a wooden utility pole) at the 100-F-56:2 subsite were remediated on March 1 and 2, 2011. Remedial action activities included surface pick up only, generating less than 20 bank cubic meters (26.16 bank cubic yards) of wood debris. This debris was directly loaded for disposal at the Environmental Restoration Disposal Facility.

The SubSite is Part Of:

Code: 100-F-56

Names: 100-F-56; 100-F Surface Debris/Stains

Code: 100-F-57

Classification: Accepted

Names: 100-F-57; 190-F Process Water Pump House Debris

Reclassification: None

Type: Foundation

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1965

Description: The site consists of the remaining foundation of the demolished 190-F Process Water Pump House.

Location: The pump house and annex were directly north of the 105-F Reactor,

Process Description: The 100-F Area water treatment facilities were operated from 1945 until 1965 to provide large volumes of high quality cooling water to the 105-B Reactor. The 190-F Process Water Pump House was the final in a series of facilities that treated the raw river water before it was pumped to the 105-F Reactor. The water was transferred to underground clearwells (four 6.6 million L (1.75 million gal) tanks) located in the 190-F Process Water Pump House, where sodium dichromate was added to inhibit corrosion of the 105-F Reactor process tubes. The treated water was temporarily stored in the 190-F Process Water Pump House and pumped to the 105-F Reactor as needed.

Water was pumped from the Columbia River at the 181-F River Pump House and stored temporarily in the 182-F Reservoir. From 182-F, the water was pumped to the 183-F Filter Plant where it was treated for use as process cooling water for the 105-F Reactor. Additives for treatment of the water included chlorine, sulfuric acid (often contaminated with lead and mercury), and coagulants. The treatment process included flocculation and sedimentation process, chemical treatment, and filtration. Following coagulation and settling, the water was filtered, lime was added, and the water stored temporarily in underground clearwells.

The 190-F Process Water Pump House was the last facility in a series of facilities that treated the raw river water. Water arrived at 190-F after a flocculation and sedimentation process, chemical treatment, and filtration. At 190-F, the treated water was temporarily stored in four 6.6 million L (1.75 million gal) tanks (Clearwells), and sodium dichromate was added prior to pumping it through the F Reactor for cooling of the core and fuel. A several thousand gallon sodium dichromate storage tank was located within the facility. The facility shared a common wall on the north with the 185-F Water Treatment Plant, which later became a shop and storage facility. In 1956, an annex was added to the south of the pump house to increase the process water throughout the system. Both the pump house and the annex contained below-grade pump rooms.

Related Sites/ Structures: The 190-F Process Water Pump House was associated with the 100-F-36, 108-F Biological Laboratory, the 183-F Filter Plant, the 185-F Water Treatment Plant, the 189-F Refrigeration Building, 126-F-2, 183-F Clearwells and the 105-F Reactor Building.

and easting coordinates in Washington State Plane, South Zone.

Date Site ID NORTHING EASTING

20050314 20 147736.7 581328.4
20050316 6 147770.2 581392.2
20050411 15 146964.1 580337.8
20050411 16 146986.3 580330.7
20050411 17 146961.2 580298.6
20050413 8 147238.6 580367.9
20050413 17 147338.6 580351.3
20050413 18 147379.5 580333.7
20050421 7 146923.3 580058.8
20050421 11 146961.5 580063.5
20050421 24 147300.5 580055.7
20050421 27 147314.3 580007.0
20050425 58 147380.9 580099.6
20050425 75 147566.7 580037.8
20050425 78 147567.2 580262.2
20050425 84 147621.1 580087.5
20050504 19 147875.0 580245.6
20050512 5 147742.1 580488.0
20050513 40 147957.5 580609.6
20050513 45 148016.1 580645.2
20050513 63 148633.4 580239.0
20050413 19 147369.4 580340.3

Process Description: Surface debris waste (hazardous and/or dangerous) was tabulated for the 100-F Orphan Sites Evaluation (OSE) report to document the field results and to guide cleanup. A WIDS submittal (100-F-58) is required pending implementation of a waste control plan for the cleanup of surface debris/stains. Various sizes and forms of hazardous (CERCLA) and/or dangerous (MTCA) surface debris waste materials were left during the construction, operation, decontamination and decommissioning (D&D), and remedial action (RA) activities at the 100-F Area. During fiscal year 2005, a field walkdown of the area was conducted as a site closure screening activity. Surface debris identified as potential dangerous/CERCLA waste was precisely located and recorded using Global Positioning Satellite technology and a field logbook. For some features, additional information was obtained using digital photography. Subsequent evaluation of the collected data yielded four generic groupings of wastes: potentially asbestos containing material, lead, oil filters/oil stains, garnet (sand blasting material), and treated wood.

Originally, there were five categories of waste that were part of 100-F-56. At the request of the Remaining Sites Project, the potential asbestos containing material was moved to its own site, 100-F-58. The type of surface debris identified as either hazardous or dangerous waste materials according to CERCLA or MTCA was potentially asbestos containing material (including transite). Whereas this waste was created as a result of either operations or a site cleanup (i.e., D&D) activity, it would seem appropriate to dispose of them at the Environmental Restoration Disposal Facility under a project waste control plan. The concept for handling scattered surface debris under the Investigation Derived Waste (IDW) Strategy was presented at the June 2005 Unit Managers Meeting (UMM) and accepted at the July 2005 UMM meeting for implementation by the RA Project.

Various sizes and forms of hazardous (CERCLA) and/or dangerous (MTCA) surface debris waste materials were left during the construction, operation, decontamination and decommissioning (D&D), and remedial action (RA) activities at the 100-F Area. During fiscal year 2005, a field walkdown of the area was conducted as a site closure screening activity.

Surface debris identified as potential dangerous/CERCLA waste was precisely located and recorded using Global Positioning Satellite technology and a field logbook. For some features, additional information was obtained using digital photography. Subsequent evaluation of the collected data yielded four generic groupings of wastes, including potentially asbestos containing material, lead, oil filters/oil stains, garnet (sand blasting material), and treated wood.

Originally, there were five categories of waste that were part of 100-F-56. At the request of the Remaining Sites Project, the potential asbestos containing material was became its own site, 100-F-58. The type of surface debris identified as either hazardous or dangerous waste materials according to CERCLA or MTCA was potentially asbestos containing material (including transite). Whereas this waste was created as a result of either operations or a site cleanup (i.e., D&D) activity, it would seem appropriate to dispose of them at the Environmental Restoration Disposal Facility under a project waste control plan. The concept for handling scattered surface debris under the Investigation Derived Waste (IDW) Strategy was presented at the June 2005 Unit Managers Meeting (UMM) and accepted at the July 2005 UMM meeting for implementation by the RA Project.

Related Sites/ Structures: Temporary and permanent 100-F Area facilities removed by remedial action or decontamination/decommissioning activities are listed in the Buildings section of the Orphan Sites Evaluation report for 100-F.

Waste Type: Misc. Trash and Debris

Waste Description: The solid waste consists of scattered debris mainly in the form of transite. The debris is thought to potentially contain asbestos.

Closure Info: A total of eight locations containing ACM for the 100-F-58 waste site were remediated on March 2, 2011. Remedial action activities included surface pick-up only, generating less than 1 bank cubic meter (1.3 bank cubic yards) of potential ACM that was directly loaded for disposal at the Environmental Restoration Disposal Facility. Table 2, in the documentation attached to the reclass form, presents all remediated locations and their respective post-remediation photograph numbers, shown in Figures 2 through 9.

Code: 100-F-59

Classification: Accepted

Names: 100-F-59; Riparian Area Contamination
Originating from 128-F-2

Reclassification: None

Type: Burn Pit

Start Date:

Status: Inactive

End Date:

Description: The site consists of two areas known to contain contaminants above soil remedial action goals (RAGs). The first area was originally part of the 128-F-2 Burning Pit waste site located adjacent to the Columbia River. This portion of the site was remediated to an elevation below the ordinary high water mark (OHWM) of the river but sampling showed that metal contamination in excess of soil RAGs was present. The second area was located in riparian areas east and southeast of the 128-F-2 waste site. In January 2008, sampling of riparian areas surrounding the 128-F-2 waste site was conducted to determine the nature and extent of contamination. This area was sampled in accordance with WCH-227.

Location: The site is located in the northeast corner of the 100-F Area; approximately 30.5 meters (100 feet) east of the northeast corner of the 100F Area perimeter road which runs along the riverbank and directly east of the 107-F Retention Basin; and along the Columbia Rive, in the nearby riparian area which is occasionally under wate.

Related Sites/ Structures: 128-F-2 Burning Pit

100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The 100-F-60 waste site did not extend into the deep zone. Institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

The 100-F-60 waste site has been evaluated in accordance with the 100 Area Remaining Sites ROD and the Remedial Design Report/Remedial Action Work Plan. Confirmatory sampling was performed, and the analytical results indicate that the residual concentrations of COPCs at this site meet the RAGs and associated RAOs for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification of the 100-F-60 waste site to No Action.

Code: 100-F-61	Classification: Accepted
Names: 100-F-61; Stained Soil near 100-F-12	Reclassification: Interim Closed Out (12/22/2011)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The waste site has been remediated. It consisted of an area of stained soil discovered while excavating the 100-F-12 french drain, near 105-F.	
Location: The site was located northeast of the 105-F Reactor, approximately 30 centimeters (12 in.) east of the Electrical Equipment Room Number 1 at (E) 580460, (N) 147631 Washington State Plane.	
Closure Info: Demolition activities at this location had removed the upper portion of the 100-F-12 french drain. The french drain was then investigated by digging a test pit on October 11, 2004, to determine what structure remained and if the site was contaminated. Wood debris was uncovered just beneath the gravel surface and was identified as pieces of a power pole. A dark stain was uncovered approximately 1 meter (3.3 ft) below ground surface (bgs), along with power pole debris and asphalt. The stained soil was observed outside the red gravel exterior of the french drain and, as a result, was determined to be a discovery site (sitecode 100-F-61) and not associated with the french drain.	

Remediation of the 100-F-61 waste site began February 7, 2011, to remove the stained soil contamination. The stained soil associated with the confirmatory sampling description was located and removed. A layer of coal ash beneath the surface was removed with the excavation. Debris removed from the excavation consisted of asphalt, steel cable, steel conduit, and parts of steel pipe. All waste material was directly loaded for disposal at the Environmental Restoration Disposal Facility (ERDF). No overburden was associated with the waste site. An underground injection chamber associated with the No Action 100-F-12 french drain was removed with the excavation. Through in-process sampling of the excavated area, the 100-F-61 soil contamination was determined to extend north of the original stained soil location toward an active utility pole with overhead power lines. Remediation continued north of the existing excavation during an electrical power outage on March 24, 2011, removing contaminated soil, ash, and associated debris. The excavation was expanded toward the power pole area to the extent possible without affecting the stability of the pole. Due to remaining contamination indicated by in-process samples around the power pole, the decision was made to remove the pole and expand the excavation. The power pole was removed June 22, 2011, and the surrounding contaminated soil was excavated. On August 11, 2011, soil removal targeted the

area around the electrical equipment room and extended the excavation on the north side. The final excavation is an estimated 3 meters (10 ft) in depth.

Code: 100-F-62 **Classification:** Accepted
Names: 100-F-62; Animal Farm Septic Lines **Reclassification:** Interim Closed Out (12/22/2011)
Type: Sanitary Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site has been remediated. The site included influent pipes from the 141-M and 144-F 100-F Experimental Animal Farm (EAF) buildings. The 141-M Building vitrified clay pipe connected to the 1607-F7 septic tank and drain field. The 144-F steel pipe influent piping connected to the 100-F-31 septic tank and drain field.

Location: The Animal Farm (EAF) complex was located approximately 500 meters (0.3 miles) northeast of the 105-F Reactor.

Process Description: The 1607-F7 septic tank and drain field received sanitary sewage from the 141-M Building. The building was constructed in 1949 to provide office space and to serve as a change room for Animal Farm personnel working in the 100F Area. The EAF operations were discontinued in 1976. The 141-M building was also demolished in 1976.

A sample of the 1607-F7 septic tank contents was collected on October 6, 2004. The results indicated that the site required remediation. The septic tank and drain field was excavated between August 8 and November 30, 2005. Remediation of the 1607-F7 site was successful and it was reclassified as interim closed out. The post excavation civil survey (0100F-DD-C0309) shows the area excavated to remove the septic tank and drain field. The influent piping was not removed during the 2005 remedial action activities.

The 100-F-31 septic tank and drain field received animal and human septic waste from the 144-F Building. The building was constructed about 1960 as an L-shaped addition to the south end of the 141-F Sheep Barn. It contained an office, several laboratories, and a series of indoor/outdoor kennels. It was used for Pu-239 and Ra-226 inhalation studies first with mice, and then with dogs (BHI-00031). The 144-F facility was decontaminated and removed in 1978.

Samples of the 100-F-31 septic tank contents and stained soil were collected on October 15, 2004. The results indicated that the site required remediation. The septic tank and drain field was excavated in October 2004. Additional excavation was performed on February 6, 2006. Remediation of the 100-F-31 site was successful and it was reclassified as interim closed out. The post excavation civil survey (0100F-DD-C0309) shows the area excavated to remove the septic tank and drain field. The influent piping does not appear to have been removed by the remedial action activities. A portion of the influent piping was removed previously during the Group 4 Remedial Action (100-F-29) as shown in 0100F-DD-C0140. Approximately 13 meters (43 ft) of the influent piping was in an undisturbed area between the two excavations.

Related Sites/Structures: This was site is associated with the 1607-F7 septic system and 100-F-31 septic system and the 141-M and 144-F buildings.

Closure Info: 100-F-55 and 100-F-62 were addressed as a group. The information below documents information for the group of sites.

Remedial action at the 100-F-55 waste site was performed from September 16 to October 7, 2010 to a depth of 0.7 meters (2.3 ft). Remedial action at the 100-F-62 waste site was performed from December 2010 to March 2011. The 100-F-62 north pipeline excavation included the removal of the pipelines to the former 1607-F7 septic tank and contained the 100-F-55 waste

site excavation. From the north excavation, approximately 2 meters (7 ft) of the 4 inch diameter vitrified clay pipe were removed, and approximately 5 meters (16 ft) of 4 inch diameter steel pipe with lead bells were removed. Verification sample results indicated additional remediation was required. Additional remediation was performed from July 29 to August 9, 2011. The center section of the north excavation was further remediated, and the entire south excavation was further remediated and expanded to the south. The final north excavation depth is 2.3 meters (7.6 ft), and the final south excavation depth is 4.4 meters (14.5 ft). Additional remediation also occurred at the east staging pile area and the northeast quadrant of the south staging pile area.

Code: 100-F-63 **Classification:** Accepted

Names: 100-F-63; Animal Farm Radioactive Effluent Lines **Reclassification:** Interim Closed Out (9/26/2011)

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site includes radioactive effluent piping and process sewers at the north end of the Experimental Animal Farm (EAF).

Location: The EAF complex was located approximately 500 meters (0.3 miles) northeast of the 105-F Reactor.

Process Description: Radioactive effluent was supplied to the EAF beginning in 1945 from the 147-F pump house. The effluent was used to perform studies by exposing fish to varying concentrations of reactor cooling water effluent (BHI-00031). Radioecology experiments also took place at the EAF. Greenhouses located in the 1705-F Building were used for growing potted plants. Samples of piping and soil were collected at the 146-F Aquatic Biology Fish Ponds site (100-F-33) in September 2004 (118428). The results indicated that the northern portion of the site required remediation. Excavation of contaminated concrete, piping and soil was performed between August 5 and 8, 2005. Remediation of the 100-F-33 was successful and it was reclassified as interim closed out (129492). Portions of the effluent pipelines and process sewer that ran between the 146-F and 147-F buildings appear to be outside of the excavated area. In addition, portions of the process sewer from drains in the 1705-F building appear to be outside the excavated area. Lastly 10 m (33 ft) of the process sewer leading to the circular pond in the south half of the 100-F-33 site appears to be outside of the excavation. The drain at the head end of this sewer was sampled (J01TF8) as part of 100-F-33 test pit 3 and did not require remedial action. It is assumed that this segment was closed in place using the same information. Two other remedial action events took place in the vicinity of the piping. Portions of the piping were likely removed by these activities. Refer to CVP-2001-00002 and CVP-2001-00010 for a description of the cleanup activities.

Related Sites/ Structures: 146-F, 147-F, 1705-F

Closure Info: 100-F-51 and 100-F-63 were addressed as a group. The information below documents information for the group of sites.

In November 2007 and February 2008, confirmatory sampling of the 100-F-51 waste site was carried out during the excavation of two test pits, at the north end and southeast corner of the laboratory (WCH 2007b). Confirmatory sampling results failed to meet remedial action goals (RAGs) and indicated the need for remedial action at the 100-F-51 waste site. Confirmatory sampling was not performed for the 100-F-63 waste site; the site was added to the 100-F Area scope for remove, treat, and dispose in 2010 (WCH 2010a).

Remedial action at the 100-F-51 and 100-F-63 waste sites began on December 20, 2010, and continued through January 20, 2011. Excavation depth ranged from 0.5 to 1.5 m (1.6 to 4.9 ft) below ground surface bgs and resulted in approximately 253 bank cubic meters (BCM) (331 bank cubic yards [BCY]) of soil and debris being removed and disposed at the Environmental Restoration Disposal Facility. Approximately 330 BCM (432 BCY) of overburden soil was stockpiled to be used as backfill. The 100-F-51 and 100-F-63 waste sites debris included concrete, clay pipe, steel pipe, and asphalt. The verification sampling results support a reclassification of the 100-F-51 and 100-F-63 waste sites to interim closed out.

Code:	116-F-1	Classification:	Accepted
Names:	116-F-1; Lewis Canal	Reclassification:	Interim Closed Out (11/3/2003)
Type:	Trench	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and closed out.		
Location:	The site was located approximately 160 meters (525 feet) west-northwest of the 105-F Building then turned north to the Columbia River.		
Release Description:	Contaminated coolant from the reactor front and rear faces were known to have drained into the unit. This included reactor cooling water diverted to the Columbia River via this waste site during the Ball 3X Project in 1953. It also received reactor coolant that was diverted to the trench during reactor process tube chemical scaling activities (i.e., when chemicals were flushed through the process tubes to remove scale that had built up on their inner surfaces and during the H-558 Increased Cooling Water Flow Project and other reactor upgrade projects).		
Process Description:	The 116-F-1 Trench was commonly known as Lewis Canal. The 105-F Reactor cooling water was diverted to the Columbia River via this trench. The water flowed west from the headwall, turned northward where it intersected with the Columbia River. Two additional ditches entered the main trench laterally from the east. The north lateral ditch was 194.5 meters (638 feet) long. The south lateral ditch was 219 meters (718 feet) long. Water from the main trench entered the Columbia River without an outfall structure. The water ran across a cobble-covered beach and into the river.		
Related Sites/ Structures:	The site was related to 105-F, 182-F, 183-F, and 190-F and 189-F Buildings.		
Waste Type:	Water		
Waste Description:	The site received liquid wastes from the 105-F, 182-F, 183-F, and 190-F Buildings and decontamination wastes from the 189-F Building. Reference RHO-CD-827 lists a calculated contaminated soil volume of 2.066E+05 cubic meters (7.3E+06 cubic feet) for the 914-meter (3000-foot) length of Lewis Canal (the length described in most of the documentation for the site). Estimated radionuclide inventories are available in Stenner (1988). Soil sample results are available in Dorian and Richards (1978). The hazardous chemical inventory included sodium dichromate and sulfamic acid. Surface soil and vegetation samples were collected from the areas adjacent to 116-F-1, analyzed for radionuclide concentrations (cobalt-60, strontium-90, cesium-137, plutonium-238, plutonium-239/240), and compared with the results from 1981 through 1986 (Jacques 1986).		
Closure Info:	Remedial action objectives and goals for the site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design		

Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

The selected remedial action included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site consist of the following: carbon-14, cesium-137, cobalt-60, europium-152, europium-154, arsenic, and hexavalent chromium.

Cleanup verification samples for the shallow zone and overburden were collected on 12/11/2002 and 1/7/2003.

At the completion of remedial action, the total excavation was approximately 24,820 meters squared (267,000 square feet) in area with a depth of approximately 4.5 meters (14.8 feet). Approximately 77,696 metric tons (70,634 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The remedial action at the 116-F-1 site has achieved the RAOs and corresponding RAGs established in the ROD (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF. These results also indicate that residual concentrations at the site, including overburden, will support future land uses that can be represented (or bounded) by a rural-residential scenario, and are protective of groundwater and the Columbia River. The 116-F-1 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code:	116-F-2	Classification:	Accepted
Names:	116-F-2; 107-F Liquid Waste Disposal Trench	Reclassification:	Interim Closed Out (3/12/2003)
Type:	Trench	Start Date:	6/4/1948
Status:	Inactive	End Date:	1/1/1965
Description:	The site was an open liquid waste trench. A 15-centimeter (6-inch), 12-gauge steel distribution pipe ran from the north end of the 107-F Basin to the north end of the trench. The length of piping inside the trench was unknown since piping was added as the trench was used and later backfilled. This site was also fed by two emergency bypass ditches that connected the 116-F-2 trench to the effluent line connected to the south end of the 107-F Basin. The first emergency bypass ditch, about 90 meters (295 feet) long, ran from the west center side of the 116-F-2 Trench to the gate valve on the 1.7 meter (5.6 feet) pipeline that ran to the 107-F Basin Inlet Distribution Box at the south end of the 107-F Retention Basin. A second emergency ditch bypass trench connected the 116-F-2 trench to a valve on the 107-centimeter (42-inch) diameter 105-F effluent pipeline. These ditches are also considered to be part of 116-F -2. The trench is shown on Hanford drawings H-1-70185, H-1-1522 and H-1-1540. The liquid waste and bypass trenches are visible in Hanford aerial photo 91062128-8.		
Location:	The site was located approximately 670 meters (2200 feet) east of the 105-F Reactor Building and approximately 60 meters (197 feet) east-southeast of the southeastern corner of 107-F Retention Basin.		
Process	The original trench was excavated June 4-5 1948 and used to dispose of the contaminated		

PROCESS

Description: reactor effluent from the first Hanford site fuel failure (HW-10284).

Related Sites/ Structures: The site was related to the 116-F-14 (107-F) Retention Basin and the 1.7-meter (5.6-foot) diameter pipeline exiting the south end of the Retention Basin and the 100-F-19, 100-F Reactor Cooling Water Effluent Underground Pipelines, Contaminated Underground Lines, Effluent Water System.

Waste Type: Process Effluent

Waste Description: The site received cooling water effluent from the 107-F Retention Basin during reactor outages due to fuel ruptures. During deactivation of the 105-F Reactor, the unit received overflow water from the 105-F Storage Basin via the retention basin. RHO-CD-827 lists the calculated volume of contaminated soil to be 2.5E+05 cubic meters (9E+06 cubic feet). Radionuclide inventory for 116-F-2 from Stenner (1988) lists, 0.37 curies of tritium, 0.8 curies of cobalt-60, 0.07 curies of strontium-90, 0.76 of cesium-137, 0.007 curies of plutonium-239, and 6.05 curies of europium-152. The site also has a hazardous chemical inventory that includes 60,000 kilograms (1.3E+05 pounds) of sodium dichromate. The results of four soil sample sites in the trench and four samples taken in the connecting ditch can be found in Dorian and Richards (1978).

Closure Info: In August of 2000 the site was noted as being backfilled and covered with 1.2 to 3.1 meters (4 to 10 feet) of soil (1970) and treated with defoliant to prevent vegetation growth.

The cleanup verification package (CVP-2001-00005) has documented that the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 116-F-2 site have been met as established in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

Remedial action began on November 22, 2000, and was completed on April 17, 2002. Excavation involved removing the overburden materials and underlying soil. Waste site COCs were identified through process knowledge and listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site included: carbon-14, cesium-137, cobalt-60, europium-152, europium-154, hexavalent chromium. On May 21 through May 29, 2002 cleanup verification samples from the shallow zone, deep zone and overburden were collected and analyzed for the established contaminants of concern.

At the completion of the remedial action, the total excavation was approximately 15,352 meters squared (50,367 square feet) in area with a depth greater than 4.6 meters (15 feet). Approximately 113,007 metric tons (124,534 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility.

These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-F-3

Classification: Accepted

Names: 116-F-3; 105-F Storage Basin Trench **Reclassification:** Interim Closed Out (6/16/2003)
Type: Trench **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/1951

Description: The site has been remediated and closed out. The contaminated soils have been excavated, but the site has not yet been backfilled. When active, the site had been an east-west oriented open excavation. After deactivation in 1951, the basin was backfilled with soil and cobbles. It was left unmarked and was not visually discernible. No vent pipes or other appurtenances were visible.

Location: The site was located approximately 39.6 meters (130 feet) south of the 105-F Reactor Building.

Process Description: The trench received reactor cooling water during a 1947 fuel rupture occurrence. In 1951, the trench received sludge from the 105-F fuel storage basin.

Related Sites/ Structures: The site is associated with the 105-F reactor and the 105-F fuel storage basin.

Waste Type: Process Effluent

Waste Description: The site received reactor effluent from the 105-F Reactor Building during an early fuel failure outage. In 1951, the site received sludge from the 105-F Storage Basin. During test pit activities in 1993, a buried pipe measuring 150 millimeters (6 inches) in diameter was found buried in the trench at approximately 1.8 meters (6 feet) below surface grade. The pipe was radiologically contaminated reading 500 counts per minute (5000 disintegrations per minute). The contaminants of concern (COC) for this site consist of Europium-152, Europium-154 and Hexavalent chromium.

Closure Info: Remedial action at the 116-F-3 site began in October 2002. Excavation of the site involved removing the overburden materials and underlying contaminated soil. Contaminated materials were disposed of at the ERDF. At the conclusion of excavation activities in February 2003, the elevation of the bottom of the excavation was at 121.7 meters (399.3 feet).

Field screening was used to guide the excavation to quickly assess for the presence and level of contamination. Field screening for the 116-F-3 site included using a radiological data mapping system survey, hand-held sodium iodide (NaI) detectors, and gamma energy analyses. The radiological mapping survey is performed over more than 50% of the site excavation surface area. The hand-held NaI detector is used to screen excavated waste material and to screen for potential excavation wall and floor hot spots. Gamma energy analyses were used to support waste characterization and to corroborate the radiological mapping survey and hand-held sodium iodide (NaI) detector data.

Remedial action objectives and goals for the 116-F-3 site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2002). The RAGs were developed to support a rural-residential exposure scenario. This scenario involves exposures to soils less than 4.6 meters (15 feet) deep only.

The selected remedial action for the 116-F-3 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and

protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs for this site consist of Europium-152, Europium-154 and Hexavalent chromium.

Cleanup verification sampling began on January 6, 2003. Initial analytical results indicated areas of contamination, and additional remediation was completed. Following additional remedial excavation, resampling occurred on February 26, 2003. The 116-F-3 site consisted of only one shallow zone decision unit, which was divided into four sampling areas. One composite cleanup verification sample was collected from each sample area.

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the Remedial Action Goals (RAG). At the completion of the remedial action, the total area of the excavation was approximately 843 square meters (9,074 square feet) with a depth of 4.7 meters (15.4 feet). Approximately 5,205 metric tons (5,738 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the 116-F-3 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

The Cleanup Verification Package (CVP) document demonstrates that remedial action at the 116-F-3 site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established in the Record of Decision (EPA 1997) and Remedial Design Report/Remedial Action Work Plan (DOE RL 2002). The remaining soils at the 116-F-3 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-F-3 site containing contaminants of concern at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. The results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The 116-F-3 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code:	116-F-4	Classification:	Accepted
Names:	116-F-4; 105-F Pluto Crib	Reclassification:	Interim Closed Out (11/8/2001)
Type:	Crib	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1952
Description:	The site has been remediated and closed out. The unit consisted of a french drain-type distribution system. A 0.61-meter (2-foot) riser was attached to a bottomless 208-liter (55-gallon) drum that drained into a cobble leach field.		
Location:	The unit was located approximately 40 meters (130 feet) southwest of the southwestern corner of the 105-F Reactor Building		
Process Description:	The 116-F-4 Pluto Crib was an inactive waste site that operated from 1950 to 1952 receiving contaminated reactor cooling water from the 105-F Reactor building. The purpose of the crib was to receive liquid wastes from the 105-F Reactor Building during outages due to fuel ruptures. Cooling water was diverted from the affected tube through a valve known as a "pluto valve" or "pluto cap" and through a rubber hose to the crib. The hose ran above ground from the rear face of the reactor to the crib.		

Waste Type: Process Effluent
Waste Description: The site received coolant water from pressure tubes containing ruptured fuel elements. It was estimated that 280 curies of fission products were discharged to the crib during its operation (Dorian and Richards 1978). It was also assumed that the contaminated soil occupied a volume of 6 by 6 by 7.6 meters (20 by 20 by 25 feet).

Closure Info: Remedial action objectives and goals for the 116-F-4 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL 2000).

The 116-F-4 site was excavated from September to November 1993 during a soil treatability study. Before excavation activities commenced, the vertical extent of contamination was estimated using February 1993 borehole data taken from a location next to the crib riser. As a result of an onsite decision by RL, EPA, and Ecology, two 2.4 meter (8-foot) deep test pits were excavated at the bottom of the soil treatability excavation for verification sampling. Cleanup verification sampling was conducted on November 10, 1993.

The COCs for this site include the following: Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Plutonium-239/240, Strontium-90, Uranium-233/234, Uranium-238, Hexavalent chromium. Hexavalent chromium was identified as a 116-F-4 site COC in the SAP, but was not analyzed for during the 1993 treatability study. The treatability test soil samples including waste samples, however, were analyzed for total chromium and sodium. Total chromium and sodium were not detected in cleanup verification samples or waste samples at concentrations greater than Hanford Site background concentrations (18.5 mg/kg for total chromium and 690 mg/kg for sodium). Based on the 116-F-4 treatability study total chromium and sodium cleanup verification sample results and based on analogous pluto crib site information, hexavalent chromium was not considered further for the site.

The results of the verification sampling effort indicated that the materials from the 116-F-4 site containing COCs at concentrations exceeding RAGS have been excavated and disposed at the ERDF. Approximately 3,440 cubic meters (4,500 cubic yards) of soil was removed during the excavation. Over 382 cubic meters (500 cubic yards) of this material was designated contaminated soil. At the completion of the test, the clean top soil along with additional soil from a borrow pit was used to refill the excavation hole and return the surface to grade.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-F-5	Classification: Accepted
Names: 116-F-5; Ball Washer Crib	Reclassification: Interim Closed Out (8/16/2001)
Type: Crib	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1964

Description: The site has been remediated and closed out. The 116-F-5 Crib has been fully backfilled and appears today as an unmarked, gravel-covered field. No vent pipes or other appurtenances remain. The crib was fed by a 76-meter (250 foot) long vitrified clay pipeline that ran from the

105-F Reactor Building, at which point a 10.2-centimeter (4-inch) schedule 40 steel pipe was used. The pipeline was about 1.2 meters (4 feet) below grade. The vitrified clay pipe consisted of 1.2-meter (4-foot) sections. The bell ends were sealed with lead rings. The pipeline ended in a 3 by 3 by 2.7-meter (10 by 10 by 9-foot) excavation filled with cobble. Approximately 36.5 meters (120 feet) of the pipe, from 116-F-5 to the north end of the 116-F-4 excavation, was removed in 1993 during the 100 Area Excavation Treatability Test. The remaining 39.5 meters (130 feet) of pipe is part of site 100-F-26 for remedial action.

Location: The site was located approximately 50 meters (140 feet) southwest of the 105-F Reactor Building.

Process Description: The site was used to dispose of liquid decontamination wastes from the 105-F Reactor ball washer assembly. It served to clean and decontaminate small, steel-jacketed boron balls used in the Ball 3X safety system. The ball washer assembly was located in the transfer basin area of the 105-F Reactor Building.

Related Sites/ Structures: The site was associated with the 105-F Reactor Building ball washer assembly and the 100-F-26:14 Influent Pipeline.

Waste Type: Process Effluent

Waste Description: The site received liquid waste associated with the decontamination of boron steel balls. Contaminants included strontium-90, cesium-137, europium-154, and europium-155. The waste also included nitric acid that was used for decontamination. However, sampling done in 1997 found only cobalt-60 and europium-155 to be above background levels.

The Cleanup Verification Package lists the final contaminants of concern (COCs) based on the Sampling and Analysis Plan (DOE/RL-96-22) as cesium-137 and cobalt-60.

Closure Info: The cleanup verification package (CVP-2001-00007) has documented that the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 116-F-5 site have been met as established the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The COCs for this site consisted of cesium-137 and cobalt-60. As identified through process knowledge in the 100 Area Remedial Action Sampling and Analysis Plan.

A large test pit was excavated at the 116-F-5 site on July 30, 1997. Field screening and sampling of soil were conducted during excavation. The test pit excavation was an ellipse approximately 6.1 meters by 7.3 meters (20 feet by 24 feet) by 3.4 meters (12 feet) in depth. During test pit excavation, the entire 3-meter (10-foot) by 3-meter (10-foot) by 2.7-meter (9-foot)-deep crib structure (gravels) was excavated, field screened, and sampled. No contaminated materials or soil were encountered. Verification samples were collected from the test pit on July 30, 1997. The site investigation and the CVP demonstrate that the 116-F-5 site meets the established RAOs and corresponding RAGs.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 116-F-6

Classification: Accepted

Names: 116-F-6; 1608-F Liquid Waste Disposal Trench; 105-F Cooling Water Trench **Reclassification:** Interim Closed Out (11/3/2003)

Type: Trench **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1965

Description: The site has been remediated and closed out. The site was an open excavation used to receive reactor cooling water.

Location: The site is located about 55 meters (180 feet) southeast of the southeastern corner of the 105-F Building.

Process Description: The site was used intermittently to dispose of cooling water while maintenance and repairs were being performed on the effluent system. Dorian and Richards (1978) refer to the 116-F-6 Trench as the "1608-F Liquid Waste Disposal Trench", suggesting that the 1608-F Pumping Station wastes were disposed at this site. Several other documents, including Gano and Hall (1987), Hanford Drawing H-1-15244, and Kiser (1988) also use this nomenclature for 116-F-6. Hanford drawing H-1-70185 shows a "crib" pipe emerging from the east side of 1608-F and angling south toward 116-F-6. A ground penetrating radar (GPR) survey done in 1993 identified a linear anomaly that may represent this pipe.

Related Sites/ Structures: The site intermittently received cooling water from the 105-F Reactor Building.

Waste Type: Process Effluent

Waste Description: The site received water diverted during reactor shutdowns when maintenance was necessary on the effluent system. This practice was used during several reactor upgrades. Contaminants would include, europium-152, cobalt-60, europium-154, cesium-137, and sulfamic acid (3,000 kilograms [6600 pounds]).

Closure Info: Remedial action objectives and goals for the 116-F-6 site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

The selected remedial action for the 116-F-6 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site consist of the following: cesium-137, cobalt-60, europium-152, europium-154, strontium-90, hexavalent chromium.

Cleanup verification samples were collected from the shallow zone (HEIS sample numbers J008F0 to J008F9) and the deep zone (J008D1 to J008D7) on November 25, 2002 and January 6, 2003.

At the completion of the remedial action, the total excavation was approximately 5,272 meters squared (56,747 feet) in area with a depth of 4.6 meters (15 feet). Approximately 32,156 metric

tons (35,446 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The CVP demonstrates that remedial action at the 116-F-6 site has achieved the RAOs and corresponding RAGs established in the ROD (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 116-F-6 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-F-6 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-F-6 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code:	116-F-7	Classification:	Accepted
Names:	116-F-7; 116-F-7 Seal Pit Water Crib and Pipeline; 117-F Crib and Pipeline	Reclassification:	No Action (11/14/2005)
Type:	Crib	Start Date:	1/1/1960
Status:	Inactive	End Date:	1/1/1965
Description:	The site consisted of subsite 1) crib and 2) pipeline that has been filled with gravel and covered with clean soil. The pipeline originated at the 132-F-5 (117-F Filter Building) and terminated at the crib site.		
Location:	The site was located 137 meters (450 feet) south of the southwestern corner of 105-F Building.		
Process Description:	The crib was used to dispose water collected in exhaust system filter seal pits in the 117-F Ventilation Exhaust Filter Building (132-F-5). The 117-F facility filtered ventilation air from the confinement zone of the 105-F Reactor Building prior to its discharge to the atmosphere through the 105-F Reactor Building Stack.		
Related Sites/ Structures:	The site was associated with 132-F-5 (117-F Filter Building) and 116-F-7 Seal Pit Water Crib.		
Waste Type:	Process Effluent		
Waste Description:	The site received drainage from confinement exhaust system filter seal pits in the 117-F Building.		
	UNI-946 states that boring 7-A appears to have been drilled very close to the center of the crib and a sample was collected at a depth of 3 meters (10 feet). Analysis of this material shows concentrations of 0.032 picocuries/gram for cesium-137, 0.057 picocuries/gram for strontium-90, 0.1 picocuries/gram for plutonium-239/240, and 0.26 picocuries/gram for europium-152.		

This Site has the Following SubSites:

Code:	116-F-7:1
Names:	116-F-7:1; 117-F Crib; 116-F-7 Crib; 116-F-7 Seal Pit Water Crib
Code:	116-F-7:2
Names:	116-F-7:2; 117-F Crib Pipeline; 116-F-7 Crib Pipeline; 116-F-7 Seal Pit Water Crib Pipeline

Code:	116-F-7:1	Classification:	Accepted
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Names: 116-F-7:1; 117-F Crib; 116-F-7 Crib; 116-F-7 Seal Pit Water Crib **Reclassification:** No Action (2/15/2005)

Type: Crib **Start Date:**

Status: Inactive **End Date:**

Description: Subsite 1 consisted of the 116-F-7 Seal Pit Water Crib. The crib was marked by a 122 cm (48 in) diameter steel vent pipe. The bottom was about 5.2 m (17 ft) below grade and was 6.1 m (20 ft) square. The steel vent marking the site was located in one corner of the crib and was placed on a concrete slab 1.8 m (6 ft) square by 20 cm (8 in) thick. The vent itself was constructed of 91 centimeter (36 in) steel pipe. A distribution piping system of 15 cm (6 in) perforated asbestos cement pipe, forming a cross, lies just beneath a polyethylene vapor barrier about 0.6 m (2 ft) below grade. The feed pipe was 10.16 cm (4 in) cement asbestos pipe. The remainder of the crib was filled with washed river-run gravels (H-1-19825).

Location: The site was located 137 m (450 ft) south of the southwestern corner of 105-F Building.

Waste Type: Not Specified

Waste Description: The waste would be the crib structure and soil contaminated from the material entering the crib via the pipeline.

Closure Info: A site evaluation was conducted as part of the Remaining Sites Verification Package (RSVP) attached to the Reclassification Form 2004-128 through field observations and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present.

One test pit was excavated to the bottom of the seal pit water crib structure. Four samples were collected at the site on October 12, 2004: a sample from nonfriable asbestos-cement pipe, a main sample and duplicate sample in the native soil below the gravel, and an equipment blank sample.

Contaminants of potential concern (COPCs) for this site were identified from historical information. The contaminants were carbon-14, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, uranium-234, uranium 235, uranium-238, hexavalent chromium, mercury, lead, semivolatile organics, and volatile organics (DOE/RL-96-17, Rev. 5). Based on further site-specific evaluation, plutonium-238, plutonium-239/240, arsenic, barium, cadmium, total chromium, selenium, silver, and polychlorinated biphenyls were also included as COPCs. Composite samples were collected and analyzed for the established contaminants of concern on 10/12/04. The results from the sampling event were reported as HEIS sample numbers J01XR0 through J01XR2.

The RSVP report demonstrated that the site met the objectives for a "No Action reclassification as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) (EPA 1999). The report also documented that the site soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

The SubSite is Part Of:

Code: 116-F-7

Names: 116-F-7; 116-F-7 Seal Pit Water Crib and Pipeline; 117-F Crib and Pipeline

Code: 116-F-7:2

Classification: Accepted

Names: 116-F-7:2; 117-F Crib Pipeline; 116-F-7 Crib Pipeline; 116-F-7 Seal Pit Water Crib Pipeline **Reclassification:** No Action (11/14/2005)

Type: Crib **Start Date:**

Status: Inactive **End Date:**

Description: Subsite two consisted of the waste transfer pipeline. The pipeline originated at the 132-F-5 (117-F Filter Building) and terminated at the 116-F-7 Seal Pit Water Crib.

This 10-centimeter (4 inch) diameter transite pipeline was used to transfer water from the 132-F-5 (117-F Filter Building) sump pump discharge to the 116-F-7 Seal Water Crib about 168 meters (550 feet) south of the building. The pipeline drained into a perforated distributor pipe in the 116-F-7 crib, a total distance of about 185 meters (607 feet). The vented pipeline was fed from a sump pump and sloped for gravity drain with an average depth of about 1.5 meters (5 feet) below grade.

Location: The pipeline ran south from the 132-F-5 filter building to the 116-F-7:1 seal pit crib.

Waste Type: Not Specified

Waste Description: The waste consists of the piping, and underlying soil.

Closure Info: The 132-F-5 (117-F Filter Building) was reclassified as "No Action" based on a ResRad evaluation of the Allowable Residual Contamination Level (ARCL) information. The 116-F-7 Seal Pit Water Crib was closed with a "No Action" WIDS reclassification based on biased (worst case) sampling data for the soil in the crib. No significant contamination was found in the verification samples. There was no significant scaling or radiation detected during the inspection of the crib influent piping.

The 132-F-5 Filter Building and the 116-F-7 Seal Pit Water Crib waste sites have been remediated and reclassified to "No Action".

The fine soil at the top of the crib soil column had greater sorption capabilities for the contaminants of potential concern than either the 4-inch to 6-inch cobble fill in the Crib or the transite piping. The 116-F-7 influent pipeline was made of asbestos-cement which had less surface area than surface soils and did not adsorb ionic contaminants nor filter as effectively as fine soil particles. The soil analyses showed the crib and its internal piping met the cleanup standards. Because the pipeline was composed of the same material as in the crib and was exposed to the same waste stream, by analogy, the pipeline is also a candidate for "No Action" WIDS reclassification.

The absence of either detectable radiation reading or pipeline scaling indicates a low risk of significant contamination within the pipeline. The influent pipe is deemed to be a lower risk for contamination than within the crib since it has a lower sorptive or filtering capability. As such, the influent pipeline is recommended for acceptance as a "No Action" waste subsite of the 116-F-7 crib.

The SubSite is Part Of:

Code: 116-F-7

Names: 116-F-7; 116-F-7 Seal Pit Water Crib and Pipeline; 117-F Crib and Pipeline

Code: 116-F-8 **Classification:** Accepted

Names: 116-F-8; 1904-F Outfall Structure **Reclassification:** Interim Closed Out (9/25/2006)

Type: Outfall **Start Date:** 1/1/1945

Status: Inactive

End Date: 1/1/1965

Description: The site has been remediated and interim closed. This site consisted of an open-topped, compartmentalized, reinforced concrete outfall structure. A 183 centimeter (72 inch) diameter steel retention basin pipeline entered the south face; and two 107 centimeter (42 inch) pipelines exited the north face to the river.

Location: The site was located approximately 214 meters (700 feet) northeast of the 107-F Retention Basin, near the shore of the Columbia River.

Process Description: The outfall was designed as an open concrete structure for discharging reactor effluent cooling water from the 116-F-14 (107-F Retention Basin) to the center of Columbia River via 100-F-39 river pipelines. The outfall was constructed of a reinforced, compartmentalized concrete weir box, with walls extending from 7.6 meters (25 feet) below grade and 0.3 meters (1 foot) above grade. This unit was also connected to the Pacific Northwest Laboratory (PNL) Outfall (116-F-16) by a distribution box. The north effluent discharge consisted of two 107 centimeter (42-inch) diameter pipes. The second was a spillway flume (100-F-42) that ran from the outfall chamber, down the riverbank, and emptied into the river. The flume was constructed of reinforced concrete and was 4 by 0.6 meters (14 by 2 feet) deep and about 40 meters (130 feet) long. The spillway was designed to prevent excessive backwater at the 107-F Retention Basin during high water or in the event of a blockage of the outfall lines. Piping for the 116-F-8 outfall included two 107 centimeter (42 inch)-diameter by 139 meter (455 feet) steel effluent pipelines that exited the northeast side of the outfall and extended into the Columbia River. Two pipelines entered the south side of the outfall from the 107-F Retention Basin. One was a 152 centimeter (60 inch) diameter pipe. The other was a 91 centimeter (36 inch)-diameter pipe.

Related Sites/Structures: The site was associated with the 116-F-14 (107-F Retention Basin) and the 116-F-16 Pacific Northwest Laboratory (PNL) Outfall Structure. The outfall discharged effluent to the 100-F-39 River Effluent Pipelines and/or 100-F-42 Flume.

Waste Type: Construction Debris

Waste Description: Reactor water from the 107-F Basin was piped to the outfall structure that discharged into the Columbia River. The outfall could have also received reactor water that had been diverted for fish studies and other process wastes from the Experimental Animal Farm.

Contaminants of concern include cobalt-60, europium-152, europium-154, europium-155, and hexavalent chromium. Other contaminants of potential concern include carbon-14, cesium-137, nickel-63, and strontium-90.

Closure Info: 116-F-8 and 100-F-42 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2006-038) documented that the 116-F-8 and 100-F-42 waste sites have met the objectives for interim closure. The remedial action objectives (RAOs) and remedial action goals (RAGs) for these sites were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The 100-F-42 Spillway was administratively separated from the 116-F-8 Outfall for inclusion within the Remaining Sites ROD by agreement among the Tri-Parties. It was subsequently determined that sufficient evidence existed to warrant remedial action during remediation of the 116-F-8 waste site, therefore both waste sites were remediated and evaluated as a single unit.

The waste site Contaminates of Concern (COCs) were based on the list presented in the

Remaining Sites ROD, as expanded in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) for the 116-F-8 waste site. The COCs included: cobalt-60, europium-152, europium-154, europium-155, and hexavalent chromium. Cesium 137 was also included as a COC due to analytical detections within verification samples.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site COCs; screening levels were not exceeded. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which included a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decisions for the 116-F-8 and 100-F-42 waste sites.

Remedial action activities at the waste sites were conducted from August 31, 2004, to September 22, 2005. Remediation involved excavation and staging of clean overburden material and removal of the demolished concrete outfall structure, the concrete spillway structure above the Columbia River ordinary high water mark, and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. The residual 100-F-39 effluent pipelines will be sealed with concrete prior to backfill of the remediation footprint. Contaminated materials were disposed at the ERDF.

Final cleanup verification sampling was conducted from February 9 to 26, 2006, following variance analyses. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as required per the SAP. Each verification sample was composed of a composite sample formed by combining soil collected at the required number of randomly selected locations within each sampling area (excluding the quality assurance/quality control samples).

Due to their immediate proximity and historic functional relationship, the 116-F-8 and 100-F-42 waste sites were combined into one unit for the purposes of decision unit stratification.

The cleanup verification sample analytical data were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System. The sampling information was also included in Appendix A of the RSVP.

Approximately 1,325 meters squared (14,260 square feet) of plan area was excavated, including excavation within the deep zone (greater than 4.6 meters [15 feet] below ground surface) up to 8 meters (26 feet) below ground surface. Approximately 4,900 metric tons (5,400 U.S. tons) of material from the sites was removed and disposed at the ERDF.

The results of verification sampling demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also showed that residual contaminant concentrations were protective of groundwater and the Columbia River. The results of deep zone verification sampling also showed that residual deep zone contaminant concentrations met the requirements for unrestricted direct exposure; accordingly, no institutional controls are required for deep zone soils.

Code: 116-F-9	Classification: Accepted
Names: 116-F-9; Animal Waste Leaching Trench	Reclassification: Interim Closed Out (10/16/2002)
Type: Trench	Start Date: 1/1/1963
Status: Inactive	End Date: 1/1/1976
Description: The site has been remediated and closed out. The site was a leaching trench that received waste	

*	water from the cleaning of animal pens in the Experimental Animal Farm. The pipelines that originated at the 141-C Building and terminated at the trench are documented in 100-F-29.
Location:	The site was located approximately 46 meters (150 feet) northeast of the 107-F Retention Basin.
Release Description:	An unplanned release that occurred in 1955 created what was known as the "basin leak ditch". This release formed a ditch that crossed the animal waste trench site from west to east.
Process Description:	During the time that Experimental Animal Farm was active, animal pens housed the animals used for experimental purposes. When the pens were cleaned, waste water containing animal wastes was flushed to the 116-F-9 Animal Waste Leaching Trench.
Related Sites/ Structures:	The site received wash waste water from the 141-C Animal Barn and the 141-N Animal Waste Collection Facility. Pipelines to the trench are included in site 100-F-29 100 F Experimental Animal Farm Process Sewer Pipelines.
Waste Type:	Soil
Waste Description:	Contaminants found during sampling in 1979 included cesium-137, cobalt-60, europium-152, europium-154, europium-155, strontium-90, plutonium-238, plutonium-239/240. The total estimated radioactive inventory (1979) of the 116-F-9 Animal Leach Trench contaminated soil column was 4.1 curies (See Memorandum from V. R. Richards to J. J. Dorian).
Waste Type:	Animal Waste
Waste Description:	The site received wash waste water from the cleaning of animal pens.
Closure Info:	Remedial action objectives and goals for the 116-F-9 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).
	Remedial action at the 116-F-9 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.
	Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of remedial action, the total excavation was approximately 5,484 square meters (59,029 square feet) in area with a maximum depth of about 5.7 meters (19 feet). Approximately 49,405 metric tons (54,460 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.
	For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/ RL-96-22). The COCs for this site consist of the following: carbon-14, cesium-137, cobalt-60, europium-152, strontium-90 and hexavalent chromium.
	Results of the sampling, laboratory analyses, and data evaluations for the 116-F-9 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Cleanup verification sampling for the deep and shallow zones was done on April 1 and April 10, 2002, respectively. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods, as required per the SAP.

The remedial action at the 116-F-9 site has achieved the RAOs and corresponding RAGs established in the approved Amendment to the Interim Action ROD (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 116-F-9 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-F-9 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 ft]) are required. The 116-F-9 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code:	116-F-10	Classification:	Accepted
Names:	116-F-10; 116-F-8; Perf Decontamination Drain; 105 Dummy/Perf Decontamination Crib; 105-F Dummy Decontamination French Drain	Reclassification:	Interim Closed Out (6/14/2003)
Type:	French Drain	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and closed out. The site consisted of a vitrified clay pipe placed in the ground vertically with approximately 3.0 meters (10 feet) of sand and gravel beneath the tile. The site also included a 10.16-centimeter (4-inch) steel feed pipeline located about 1.2 meters (4 feet) below grade. This pipeline terminated at the "Wash Pad" located in the southeast corner of the 105-F Building fuels storage basin.		
Location:	The site was located approximately 50 meters (140 feet) south of the 105-F Building.		
Process Description:	The 116-F-10, 105-F Dummy Decontamination French Drain was used to dispose of decontamination fluids derived from the decontamination of dummy fuel element spacers and other reactor hardware.		
Related Sites/ Structures:	The site was associated with the 105-F Building.		
Waste Type:	Process Effluent		
Waste Description:	The site received radioactive water rinses and spent nitric acid from the decontamination of fuel element spacers and other reactor hardware, primarily pressure tube caps. In addition, the site received liquid waste containing 2000 kilograms (4400 pounds) of sodium dichromate, 2000 kilograms (4400 pounds) of sodium oxylate, and 2000 kilograms (4400 pounds) of sodium sulfamate. The site may have received other chemicals as well. Known decontamination solutions at 100-F included chromic acid, citric acid, oxalic acid, sulfamic acid, sulfuric acid, and sodium fluoride. Other chemicals, including organic solvents, were also used for some decontamination processes.		
	Three soil borings were drilled in the vicinity of the drain in 1975 (Dorian and Richards 1978). Boring 10-A was drilled next to the tile pipe, and borings 10-B and 10-C were completed approximately 3 meters (10 feet) and 9 meters (30 feet) east of the tile pipe respectively. Samples were collected from these borings at depths ranging from 3.8 to 8.2 meters (12.5 to 27		

feet). Analytical results indicated elevated concentrations of cobalt-60 (610 picocuries/gram), europium-152 (250 picocuries/gram), europium-154 (31 picocuries/gram), europium-155 (100 picocuries/gram), and cesium-137 (7.4 picocuries/gram) in boring 10-B. Elevated concentrations were not detected in the samples from borings 10-A and 10-C.

Closure Info: Remedial action objectives and goals for the 116-F-10 site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

The selected remedial action for the 116-F-10 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to the average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site consist of the following: cesium-137, cobalt-60, europium-152, uranium-238, total chromium, hexavalent chromium.

At the completion of remedial action, the total excavation was approximately 195 square meters (2,100 square feet) in area with a depth of approximately 4.4 meters (14.4 feet). Approximately 848 metric tons (935 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the 116-F-10 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Shallow zone cleanup verification samples were collected and reported in the CVP with the HEIS sample numbers of J00BY3 through J00BY7 and J00BY9 on December 5, 2002. However, these samples could not be located in the HEIS database.

The site also included a 10-centimeter (4-inch)-diameter steel pipeline that discharged into the french drain about 1.2 meters (4 feet) below grade. This pipeline originated at the wash pad located in the southeast corner of the 105-F Building Fuel Storage Basin. The pipe ran to the northwest 9 meters (30 feet) and then entered the 116-F-3 excavation. The 10 centimeter (4 inch) diameter steel pipeline was removed without excavation during remediation of the fuel storage basin and the 116-F-10 French Drain and 116-F-3 Storage Basin Trench waste sites. Field screening indicated there was no contamination in the pipeline, and the area was not included in the final cleanup verification sampling design. Because the two associated waste sites (116-F-3 and 116-F-10) were verified clean as shallow zone sites, and the ends of the pipes originally terminated within the boundaries of these excavations, it can be concluded that the short distance between was also clean. This strategy was approved by the regulators and used during cleanup verification of the 116-F-2 Liquid Waste Disposal Trench and its associated feed pipeline.

The CVP demonstrates that remedial action at the 116-F-10 site has achieved the RAOs and corresponding RAGs established in the approved Amendment to the Interim Action ROD (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 116-F-10 site have been

sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-F-10 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-F-10 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code: 116-F-11	Classification: Accepted
Names: 116-F-11; 105-F Cushion Corridor French Drain	Reclassification: Interim Closed Out (9/15/2003)
Type: French Drain	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1965

Description: The site has been remediated and interim closed out. A 0.9-meter (3-foot) diameter tile pipe was buried vertically with 2.5 to 5 centimeters (1 to 2 inches) extending above grade. The pipe had a metal lid.

Location: The site was located at the southeast corner of the 105-F Reactor Building.

Process Description: The cushion corridor french drain received liquid decontamination waste from the cushion corridor area of the reactor. Contaminated liquids were generated when reactor hardware was decontaminated on the concrete floor in the cushion corridor and the decontamination solutions were flushed through a floor-level wall opening drain into the french drain.

Related Sites/ Structures: The french drain was associated with 105-F reactor.

Waste Type: Process Effluent

Waste Description: The site received liquid decontamination wastes from the cushion corridor area when reactor hardware was decontaminated.

Boring 105-F-A was completed in this area in 1975 (Dorian and Richards 1978). The boring was drilled to a depth of 2.4 meters (8 feet) before terminating due to a concrete obstruction. A soil sample was collected at a depth of 1.5 meters (5 feet) and radionuclide concentrations varied from 0.01 to 5.6 picocuries per gram. Since this boring is approximately 30 meters (100 feet) away from 116-F-11, these results are not likely to be representative of soils near this waste unit.

Closure Info: 100-F-19:2, 116-F-11, UPR-100-F-1 and 100-F-29 were addressed as a group. The information below documents information for the group of sites.

The 100-F-19:2 Reactor Cooling Water Effluent Pipeline and co-located sites, (116-F-11 Cushion Corridor French Drain, UPR-100-F-1 Sewer Line Leak, and the 100-F-29 Experimental Animal Farm Pipelines), were remediated as a group and documented in CVP-2001-00003.

Remedial Action ran from August 2001 until December 2002. Verification sampling was conducted in January 2003. Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. Contaminants of concern (COCs) were C-14, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Ni-63, and Sr-90.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. The basis for reclassification was described in detail in the Cleanup Verification Package 2001-00003.

The cleanup verification package does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

Code:	116-F-12	Classification:	Accepted
Names:	116-F-12; 148-F French Drain	Reclassification:	Interim Closed Out (5/22/2002)
Type:	French Drain	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1964
Description:	The site has been remediated and interim closed out. The drain was excavated during the removal of the 100-F-19:1 effluent pipelines.		
Location:	The site was located approximately 300 feet (90 meters) north of the northwest corner of the 107-F Retention Basin (116-F-14).		
Process Description:	The 116-F-12 French Drain was used to dispose of effluent pump prime recovered from the 148-F Pumphouse.		
Related Sites/ Structures:	The site received pump prime from the 148-F Pump House and Lift Station. The 148-F French Drain was located about 2.4 meters (8 feet) east of the 148-F Pump House.		
Waste Type:	Water		
Waste Description:	This drain would have received minimal amounts of leakage or spillage from two pumps located in the facility that were used to supply reactor cooling water to the fish studies facilities. Although Stenner, et al (PNL-6456) states that the site received recovered effluent pump prime, drawings (H-1-459-VOID and H-1-1518) indicate that the site could not have received any effluent except leakage or spillage from maintenance activities on the pumps.		
Closure Info:	100-F-19:1, 100-F-19:3, 100-F-34 and 116-F-12 were addressed as a group. The information below documents information for the group of sites.		

The 100-F-19:1 North Pipelines, 100-F-19:3 West Pipelines, 100-F-34 Biology Facility French Drain, and the 116-F-12 French Drain were remediated as a group in CVP-2001-00002. These sites meet the cleanup standards specified in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

The site remedial action began on August 7, 2001. Excavation of the site involved removing overburden materials, pipelines, french drain structures, and contaminated soil. Cleanup verification sampling began on September 7, 2001, and was finished on September 25, 2001. The results showed that the materials from the 100-F-19:3 subsite containing COCs at concentrations exceeding RAGs have been excavated and disposed of.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. All cleanup verification samples for the 100-F-19:3, 100-F-34 and 116-F-12 sites are listed under 100-F-19:1.

Code: 116-F-14	Classification: Accepted
Names: 116-F-14; 107-F; 107-F Retention Basin	Reclassification: Interim Closed Out (7/12/2002)
Type: Retention Basin	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1965

Description: The site has been remediated and closed-out. The retention basin was a rectangular, concrete-lined, open-top reservoir designed to retain reactor cooling water prior to being discharged to the Columbia River. The basin had an estimated capacity of 5.67E+08 liters (1.5E+08 gallons). It was divided into two equal sections by weir walls running lengthwise from inlet to outlet end. Each section was subdivided by a series of wooden baffles. The site was surrounded by sprinklers (Hanford Drawing H-1-14321) installed on the top of the wall to keep the sludge from drying out during those times when effluent was not being discharged to the basin.

Location: The site was located approximately 530 meters (1488 feet) east-northeast of the 105-F Reactor Building.

Release Description: Numerous instances of retention basin and pipeline leakage occurred during the operation of the basin resulting in areas of soil contamination. The basin leaked at many locations along its walls and bottom. Hanford Drawing H-1-70247 (Retention Basin Leak Repair) shows some of the many types of repairs performed on the basin, including repairs of vertical cracks in the basin walls, removal of spilled concrete, rebuilding of expansion joint and repairs of cracks in the floor of the basin. The largest recorded leak extended roughly 7.6 meters (25 feet) from the foot of the unit wall. The leak, discovered in the summer of 1952, occurred in the effluent lines leading from the basin to the 148-F Pumphouse. Another release of contamination occurred at a large manhole located north of the 107-F basin (identified as P-22F on Hanford Drawing H-1-13850). Effluent overflowed intermittently for an extended period during the early 1950's before it was stopped. In 1955, water overflowed from the basin and contaminated the soils adjacent to the basin and a narrow path between the basin and the Columbia River. This release was identified as UPR-100-F-2. Contamination levels were 20,000 to 60,000 counts per minute with a maximum of 350 millirads/hour. HW-54636 contains information regarding the ground contamination size and shape. At least once during reactor operations, an unknown quantity of sludge was removed from the bottom of the basin and buried approximately 30.5 meters (100 feet) southeast of the southeastern corner of the basin. An estimated 1.8E+06 kilograms (2,000 tons) of sludge remained in the retention basin (Dorian and Richards 1978). In 1952, a hole was dug adjacent to the basin inlet pipe to drain the pipe. The hole and associated soil contamination were stabilized by covering it with clean soil, gravel, and cobbles. In 1964, high winds spread contamination when the basin was emptied and dry for maintenance. Known leakage from the 116-F-14 basin appears to have occurred primarily along the south and west sides. Estimates of leakage rates are not well documented, but the presence of a groundwater mound beneath the basin extended as high as 3 meters (10 feet) above the pre-existing water table elevation, suggests that significant leakage had occurred (Dorian and Richards 1978). The extent of these releases were contained within the AC-5-40 permanent Underground Radioactive Material posting.

Process Description: The site was used as a retention basin to hold the discharged reactor water for a brief period of time, allowing radioactive decay and thermal cooling to occur before the water was discharged to the Columbia River. Effluent was discharged to the basin by way of pipelines that were partially underground and partially above ground. The site received essentially all reactor cooling water passing from the reactor to the Columbia River. The total volume has not been estimated, but the flow rate ranged between 1.55E+05 and 2.95E+05 liters (41,000 and 78,000 gallons) per minute. Water flowed from the north end of the basin through a concrete pipeline to the 116-F-8 Outfall. The site is shown on Hanford drawings H-1-1522, M-1600-F, W-73199, W-69714 and Photo 9005316-1cn.

Related Sites/ Structures: The site was associated with the 105-F Reactor Building, the 100-F-19 pipeline and the 116-F-2 overflow trench.

Waste Type: Water

Waste Description: This site received cooling water effluent from the 105-F Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Seventy percent of the total radionuclide inventory was contained within the soil adjacent to the basin.

Waste Type: Demolition and Inert Waste

Waste Description: This site received cooling water effluent from the 105-F Reactor and held it to allow radioactive decay and thermal cooling prior to releasing the effluent to the Columbia River. Approximately 10 curies of radioactivity had leached into the concrete floor and walls.

Closure Info: Remedial action objectives and goals for the 116-F-14 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE RL 2001b).

The selected remedial action at the 116-F-14 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001a). The COCs for this site consist of carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, strontium-90, chromium (total), hexavalent chromium and cobalt.

Site excavation and waste disposal were completed on January 16, 2002, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 20,039 m² (215,698 ft²) in area with a depth greater than 4.6 m (15 ft). Approximately 212,015 metric tons (233,707 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility. Results of the sampling, laboratory analyses, and data evaluations for the 116-F-14 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Cleanup verification sampling began in the shallow zone on October 29, 2001, and deep zone sampling occurred on September 17, 2001. Initial results indicated areas of contamination, and additional remediation was performed. Following additional remedial excavation, resampling events occurred on December 17, 2001, and January 16, 2002, in the shallow zone. Verification sample results for some COCs were replaced with resampling data and used in calculations for this site.

The remedial action at the 116-F-14 site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1997) and RDR/RAWP (DOE-RL 2001b). The remaining soils at the 116-F-14 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-F-14 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations

throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 ft]) are required. The 116-F-14 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code: 116-F-15	Classification: Accepted
Names: 116-F-15; 108-F Radiation Crib	Reclassification: Interim Closed Out (5/24/2007)
Type: Sump	Start Date:
Status: Inactive	End Date:

Description: The site has been remediated and interim closed. The site consisted of a floor drain that emptied into a 0.91 by 0.91 by 0.91-meter (3-by 3-by 3-foot) concrete sump that then emptied into a trench, near the center and under the 108-F Radiobiology Laboratory Building first floor.

Location: The site was located under the excavation of the 108-F Building (site 100-F-36).

Process Description: The trench drained from both ends into a sump located in approximately the center of the trench. Many laboratory floor and hood drains were connected to the trench and sump. The trench and sump were covered with plywood and posted as radioactive. A 15-centimeter (6-inch) earthenware (vitrified clay) pipeline exited the sump and the building to the south. A continuation drawing (W-2934, sheet 5) that would show the route and destination of the pipeline was no longer available. Hanford Drawing H-1-2037 showed a 20-centimeter (8-inch) vitrified clay tile pipe that ran south, then east, from the western side of 108-F to the ash pit. Although there was no clear connection between the sump and the pipelines known to run to the ash pit, there was a strong possibility they were interconnected. Several documents that would have likely discussed this site, if it was a crib, do not make such a reference. These documents included Herman, Stenner et al, (1988), Kiser (1988), and Clukey (1954, 1956). The noted omission from acknowledged texts casts doubt on the existence of this waste site as a crib.

Related Sites/Structures: The sump received effluent from the 100-F-36 site glove boxes and floor and hood drains. The sump then emptied into a trench that had the same WIDS site code.

Waste Type: Process Effluent

Waste Description: Prior to 1996, the unit had not been sampled for radiological or chemical contamination. It was known that alpha contamination experiments were conducted in the 108-F Building. The sump was reported to have received liquid wastes from the 108-F Building sinks, glovebox drains, and ventilation hoods. Alpha contamination experiments were conducted at the 108-F Building, therefore the potential for alpha contamination of this waste site exists.

Closure Info: 100-F-36 and 116-F-15 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package for 100-F-36 and 116-F-15 (RSVP-2007-002) has documented the reclassification of the co-located sites. The 100-F-36, 108-F Biological Laboratory waste site has met the objectives for No Action and the 116-F-15, 108-F Radiation Crib waste site has met the objectives for Interim Closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Remediation of the 116-F-15 waste site was performed on September 26, 2005, and consisted

of the removal of approximately 86 metric tons (95 US tons) of material, including concrete debris, piping, and soil. The material was disposed at the Environmental Restoration Disposal Facility. The soil was excavated and field surveyed to a depth of approximately 2.6 meters (8.5 feet).

Following excavation, verification sampling was performed. Contaminants of potential concern (COPCs) were combined because the sites were co-located within the boundary of the 100-F-36 waste site. Each confirmatory and verification sample was analyzed for all constituents. The combined list of COPCs identified in the RDR/RAWP included the following: cobalt-60, cesium-137, europium- 152, europium- 154, europium- 155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, inductively coupled plasma metals, mercury, hexavalent chromium, polychlorinated biphenyls, and asbestos.

After the remediation, verification sampling of the waste site was performed on December 12, 2006. All sample data results were stored in the Environmental Restoration (ENRE) project-specific database prior to being archived in the Hanford Environmental Information System (HEIS) and summarized in appendix B of the RSVP.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for contaminants of potential concern and other constituents. Screening levels were not exceeded for either site constituents, with the exception of boron, mercury, and vanadium.

Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of these constituents does not pose a risk to ecological receptors because concentrations of vanadium and mercury are below site background levels and boron concentrations are consistent with those seen elsewhere at the Hanford Site (no established background value is available for boron). A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

The results of sampling indicated that residual contaminant concentrations did not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep).

The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. Remedial actions were not required for deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The results indicated compliance with the remedial action objectives and goals for the site. The results of the sampling data were used to make reclassification decisions for the site in accordance with the TPA-MP-14 procedure.

The results indicated compliance with the remedial action objectives and goals for these sites. The results of the sampling are used to make reclassification decisions for the 100-F-36 and 116-F-15 sites in accordance with the TPA-MP-14 (DOE-RL 2007) procedure.

Code: 116-F-16	Classification: Accepted
Names: 116-F-16; PNL Outfall	Reclassification: Interim Closed Out (9/14/2006)
Type: Outfall	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed. This site consisted of an open-topped,	

	compartmentalized, reinforced concrete outfall structure.
Location:	The site was located approximately 670 meters (2200 feet) northeast of the 105-F Reactor Building and about 15 meters (50 feet) upstream of 116-F-8 outfall.
Process Description:	Animal Sewage and low-level contamination resulting from various Experimental Animal Farm projects, were pumped to the river via the 116-F-16 outfall structure and associated 100-F-43 spillway (flume). The site was a concrete outfall structure that received effluent from the experimental animal farm and aquatic biology laboratory. The Outfall emptied into the 100-F-43 Spillway via direct discharge then into the Columbia River. This unit was connected to the 116-F-8 Outfall Structure by a distribution box. A 183 centimeter (72 inch) diameter pipe extended from the north side of the 107-F Retention Basin, through a diversion box and connected to the south side of the outfall.
Related Sites/ Structures:	The site was associated with 100-F-29 (100-F Experimental Animal Farm Process Sewer Pipelines), 100-F-19, 100-F Reactor Cooling Water Effluent Underground Pipelines, Contaminated Underground Lines, Effluent Water System, 1904-F Process Sewer (See Subsites), the 116-F-8 Outfall Structure, 100-F-43 Flume and 100-F-39 River Lines.
Waste Type:	Construction Debris
Waste Description:	The unit received animal sewage from various Experimental Animal Farm projects, 107-F Retention Basin water from fish studies, and low-level contamination. The COPCs include Plutonium-239/240, Strontium-90, Cesium-137, Lead, and hexavalent chromium.
Closure Info:	116-F-16 and 100-F-43 were addressed as a group. The information below documents information for the group of sites. The 100-F-43 waste site was administratively separated from the 116-F-16 waste site for future inclusion within the Remaining Sites Record of Decision by agreement among the Tri-Parties. It was subsequently determined that sufficient evidence existed to warrant remedial action of both waste sites as a single unit. All samples collected during remediation are listed under 116-F-16 The Remaining Sites Verification Package (RSVP-2006-039) has documented that the 116-F-16 and 100-F-43 waste sites were remediated in accordance with the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD). Remedial action objectives (RAOs) and remedial action goals (RAGs) for this site were documented in the Remaining Sites ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP). Remedial action activities at the sites were conducted from August 31, 2004, to September 8, 2005. Remediation involved excavation and staging of clean overburden material and removal of the outfall, the concrete spillway structure above the Columbia River ordinary high water mark, and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. Final cleanup verification sampling was conducted on February 13 and 15, 2006. The Contaminants of Concern included: cesium-137, plutonium-239/240, strontium-90, hexavalent chromium, and lead. Approximately 384 meters squared (4,130 square feet) of plan area was excavated, with all remedial activities restricted to the shallow zone (less than 4.6 meters [15 feet] below ground surface). Approximately 2,090 metric tons (2,300 U.S. tons) of contaminated material was removed from the site and disposed at the ERDF. The cleanup verification sample data have

been summarized in Appendix A of the RSVP. The data were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System.

No institutional controls are required for this site to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].

Code: 126-F-2	Classification: Accepted
Names: 126-F-2; 183-F Clearwells	Reclassification: Interim Closed Out (5/4/2006)
Type: Dumping Area	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1965

Description: The unit consisted of covered, reinforced concrete basins (east and west), in the late 1970s, the eastern clearwell was used for the disposal of inert debris generated in the demolition of various 100-F Area buildings. The basins had a capacity of about 3.7E+07 liters (1E+07 gallons), they were separated in the center by a pump room. Part of the concrete cover on both clearwells has been demolished to permit dumping into the clearwell cavity. The pump room was reinforced concrete and largely below grade. The above-ground portion of the pump room has been demolished, and the below-ground portion has been filled with pump room rubble and backfilled. Approximately 25% of the eastern clearwell basin contained waste. The west clearwell remains intact.

Location: The site was located north of the 105-F Reactor Building, at the site of the 183-F Water Treatment Facility (demolished).

Process Description: Originally, the basins were used as part of the cooling water treatment train for the 105-F Reactor from 1944 to 1965. Chemical addition to this point in the treatment train was limited to coagulants (alum and hydrated calcium oxide), pH adjustment (sulfuric acid), and chlorination. Beginning in the 1970's, this site received demolition rubble and inert waste from building demolitions. It received rubble from the 183-F, 190-F, 189-F, 185-F and 171-F buildings.

Related Sites/ Structures: The clearwells were associated with the 183-F Water Treatment Facility.

Waste Type: Demolition and Inert Waste

Waste Description: The unit now contains demolition waste from demolished facilities. This waste includes rubble from the uncontaminated portion of 115-F as well as rubble from such noncontaminated facilities as 183-F, 190-F, 189-F, 185-F, 171-F. The rubble is believed to include asbestos siding tiles from several buildings.

The site has been included in the Remaining Sites Record of Decision, and is listed as having "possible low-level radioactive waste."

Closure Info: As documented in the Remaining Sites Verification Package 2006-017 evaluation, the verification sampling results, radiological surveys, and visual inspection support a reclassification of this site to interim closed out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Site remediation was performed from July to September 2005 and consisted of the removal of debris within the eastern clearwell structure down to the concrete floor. Radiological surveys

and visual inspection of the remediated clearwell structure revealed no residual contamination on the concrete floor or sidewalls and no indication of possible contaminant migration beyond the boundaries of the clearwells. No remediation or investigation was performed at the western clearwell, as no waste materials were disposed there, and the roof of the facility remains intact.

Verification sampling was performed at the remediation waste staging area on December 14, 2005, to confirm that no residual contamination associated with excavated materials existed in surficial soils. Evaluation of the results indicated that the waste removal action achieved compliance with the remedial action objectives for the site.

The results of verification sampling show that residual contaminant concentrations in soil do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. Approximately 28,986 metric tons (31,952 U.S. tons) of material was removed and staged at an area adjacent to the clearwells before disposal at the Environmental Restoration Disposal Facility.

The deep zone portion of the eastern clearwell structure has been shown to meet direct exposure criteria; therefore, no deep zone institutional controls are required.

Code:	128-F-2	Classification:	Accepted
Names:	128-F-2; 100-F Burning Pit	Reclassification:	Interim Closed Out (12/1/2008)
Type:	Burn Pit	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	Originally, the pit was an irregularly shaped depression that was used for burning wastes. The site has been covered and appears as a flat surface with no sign of the burn pit or its contents. The pit appears to have been filled and leveled in preparation for the installation of soil sampling test well 199-F5-42.		
Location:	The site is located approximately 30.5 meters (100 feet) east of the northeast corner of the 100F Area perimeter road which runs along the riverbank. The site is located directly east of the 107-F Retention Basin.		
Process Description:	The 128-F-2, 100-F Burning Pit waste site was an irregularly shaped depression that was used for incinerating nonradioactive, combustible materials (e.g., vegetation, office waste, paint waste, and chemical solvents) from 1945 to 1965. During Hanford Site cleanup operations in the late 1970s, unknown quantities of debris were removed from the burn pit and the site was backfilled. Historical documentation suggested that multiple burn pits were present at the site, with each pit having the dimensions of 31 by 31 by 3 m (100 by 100 by 10 ft) deep. According to documentation the waste site was 46 m (151 ft) by 18 m (60 ft) and was situated on a steep grade near the shoreline of the Columbia River. During remediation activities of the burn pit the waste site footprint was expanded because additional areas requiring remediation were discovered. Excavation of the soil containing debris and ash along the bank of the river eventually extended below the OHWM.		
Related Sites/ Structures:	An area of contamination from this site was designated as a new site, 100-F-59 Riparian Area Contamination, for later remediation.		
Waste Type:	Misc. Trash and Debris		
Waste Description:	The results of confirmatory sampling were used to determine the COCs and contaminants of potential concern (COPCs) for verification sampling. Metals (including hexavalent chromium and mercury), SVOCs (inclusive of the PAHs detected in confirmatory samples), chlorinated		

pesticides, TPH, PCBs, and asbestos were considered COCs/COPCs for verification sampling. Additionally, because radiological activity was detected above background levels during confirmatory sampling, laboratory radiological analysis was performed on verification samples to verify the absence of radiological contamination.

Closure Info: The Remaining Sites Verification Package (RSVP-2008-031) has documented remediation of the area within the final boundary of the 128-F-2 waste site, the 100-F Burning Pit, which does not include area C below the ordinary high water mark (OHWM). The site meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

Remediation of the site was initially performed August through October 2005, with 21,900 metric tons (24,100 US tons) of material excavated and disposed at the Environmental Restoration Disposal Facility (ERDF). Scrap metal, concrete debris, bottles, laboratory glassware, ash, potentially contaminated soil, asbestos debris, and other miscellaneous materials were removed from the waste site. Excavated materials were sorted and segregated based on visual inspection and location of origin and then staged onsite before disposal at ERDF. Samples of soil and debris were collected as needed to support waste characterization.

Soon after the onset of remediation, an area of cultural significance was discovered in the northwestern end of the riverside excavation. An investigation of the area revealed artifacts which resulted in the area being excluded from disturbance during remediation activities and was backfilled between February 20 and February 28, 2008.

During the initial 2005 remediation activities, it was observed that debris and ash material extended beyond the excavation design boundaries of the site toward the river shoreline and appeared to be present below the OHWM. Further excavation was delayed until October 2006 to take advantage of lower flows of the Columbia River and avoid impacts to endangered Upper Columbia River (UCR) spring Chinook salmon and steelhead. Remediation continued as Phase II with the excavation of the soil containing debris and ash within the slope extending to the OHWM in October 2006. The remediation proceeded to the shoreline, leaving a low berm to protect against site flooding in the event of higher river stages. Soil samples were collected from the berm to evaluate if it could be left in place or required removal. The data showed individual samples contained levels of hexavalent chromium and lead that exceeded direct exposure RAGs and levels of barium, cadmium, chromium, copper, manganese, mercury, nickel, silver, zinc, PAHs, and PCBs that exceeded the criteria for protection of groundwater and the Columbia River.

A comparison against ecological risk screening levels was made for the site contaminants of concern and other constituents. Using a conservative approach, the highest values were summed together. Using the combined values, screening levels were exceeded for antimony, arsenic, barium, boron, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, vanadium, zinc, high molecular weight polycyclic aromatic hydrocarbons (HMW-PAHs), and DDT combined with its degradation products. Exceedance of screening values did not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of arsenic, antimony, manganese, mercury, and vanadium does not pose a risk to ecological receptors because their concentrations below site background levels. Boron concentrations were consistent with those seen elsewhere at the Hanford Site (no established background value is available for boron). If the highest value from each of the three areas was evaluated independently, then only lead, selenium, zinc, HMW PAHs, and DDT plus its degradation products would exceed the screening levels. These constituents will be evaluated in the context of additional lines of evidence for ecological effects as part of the final closeout decision for this site. For the purpose of verification sampling, the excavation boundary survey,

incorporating Phase I and Phase II excavation, was used to divide the site into five sampling areas: A. (Phase I excavated area between Columbia River and the upland excavation), B. (upland excavation), C. (phase II excavation), D. (waste staging area), and E. (asbestos-containing material [ACM] staging area).

The final verification sampling was performed in February 2007, March 2007, and March 2008 for area A; March and August 2007 for area B; and December 2007 for areas D and E to collect data to determine if the RAGs had been met. Verification data from the excavation areas A and B were evaluated independently by calculating the 95% UCL on the true population mean for residual concentrations of COPCs as specified by the RDR/RAWP. Excavation area C was combined with adjoining riparian areas to the east and southeast and assigned to a site code, 100-F-59. Evaluation of the verification data from area D was performed by direct comparison of the sample results against cleanup criteria. Evaluation of the sample results from area E was performed by direct evaluation of the amount of asbestos fibers present in the sample. Waste staged onsite during remedial activities consisted of soil and debris. The waste was completely removed and disposed at the ERDF, along with a layer of underlying soil. There was very little potential for contaminant migration into soils underlying the waste staging piles; therefore, statistical sampling designs were not warranted for the staging pile footprints and professional judgment was used to develop the sampling design.

Statistical sampling to verify the completeness of remediation was performed and analytical results for the decision units (areas A, B, D, and E) were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Accordingly, an interim closure reclassification is supported for the site. These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 132-F-1	Classification: Accepted
Names: 132-F-1; 132-F-1 Chronic Feeding Barn; 141-F; 141-F 100-F Experimental Animal Farm Sheep Barn	Reclassification: Interim Closed Out (8/23/2006)
Type: Laboratory	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed. The barn has been demolished. When in use, it was an L-shaped concrete block building with a concrete floor and concrete animal pens located both inside and outside of the building.	
Location: The 141-F (132-F-1) barn site was located in the northeast corner of the 100-F Experimental Animal Farm area. The building site was northwest of the 107-F Retention Basin (116-F-14) and south of the 1904-F Outfall Structure (116-F-8) and the Pacific Northwest Laboratory (PNL) Outfall Structure (116-F-16).	
Process Description: Studies involving sheep began in the late 1940's. Up to 1,000 head of sheep were kept in 132-F-1 Barn (141-F) for use in dose studies using iodine-131, strontium-90, plutonium-239, and cesium-137. Most of the work performed involved 20-year lifetime exposure studies. The 141-F Building was one of the main facilities used to house the animals. Animal pens in the building had concrete floors and were connected to the special sewer (100-F-29) for contaminated animal wastes. Contaminated manure and sawdust that could not be shoveled out of the animal pens were washed into the sewer which went to the 141-N Sump. When the sump became full, the wastewater was pumped through a screen to the Columbia River via the PNL	

Outfall (116-F-16). The solids trapped by the screen were dried and sent to the 118-F-5 Sawdust Pit. The Remedial Investigation/Feasibility Study Work Plan for the 100-FR-1 Operable Unit, Hanford Site, Richland, Washington states that wash water from this facility went to the 1607-F6 septic system. A review of Hanford Site historical drawings H-1-13850 (sheets 2 and 3) and M-1904-F (sheet 5) and conditions encountered during remediation of the 132-F-1 site do not indicate piping between the 132-F-1 site and the 1607-F6 septic system. The drawings show that the only outgoing line [a 15 centimeter (6 inch) vitrified clay pipe] from the building discharged into the process sewer system (100-F-29) until 1963, when wastewater was diverted to the 116-F-9 Animal Leach Trench.

Related Sites/ Structures: Drawings indicate that the effluent discharged into the process sewer system (100-F-29) until 1963 then wastewater was diverted to the 116-F-9 Animal Leach Trench.

Waste Type: Demolition and Inert Waste

Waste Description: Residual strontium-90, cesium-137, and plutonium-239 contamination may remain in any buried debris.

Closure Info: In accordance with the REMAINING SITES VERIFICATION PACKAGE FOR THE 132-F-1, 141-F CHRONIC FEEDING SHEEP BARN (Attachment to Waste Site Reclassification Form 2006-029) (RSVP) evaluation, the current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

The contaminants of potential concern (COPCs) for the 132-F-1 site were cobalt-60, cesium-137, europium 152, europium-154, europium-155, plutonium-238, plutonium-239/240, uranium-234, uranium-235, strontium 90, lead, mercury, polycyclic aromatic hydrocarbons (PAHs), and hexavalent chromium. Based on further site specific evaluation, gamma-chlordane (found during test pitting during the remedial investigation/feasibility study phase), arsenic, barium, cadmium, total chromium, selenium, silver, and polychlorinated biphenyls were included as COPCs.

Remedial excavation and confirmatory sampling was performed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan (SAP) and with WCH EE-01, Environmental Investigations Procedures, from September 27 through 30, 2004, per the approved work instruction. Excavation southeast of the former building footprint was extended up to 2.4 meters (8 feet) below ground surface (bgs) before native material was encountered, and no debris.

Strontium-90, the only constituent detected above remedial action goals (RAGs) by confirmatory sampling, was the only contaminant of concern (COC) identified for verification sampling. Because pesticide analysis was excluded for confirmatory sampling and gamma-chlordane was previously detected at a concentration above RAGs for the protection of groundwater and the Columbia River, pesticides were also considered contaminants of potential concern (COPCs) for verification sampling. Polycyclic aromatic hydrocarbons were detected at low levels in samples collected from native soil along the length of the test trench used for confirmatory sampling. Therefore, semivolatile organic compounds were also considered COPCs for verification sampling.

Confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The results were stored in the Environmental Restoration project-specific database prior to archiving in the Hanford Environmental Information System. A summary of the samples collected and laboratory analyses performed is provided in Table 1

of the RSVP.

No COPCs were detected above RAGs in the soil samples collected at the site. However, strontium-90 activity in the pipe scale sample was quantified at 1,030 pCi/g, exceeding the direct exposure lookup value correlating to a 15 mrem/yr dose rate. Cesium-137 was also detected in the scale sample (2.66 pCi/g), but at an activity below dose-equivalence lookup values. The maximum results for other COPCs were below applicable RAGs, but pesticide analysis was inadvertently excluded for the soil samples collected.

Final excavation began August 9, 2005 and extended through August 12, 2005. A total of approximately 3,400 bank cubic meters (4,400 bank cubic yards) of soil and debris was excavated and staged onsite before disposal at the Environmental Restoration Disposal Facility. After remediation, the site exists as a shallow (approximately 1 meter [3 feet] deep) excavation.

The RSVP has demonstrated that the site meets the objectives for interim closure as established in the RDR/RAWP and the Remaining Sites ROD, (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 132-F-3	Classification: Accepted
Names: 132-F-3; 115-F Gas Recirculating Facility	Reclassification: No Action (12/9/2003)
Type: Burial Ground	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1965
Description:	The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification. This site was the below grade remaining material from the decommissioning of the 115-F Gas Recirculation Facility. The building was demolished in-situ using Allowable Residual Contamination Level (ARCL) methodology. At present, the site looks like a gravel parking lot that is free of any debris.
Location:	The site was located approximately 61 meters (200 feet) due west of 105-F Building.
Process Description:	The gas recirculation facility was a single-story concrete building that housed the reactor inert gas processing and recirculation system. The gas system continuously recirculated a large volume of gas at very low pressure. The recirculation cycle included cooling, drying, and filtering of the gas prior to reentry into the reactor. The purpose of the reactor inert gas system was to provide a closed-loop nonreactive gas environment in the graphite core that would remove moisture and gases from the core and serve as a heat transfer medium between the graphite core and the process tubes. The system also served to detect water leaks within the reactor core. When a leak was detected, the gas was routed to the ventilation exhaust system. Filters, gas coolers, blowers, condensers, and silica gel drying towers were located within the 115-F Building. The system was designed to maintain gas pressure in the reactor at a slightly positive value with respect to the ventilation air so that the air could not make contact with the graphite core. Contamination of the 115-F Building occurred on the inside surfaces of ducts, concrete surfaces, machinery, and filters, as indicated by analysis of smear samples taken from these surfaces. The tunnels that connected the 115-F Building to the 105-F Reactor Building were also radioactively contaminated. When in operation, the site was a single-story, reinforced concrete structure, 6.1 meters (20 feet) high. The unit's dimensions were 51.2 meters (168 feet) long, 29.9 meters (98 feet) wide, with 4.0 meters (13 feet) below grade. An operating gallery extended down the center and was flanked on either side by cells that contained the gas processing equipment. The equipment cell walls and floors were 0.9 meters (3 feet) thick. At

right angles to the operating gallery and extending across the full width of the west end was the service section, which contained the ventilation fan, air compressor, office, locker room, etc. A pipe tunnel 11.0 meters (36 feet) wide by 2.4 meters (8 feet) high ran beneath the full length of the building. The main gas lines to and from the 105-F Building entered through this tunnel.

Waste Type: Demolition and Inert Waste

Waste Description: The resident radionuclides are tritium, carbon-14, cobalt-60, strontium-90, cesium-137. Surface smears taken in the facility over a 100-square centimeter (15.5-square inch) area revealed alpha contamination of less than 200 disintegrations per minute (dpm) on all surfaces tested. The maximum direct reading of 15,000 counts per minute (cpm) was recorded in the east end of the piping tunnel that connected the gas recirculation facility to the reactor (Chattin and Powers 1985).

Closure Info: The 115-F Gas Recirculation Facility decommissioning activities began in July 1984 and were completed in October 1984. The decommissioning included radiological characterization, removal of tunnel piping, equipment/waste disposal, and demolition/site grading. The below-grade perimeter walls were demolished to at least 1 meter (3 feet) below grade. Remaining walls were left intact to provide containment for the rubble. The entire area was covered with clean backfill at least 1.2 meter (4 feet) deep. Final grading to approximate the surrounding terrain added another 1 meter (3 feet) of clean backfill material over the demolition site.

In 2003 the waste site evaluation 0100F-CA-V0182, Rev 2, demonstrated that reviews of information which included modeling results, facility information and historical data, supported reclassification to "no action" for the site. The site had achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999).

Residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESRAD modeling.

Code:	132-F-4	Classification:	Accepted
Names:	132-F-4; 132-F-4 Reactor Stack Demolition Site; 116-F Reactor Exhaust Stack; 116-F Reactor Stack	Reclassification:	No Action (11/14/2005)
Type:	Burial Ground	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965
Description:	The site consists of two subsites: one is the 116-F Reactor Stack and Subsite 2 is the stack's octagon-shaped base. The site is a cobble covered field next to the 105-F Reactor Building.		
Location:	The site was located just west of the 105-F Reactor Building. The stack was demolished into a trench extending west from the stack's original location.		
Process Description:	The stack was used to dispose of confinement air that originated from the work areas in the 105-F Reactor Building. The clean air entered the noncontaminated portions of the reactor building, then through zones with increasing levels of contamination, and finally entered the filter building where air passed through "absolute" (particulate) and "halogen" (activated charcoal) filters. The filtered air then vented through the 61-meter (200-foot) stack and discharged into the atmosphere.		

Related Sites/ Structures: Following completion of the confinement project in 1960, the air was diverted via underground, reinforced concrete ducts to the 117-F Filter Building. After flowing through the filters, the air went through below-grade and above-grade concrete ducts and into the exhaust stack.

Waste Type: Demolition and Inert Waste

Waste Description: The estimated radionuclide inventory for the 116-F Stack prior to demolition was 5.0 picocuries/gram. This amount was calculated from the concentration of nuclides over the interior of the stack to a depth of 1 centimeter (0.39 inches). The radionuclides found were tritium, carbon-14, cobalt-60, strontium-90, cesium-137, europium-152, and plutonium-239.

Testing performed on several of the reactor stacks in the 100 Area prior to decommissioning showed that the stacks contained residual quantities of radionuclide materials on their interior surfaces. Standard smear testing performed over a 100-square centimeter (15.5-square inch) area on these surfaces showed the presence of tritium at concentrations of 400 to 13,000 picocuries per square centimeter and carbon-14 at concentrations of 200 to 2.1E+07 picocuries per square centimeter (Dorian and Richards 1978). Beta-gamma activity from other radionuclides was also identified.

This Site has the Following SubSites:

Code: 132-F-4:1

Names: 132-F-4:1; 116-F Reactor Stack Demolition Site

Code: 132-F-4:2

Names: 132-F-4:2; 116-F Reactor Stack Base Burial

Code: 132-F-4:1

Classification: Accepted

Names: 132-F-4:1; 116-F Reactor Stack Demolition Site

Reclassification: No Action (12/8/2003)

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The 116-F Stack was a reinforced concrete structure 61 meters (200 feet) high with a base diameter of 5.05 meters (16.58 feet) and a maximum thickness of 0.46 meters (18 inches) at the base. The stack rested on a double octagon-shaped base which extended 5.3 meters (17.5 feet) below grade. The interior of the unit contained 4.2 microcuries of radioactive materials. The stack was demolished by explosive demolition into a trench and then was broken into pieces smaller than 1 meter (3 feet) in diameter. Afterwards, all of the loose rubble was pushed into the trench and backfilled. The site was then graded to match the surrounding terrain.

Closure Info: RESRAD modeling was performed in 2003 to provide another data point. The RESRAD modeling accounted for radioactive decay from 1980 (the year of sample collection) to 2003, and predicted that none of the contaminants detected in the concrete from the interior of the stack would reach groundwater within 1,000 years.

This unit was demolished in September 1983 and buried in a trench between the 117-F Building Site and the 115-F Building Site. The trench was backfilled and covered with a 1-meter (3-foot) layer of soil. The site has been documented as achieving the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the 100 Area RDR/RAWP (DOE-RL 2002) and the Remaining Sites ROD (EPA 1999). Any residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that based on RESRAD modeling, pose no threat to groundwater or the Columbia River. The basis for reclassification is described in detail in the Waste Site Evaluation for 132-F-4, 116-F Reactor Exhaust Stack (0100F-CA-V0183), Bechtel Hanford Company, Richland, Washington.

The SubSite is Part Of:

Code: 132-F-4
Names: 132-F-4; 132-F-4 Reactor Stack Demolition Site; 116-F Reactor Exhaust Stack; 116-F Reactor Stack

Code: 132-F-4:2
Classification: Accepted
Names: 132-F-4:2; 116-F Reactor Stack Base Burial
Reclassification: No Action (11/14/2005)
Type: Burial Ground
Start Date:
Status: Inactive
End Date:

Description: Subsite 2 consists of the (116-F) Reactor Stack Base. The monolithic concrete stack base and foundation included an imbedded stack condensate drain line. The 116-F stack base burial site has a separate waste site boundary about 0.5 meters (1.5 feet) east of 116-F stack burial site.

Closure Info: The 5.6 meters (18.5 feet) diameter octagonal stack base was removed to about 1 meter (3 feet) below grade and extended to 7.2 meters (23.5 feet) below grade. The vertical 15-centimeters (6-inches) cast iron condensate drain pipe in the center of the stack base exited the side of the concrete monolith about 1.6 meters (5.2 feet) below grade. The condensate drain line from the stack base to the 105-F Building process sewer was removed during the demolition activities for the 105-F Reactor below-grade structures.

The stack base included a 15 centimeter (6 inch) diameter cast iron drain pipe in the center of the base that exited the east side of the base at a depth of 1.5 meters (5 feet) below grade. The 15 centimeter (6 inch) cast iron drain pipe ran east from the stack base to the 105-F Building wall a distance of 1.9 meters (6.2 feet) and entered the 105-F Building at a depth of 1.9 meters (6.2 feet) below grade. The external piping and the upper 1 meter (3 feet) of internal piping was removed during the demolition of the 116-F stack and the adjacent 105-F Building walls. About 3.4 meters (11 feet) of cast iron drain pipe remains imbedded in the stack base.

The potential contamination within the imbedded pipeline is deemed negligible since the pipe was a free draining condensate line to the process sewer. The 116-F stack, which was closed with a no action reclassification, represents the worst-case contamination potential for the drain line. The corresponding 105-D concrete base and foundation, including the imbedded cast iron drain line, was closed with no further action.

The SubSite is Part Of:

Code: 132-F-4
Names: 132-F-4; 132-F-4 Reactor Stack Demolition Site; 116-F Reactor Exhaust Stack; 116-F Reactor Stack

Code: 132-F-5
Classification: Accepted
Names: 132-F-5; 117-F Filter Building
Reclassification: No Action (12/8/2003)
Type: Burial Ground
Start Date: 1/1/1960
Status: Inactive
End Date: 1/1/1965

Description: The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification.

Location: The site was located west of 105-F.

Related Sites/ Structures: The building received exhaust fan discharge through an inlet duct from the 105-F Reactor and discharged the filtered air through a discharge duct and out the 116-F Stack.

Waste Type: Process Effluent

Waste Description: The radionuclides found in the 117-F Building are tritium, carbon-14, cobalt-60, cesium-137, strontium-90, europium-154, and europium-152. During the decommissioning of the facility,

surface smears over 100-square centimeter (15.5-square inch) areas in the building revealed beta-gamma contamination of less than 200 counts/minute and alpha contamination less than 500 counts/minute.

Closure Info: The 117-F Filter Building was released for unrestricted use based on the post-decontamination characterization results cited in a letter from J. J. Dorian with the subject Radiological Criteria for Decontamination and Decommissioning of the Retired 100 Area 117-F Filter Buildings dated May 18, 1983. Consequently, demolition and site grading were performed in November 1983 using conventional heavy equipment. The rubble was buried under at least 1 meter (3 feet) of clean fill and the site was graded to blend with the natural terrain.

RESRAD modeling was performed in 2003 to provide another data point. The RESRAD modeling accounts for radioactive decay from 1983 (the year of building demolition) to 2003, and predicts that none of the contaminants detected in the paint will reach groundwater within 1,000 years.

Reclassification to "No Action" is supported by the 2003 waste site evaluation, 0100F-CA-10184, Rev 1, RESRAD modeling and historical data. The site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-96-17) and the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999).

Residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESRAD modeling.

Code:	132-F-6	Classification:	Accepted
Names:	132-F-6; 132-F-6 Lift Station; 1608-F Effluent Pumping Station; 1608-F Waste Water Pumping Station	Reclassification:	No Action (12/8/2003)
Type:	Pump Station	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification. The area where the demolished facility once stood is currently a cobble covered field.		
Location:	The site was located near the southeast corner of the 105-F Reactor Building.		
Related Sites/Structures:	This site was associated with 116-F-6 (1608-F Liquid Waste Disposal Trench) and the 105-F Reactor Building.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	Before demolition, this site received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals (primarily Turco). Radionuclides were primarily miscellaneous activation products, including tritium, carbon-14, cobalt-60, strontium-90, cesium-137, europium-152, and europium-154. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid. Water was pumped from the reactor collection pits into the reactor effluent lines near the 105-F Reactor Building and became part of the 107-F effluent that was discharged to the Columbia River. During decommissioning of the facility in 1987, a survey of the walls, ceilings, and floor areas of the main floor, pump room, switch gear room, and valve room revealed direct beta-gamma contamination to less than 200 counts/minute (cpm). The maximum contamination levels		

recorded were for the floor areas of the sumps at 5,000 to 25,000 counts/minute (cpm) direct beta-gamma.

During the Dorian and Richards (1978) study in 1975-1976, samples were collected from a soil boring identified as location 132-F-6. Analytical results of material collected in this boring at depths of 7.6 meters (25 feet) and 9 meters (30 feet) revealed elevated concentrations, with a maximum of 92 picocuries/gram for europium-152.

Closure Info: The site was decommissioned and demolished in 1987. Prior to being demolished, the walls, ceiling and floors of the facility were radiologically surveyed. A total of sixty six concrete core samples and seven rust samples were collected and analyzed.

The facility demolition included removal, characterization and disposal of equipment and sump water. A total of 1.6 cubic meters (56 cubic feet) of asbestos material was removed and taken to the Hanford Central Landfill. Low level radiologically contaminated equipment was taken to the 200 Area burial grounds. Approximately 104,166 liters (27,000 gallons) of residual sump water was transported to the 1325-N Liquid Waste Disposal Facility. Sump sediments were placed into 55 gallon drums and disposed of at the 200 Area burial grounds.

Reclassification to "No Action" is supported by the 2003 waste site evaluation, 0100F-CA-V0191, Ref. 1, RESRAD modeling and historical data. The site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE RL-96-17, Rev. 4) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and pose no threat to groundwater or the Columbia River based on RESRAD modeling.

Code: 182-F	Classification: Accepted
Names: 182-F; 182-F Reservoir	Reclassification: Interim Closed Out (9/12/2005)
Type: Dumping Area	Start Date:
Status: Inactive	End Date: 1/1/1977
Description:	The site has been remediated and interim closed out.
Location:	Reservoir was located approximately 400 meters (1,312 feet) due north of the 105-F Reactor Building.
Process Description:	The 182-F Reservoir received raw water from the Columbia River for reactor cooling water and raw water for the 100 Area supply system. The reservoir had a storage capacity of 94.6 million liters (25 million gallons). The reservoir was later used as a landfill for disposal of decontaminated rubble from buildings that were decommissioned in the 100 F Area. In 1997, the site was covered with clean fill.
Related Sites/ Structures:	The site was related to the 183-F Water Treatment Plant, the 126-F-2 (183-F) Clearwells and the 105-F Reactor Building.
Waste Type:	Demolition and Inert Waste
Waste Description:	This unit received demolition rubble from the 182-F Pumping Station and the 183-F Water Treatment Building and Sedimentation Basins, and debris from other building demolitions. Some of the debris was from 144-F, 144-R, 141-N, 141-P, 141-F, 141-H and 141-L. The unit was covered with fill from adjacent land.
Closure Info:	Based on a review of the site historical process information and the results of the geophysical

survey, the site appeared to be a disposal area for material that contained hazardous constituents at levels in exceedance of remedial action goals. Based on these determinations, and the implications of sampling a site of this magnitude, remedial action was recommended in accordance with the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA, 1999)

The Remaining Sites Verification Package for the 182-F Reservoir (RSVP) demonstrated that the waste site met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA 1999)(ROD).

Excavation of the Reservoir began on March 29, 2005, with removal and stockpiling of debris and soil. Visual observations of soil and debris removed from the southern and eastern portions of the reservoir indicated the presence of inert demolition debris (e.g., concrete, wood, rebar) with a limited amount of lead, asbestos, and some batteries. Excavation of the western portion of the reservoir revealed essentially soil with no debris. Based on the results of the excavation and discussion with the U.S. Department of Energy and U.S. Environmental Protection Agency, it was decided that excavation would stop and sampling would be performed to support a decision if additional excavation was necessary.

Samples of stockpiled material removed from the reservoir and residual soil remaining in the reservoir were collected on April 29, 2005, and analyzed for asbestos, radionuclides, metals, and polychlorinated biphenyls. Additional sampling of soil within the reservoir for polychlorinated biphenyl analysis was performed on May 26, 2005. The cleanup verification sample numbers cited in the RSVP include: J030N6 and J030N7, J03342 through J03344 and J03702 through J03704. The sampling results indicated that the remedial action objectives have been met, however they do not appear in HEIS.

The results of the sampling indicated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: 1607-F2	Classification: Accepted
Names: 1607-F2; 1607-F2 Sanitary Sewer System; 1607-F2 Septic Tank; 124-F-2	Reclassification: Interim Closed Out (3/11/2003)
Type: Septic Tank	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1988
Description: The site has been remediated and closed out. The unit included a septic tank, tile field and associated pipeline. The unit was 4.6 meters (14.9 feet) deep, constructed of reinforced concrete, and had a 522-person capacity (130 liters [35 gallons] per capita) with an average detention period of 24 hours. The walls and floor were 25 centimeters (10 inches) thick. The tile field was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a minimum of 2.4 meters (8 linear feet) per capita. The laterals were open jointed, spaced 2.4 meters (8 feet) apart. The tile field was irregularly shaped, measuring approximately 90.3 meters (296 feet) by 54.0 meters (177 feet).	
Location: The septic tank was located approximately 67 meters (220 feet) west and 15 meters (50 feet) south of the 116-F-14 (107-F Retention Basin). The tile field was located approximately 61	

meters (200 feet) south of the septic tank, within the 126-F-1 Ash Pit.

**Related Sites/
Structures:** This site received effluent from 184-F, 185-F, 190-F, 105-F, 108-F, and the 1700 Administration and Service Buildings.

Waste Type: Sanitary Sewage

**Waste
Description:** This unit received unknown amounts of sanitary sewage from the 184-F Powerhouse, the 185-F Chemical Treatment Building, the 190-F Pumphouse, the 105-F Reactor Building, the 108-F Building, and the 1700 Administration and Service Buildings. The unit now services the 105-F and 108-F Buildings only. The other buildings have been demolished. Since the site serviced both the 105-F and 108-F Buildings, there is the potential to have received hazardous contaminants. The sludge in the septic tank was measured and sampled as part of the Group 4 Remedial Design Field Investigations. The sludge volume was estimated to be 49,970 liters (13,200 gallons). Sample numbers B0LC76, B0LC77, B0LC78 and B0LC82 were analyzed for metals, volatile organics and semi-volatile organics. Radionuclides were determined by Gamma Spectroscopy. Polyaromatic hydrocarbons were identified as well as elevated levels (above background) of cobalt-60, cesium-137, strontium-90, europium-154/155, radium-226, plutonium-238,239/240 and uranium-234, 235/238. The estimated dose rate from the tank sludge is 157.2 millirem per year.

Closure Info: Remedial action objectives and goals for the 1607-F2 site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office (DOE-RL), in concurrence with the Washington State Department of Ecology. These goals and objectives were documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE RL 2002).

The selected remedial action for the 1607-F2 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to the average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify contaminants of potential concern (COPCs). Waste site COPCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). Process knowledge only identified COPCs and did not identify the final contaminants of concern (COCs) for the 1607-F2 site. The COPCs for this site listed in the SAP (DOE-RL 2001) consist of the following: cobalt-60, cesium 137, europium-154, europium-155, strontium-90, uranium-234, uranium-235, uranium 238, and arsenic. Based on characterization sample results for the 1607-F2 Septic Tank sludge, mercury was added to the list of COPCs for the 1607-F2 Septic System for evaluation during remediation (BHI 1997).

During remediation of the 1607-F2 site, in-process sampling and analysis of the sludge in the septic tank, septic system, and tile field (sampling conducted to guide remediation and for waste characterization) indicated that strontium 90, the uranium isotopes, mercury, and arsenic were not COCs for the 1607-F2 site. Therefore, these contaminants are not addressed further in this CVP. In process sampling indicated that strontium-90, the uranium isotopes, and mercury were at levels less than the Hanford Site background (DOE-RL 1996) of 0.18 pCi/g for strontium-90, 1.1 pCi/g for uranium 234, 0.11 pCi/g for uranium-235, 1.1 pCi/g for uranium-238, and 0.33 mg/kg for mercury.

Because a large portion of the 1607-F2 drain field is within the footprint of the 126-F-1 Ash Pit and based on agreement between the Tri-Parties, europium-152 was included in the final list

CVP COC list for the 1607-F2 site. The COC list for the 126-F-1 Ash Pit is included in the Sampling and Analysis Instruction for Confirmatory Sampling of the Southern Portion of the 126-F-1 Ash Pit (BHI 2001).

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 6,679 m² (7,988 ft²) in area with a depth of 4.6 m (15 ft). Waste site cleanup was conservatively evaluated to meet shallow zone criteria. Approximately 35,099 metric tons (38,690 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the 1607-F2 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Ten cleanup verification samples including two QA/QC samples were collected from the shallow zone on August 13, 2002.

The CVP demonstrates that remedial action at the 1607-F2 site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP (DOE-RL 2002). The remaining soils at the 1607-F2 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 1607-F2 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 ft]) are required. The 1607-F2 site is verified to be remediated in accordance with the ROD (EPA 1999) and may be backfilled.

Code:	1607-F3	Classification:	Accepted
Names:	1607-F3; 1607-F3 Sanitary Sewer System; 1607-F3 Septic Tank; 124-F-3	Reclassification:	Interim Closed Out (4/26/2007)
Type:	Septic Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and interim closed. The site consisted of a septic tank, drainfield and associated pipeline. It was constructed of reinforced concrete; the walls and floor were 25 centimeters (10 inches) thick.		
Location:	The septic tank was located approximately 183 meters (600 feet) west of the 183-F Water Treatment Plant. The drainfield was approximately 23 meters (75 feet) west of the septic tank.		
Process Description:	The septic tank had a capacity of 5432.07 liters (1435 gallons). The system could support 41 persons assuming input of 132.49 liters (35 gallons) per capita per day and a one day retention period. The drainfield was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a total of 100 linear meters (328 linear feet) of piping (2.4 linear meters [8 linear feet] per capita). The 20 centimeter (8 inch) laterals were open jointed and spaced 2.4 meters (8 feet) apart.		
Related Sites/Structures:	The site was related to the 182-F Pump Station, the 183-F Water Treatment Plant, and the 151-F Substation.		

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary sewage from the 182-F Pump Station, the 183-F Water Treatment Plant, and the 151-F Substation.

Closure Info: The Remaining Sites Verification Package (RSVP) 2006-047 has documented the evaluation and remediation of the site. The site evaluation and supporting documentation has demonstrated that the site has met the remedial action objectives and goals specified in the Remaining Sites Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, (Remaining Sites ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and has met the objectives for interim closure .

Remediation of the waste site began in September 2005 and consisted of the removal of the septic system, drain field, associated piping, and overburden material. During remediation approximately 2,798 metric tons (US 3,085 tons) of material was excavated, staged onsite, and subsequently disposed of at the Environmental Restoration Disposal Facility, (ERDF). Verification sampling of the excavation and staging area footprint was conducted in March 2006 to verify the completeness of remediation.

Contaminants of potential concern (COPCs) were identified based on existing analytical data and historical process information associated with the site. The COPCs were pesticides, polychlorinated biphenyls (PCBs), arsenic, barium, cadmium, total chromium, lead, selenium, silver, mercury, and semivolatle organic compounds (SVOCs). Additionally, 100-F Reactor Area Underground Pipeline Historical Information Summary stated that undetermined radionuclides could be present at this site. Therefore, gamma energy analysis and gross alpha and gross beta analyses were added to verify the presence or absence of radionuclides.

The analytical results indicated that the excavation contained residual arsenic and lead concentrations exceeding cleanup criteria. Additional remediation of the excavation was performed in December 2006 and consisted of removing an additional 3,791 metric tons (4,179 US tons) of material. A second set of verification samples was collected from the excavation and analyzed for arsenic and lead.

The results of both sampling events were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The results were stored in the Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS) and were included in Appendix A of RSVP-2006-047.

In accordance with this evaluation, the verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the RDR, and the Remaining Sites ROD. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required

Code: 1607-F4	Classification: Accepted
Names: 1607-F4; 1607-F4 Sanitary Sewer System; 1607-F4 Septic Tank; 124-F-4	Reclassification: Interim Closed Out (12/3/2007)
Type: Septic Tank	Start Date: 1/1/1944

Status:	Inactive	End Date:	1/1/1965
Description:	The site consisted of a septic tank, drainfield, and associated pipeline. The tank was constructed of reinforced concrete.		
Location:	The site was located 61 meters (200 feet) west of the 115-F Gas Recirculation Building.		
Process Description:	The walls of the reinforced concrete septic tank were 20 centimeters (8 inches) thick, and the floor was 15 centimeters (6 inches) thick. It had a capacity of 794.94 liters (210 gallons). The system could support 6 persons assuming input of 132.49 liters (35 gallons) per capita per day and a one day retention period. The drainfield was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a total of 14.6 linear meters (48 linear feet) of piping (2.4 linear meters [8 linear feet] per capita). The laterals were open jointed and spaced 2.4 meters (8 feet) apart. The system supported the 115-F building.		
Related Sites/ Structures:	This unit received effluent from the 115-F Gas Recirculation Building.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received an unknown amount of sanitary sewage from the 115-F Gas Recirculation Building. There is the potential for the site to have received hazardous contaminants from the 115-F Building.		
Closure Info:	The REMAINING SITES VERIFICATION PACKAGE FOR THE 1607-F4 SANITARY SEWER SYSTEM (RSVP 2004-131) has documented that the site meets the objectives for Interim Closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD).		

Remediation of the waste site was performed from April 3 through 5, 2007, and included removal of the septic tank, the drain field, and the associated piping. Overburden material and other soils presumed to contain no residual contamination above cleanup levels were stockpiled south of the excavation for post remediation verification sampling. Approximately 707 cubic meters (925 yards) of piping, concrete material, and suspect contaminated adjacent soils were removed and disposed at the Environmental Restoration Disposal Facility.

Excavation and confirmatory sampling was conducted on October 6, 2004. During excavation in sample area 1, the septic tank was discovered but was found to have been previously decommissioned and backfilled. The backhoe bucket used in the excavation was too large to enter the opening in the top of the tank. In addition, the septic tank was constructed of reinforced concrete and could not be penetrated with the excavation equipment. As a result, confirmatory samples of material inside the tank were not collected. Instead, a soil sample was collected underneath the septic tank at 2.9 meters (9.5 feet) below ground surface.

The verification sampling data to determine if the RAGs had been met, was collected in April and August 2007. The constituents that contributed to the exceedances of the cumulative hazard quotient were carried forward as contaminants of concern (COCs) for verification sampling. These included inductively coupled plasma (ICP) metals, hexavalent chromium, mercury, semivolatle organic compounds, polychlorinated biphenyls, and pesticides. Radionuclides were either not detected in any of the confirmatory samples, or were detected below RAGs and were, therefore, eliminated as COCs for verification sampling in the excavated area and below cleanup level (BCL) stockpile. At the road crossing portion of the waste site had not been previously characterized, gamma energy analysis, gross alpha, and gross beta analyses, in addition to the site COCs, were requested for samples collected in this area of the waste site. The results are stored in the Environmental Restoration (ENRE) project-specific database prior

to archival in the Hanford Environmental Information System (HEIS) and are included in Appendix A of the RSVP.

The RSVP and the verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the RDR/RAWP and ROD. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also have demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	1607-F5	Classification:	Accepted
Names:	1607-F5; 1607-F5 Sanitary Sewer System; 1607-F5 Septic Tank; 124-F-5	Reclassification:	Interim Closed Out (9/14/2006)
Type:	Septic Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and interim closed out. The system consisted of a septic tank, drainfield, and associated pipeline.		
Location:	The site was located approximately 122 meters (400 feet) east of the northeast corner of the old 182-F Reservoir. The drainfield was located just southeast of the septic tank.		
Process Description:	The septic tank was constructed of reinforced concrete; the walls are 20 centimeters (8 inches) thick, and the floor was 15 centimeters (6 inches) thick. The septic tank had a capacity of 794.94 liters (210 gallons). The system could support 6 persons assuming input of 132.49 liters (35 gallons) per capita per day and a one day retention period. The drainfield was constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a total of 14.6 linear meters (48 linear feet) of piping (2.4 linear meters [8 linear feet] per capita). The laterals were open jointed and spaced 2.4 meters (8 feet) apart. Piping for the system included a 15 centimeter (6 inch) diameter by 69 meters (225 feet) long vitrified clay pipe that exited the 181-F facility and connected to the northwest side of the septic tank		
Related Sites/ Structures:	The site received effluent from the 181-F Pumphouse.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received an unknown amount of sanitary sewage from the 181-F Pumphouse.		
Closure Info:	The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD).		

Based on the results of confirmatory sampling performed in November 2004, and field observations, it was determined that the waste site required remedial action. However, the influent pipeline connecting the 181-F Pumphouse to the septic tank did not require remedial action. The remedial action was conducted on August 30 and 31, 2005, with excavation of 2,250 metric tons (2,480 US tons) of material that was disposed at the Environmental

Restoration Disposal Facility.

Following remediation, verification sampling of the excavation and the footprint of the waste staging pile was initiated on March 13, 2006, and concluded on March 20, 2006. The verification sample results indicated that the waste removal action achieved compliance with the remedial action objectives for the site. In accordance with the evaluation, the verification sampling results support a reclassification of the site to interim closed out.

Soil cleanup levels were established based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern, contaminants of potential concern, and other constituents. The contaminants of potential concern for confirmatory sampling were identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) and by the evaluation of analogous sites. The COPCs for this site were identified as pesticides, polychlorinated biphenyls (PCBs), arsenic, barium, cadmium, total chromium, lead, selenium, silver, mercury, and semivolatile organic compounds (SVOCs). Screening levels were not exceeded for the site constituents, with the exception of boron, cobalt, and vanadium.

Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of these constituents does not pose a risk to ecological receptors, as concentrations of cobalt and vanadium are below Hanford Site background levels and boron concentrations are consistent with those seen elsewhere at the Hanford Site (no established background value is available for boron).

All analytical data were found to be acceptable for decision-making purposes. The confirmatory sample analytical data are stored in the WCH ENRE project-specific database prior to archiving in HEIS and were summarized in Appendix B of the RSVP.

A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for this site.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	1607-F6	Classification:	Accepted
Names:	1607-F6; 1607-F6 Sanitary Sewer System; 1607-F6 Septic Tank; 124-F-6	Reclassification:	Interim Closed Out (11/8/2001)
Type:	Drain/Tile Field	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1975
Description:	The site has been remediated and closed out. The 1607-F6 Sanitary Sewer System was below grade. It included two old tanks, a new tank, a tile field, and pipelines. The old "tanks" were constructed of two 0.91-meter (3-foot) lengths of 91-centimeter (36-inch) concrete pipe connected in series. The pipes were sealed to a wood planking base with asphalt and had wood plank covers. The new tank was constructed of a 1.91-meter (6-foot 3-inch) section of 183-centimeter (72-inch) diameter steel pipe installed vertically with an attached bottom and two layers of tongue and groove planking for the top. The tank is shown on drawing H-1-1518 to have a 61-centimeter (24-inch) by 61-centimeter (24-inch) square access hole at the surface.		

Location: drawings show the old tanks being located under what was the east side of the 1705-F Building. The new tank is shown to be located 3 meters (6.8 feet) east of 1705-F Building. The tile field is located 40 meters (112 feet) east of the septic tank.

Process Description: This septic system operated from 1945 to 1975, receiving sanitary sewage from area buildings. The site is in close proximity to the 100-F-19 Reactor cooling water effluent pipelines, with a portion of the septic system drainfield located directly over one of the large cooling water effluent pipelines

Related Sites/ Structures: Currently no associated structures remain. The site received sanitary sewage from the former 1705-F, 146-F and 146-FR Buildings.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from the 146-F and 146-FR Buildings. The amount of waste received is unknown. Since the site serviced both the 146-F and 146-FR Buildings, there is the potential to have received hazardous contaminants.

Waste Type: Sanitary Sewage

Waste Description: Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified through process knowledge are listed in the SAP. Because a portion of the septic system drainfield piping was located over the 100-F-19 Reactor cooling water effluent pipelines, the COC/COPC lists for both sites were combined for the CVP. The COCs listed below are attributed to the 100-F-19 Reactor cooling water effluent pipelines, while the COPCs are attributed to the 1607-F6 site. Waste site COCs include: Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Nickel-63, Strontium-90. COPCs include: Lead, Polychlorinated biphenyls (PCBs), Semivolatile organic compounds.

Closure Info: The Cleanup Verification Package for the 1607-F6 Septic System and Pipelines, (CVP-2001-00010) documents that the waste site has met remedial action objectives (RAOs) and goals (RAGs) for interim closure as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area, (RDR/RAWP).

Remedial action at the 1607-F6 site began on July 28, 2000. Excavation of the site involved removing the overburden materials, septic system structure (tank and associated influent and drainfield piping), and underlying contaminated soil.

On April 25, 2001, the excavation was completed. There is a large gap between the excavation beginning date and completion date because the north-south septic pipeline was excavated at a later date, following the excavation of the septic tank and drain/tile field.

The final excavation and removal of the 1607-F6 site included the removal of one septic tank (the other two tanks were not found and were presumably removed during construction of the 1705-F Building), the north-south-oriented septic pipeline that served the 146-FR Building, the east-west-oriented septic pipeline that served the 146-F Building, the septic system drain/tile field, and underlying contaminated soil.

The contaminants of concern were C-14, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Ni-63, Sr-90, lead, PCB, SVOCs and arsenic. Cleanup verification sampling began on January 16, 2001, and was finished on May 14, 2001. Sample results demonstrated that remedial action at the 1607-F6 site achieved the RAOs and RAGs.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-

AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 1607-F7	Classification: Accepted
Names: 1607-F7; 124-F-7; 141-M Building Septic Tank	Reclassification: Interim Closed Out (10/19/2006)
Type: Septic Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1975

Description: The site has been remediated and interim closed. The site consisted of a septic tank, tile field, and interconnecting pipeline located under an area that was historically used for animal grazing (i.e., pasture). The septic tank received sanitary sewage from the former 141-M Building and had a volume of 3,800 Liters (1,000 gallons).

Location: The site was located within the 100-F Experimental Animal Farm area just off the northwest corner of the former 141-M Building and east of the 132-F-1 (The Chronic Feeding Barn) site. A walkway to the former 141-M Building was visible near three living juniper trees located south of the septic tank.

Related Sites/ Structures: There were no associated structures remaining at the site. Before remediation, the site received sanitary sewage from the former 141-M Building and runoff from the pasture use. The barns in the area were used for animals being tested with radioactive substances.

Waste Type: Sanitary Sewage

Waste Description: The site received sanitary sewage from the 141-M Building.

Closure Info: The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, (Remaining Sites ROD).

The contaminants of potential concern (COPCs) for the septic system were identified based on existing historical information for the 1607-F7 site. The COPCs identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) included americium-241, cobalt 60, cesium-137, europium 152, europium 154, europium 155, plutonium-239/240, strontium-90, cadmium, total chromium, hexavalent chromium, mercury, lead, pesticides, and semivolatile organic compounds (SVOCs). Based on further site-specific evaluation, volatile organic compounds (VOCs), arsenic, barium, selenium, silver, and polychlorinated biphenyls (PCBs) were included as COPCs.

No stained soil or suspected asbestos-containing material was encountered during confirmatory sampling activities.

Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern, contaminants of potential concern, and other constituents. Screening levels were not exceeded for the site constituents, with the exception of antimony, barium, boron, lead, vanadium, zinc, total DDT/DDE/DDD, and total dibenzofurans. Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of these constituents

does not pose a risk to ecological receptors because concentrations of antimony, barium, lead, vanadium, and zinc are within the range of Hanford Site background levels.

A Hanford Site background level for boron has not been established. The presence of total DDT/DDE/DDD and total dibenzofurans was believed to be due to historic application of pesticides and herbicides. The exceedance of soil screening values by boron, total DDT/DDE/DDD, and total dibenzofuran concentrations at the site will be evaluated in the context of additional lines of evidence for ecological effects. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for this site.

The site excavation began on August 8, 2005, and was completed November 30, 2005. Remediation of the waste site involved layback of overburden and removal of the septic tank, drain field, the interconnecting pipeline, and associated soils around and below those structures. Some of these materials were staged just south of the site before disposal; however, most of the waste was excavated using direct loadout and shipment to the Environmental Restoration Disposal Facility (ERDF). The overall depth of the excavation for the septic tank was approximately 3 meters (10 feet) below ground surface and approximately 1.5 meters (5 feet) below ground surface for the drain field. The excavation depths also included removal of 0.6 meters (2 feet) of soil below these structures. A total of approximately 1,088 metric tons (1,200 US tons) of contaminated material was disposed at ERDF.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils [i.e., surface to 4.6 meters (15 feet) deep]. The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code: UPR-100-F-1	Classification: Accepted
Names: UPR-100-F-1; 141 Building Sewer Line Spill; 141-C to 141-M Sewer Line Leak; UN-100-F-1	Reclassification: Interim Closed Out (9/15/2003)
Type: Unplanned Release	Start Date: 1/1/1971
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The site was an unplanned release that occurred on March 13, 1971.	
Location: The site was located between the 141-C and 141-M Buildings northeast of the 105-F Reactor and west of 116-F-14 (107-F Retention Basin).	
Release Description: The release was a spill of wash water containing contaminated animal waste.	
Related Sites/ Structures: The site was related to the sewer line from the 141-C to the 141-M Buildings which have since been demolished.	
Waste Type: Animal Waste	
Waste Description: The spill consisted of wash water used to clean out animal pens. The water contained 4.0E-5 curies of strontium-90 and 1.06E-6 curies plutonium-239.	
Closure Info: 100-F-19:2, 116-F-11, UPR-100-F-1 and 100-F-29 were addressed as a group. The information below documents information for the group of sites.	

The 100-F-19:2 Reactor Cooling Water Effluent Pipeline and co-located sites, (116-F-11 Cushion Corridor French Drain, UPR-100-F-1 Sewer Line Leak, and the 100-F-29 Experimental Animal Farm Pipelines), were remediated as a group and documented in CVP-2001-00003.

Remedial Action ran from August 2001 until December 2002. Verification sampling was conducted in January 2003. Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. Contaminants of concern (COCs) were C-14, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Ni-63, and Sr-90.

Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. The basis for reclassification was described in detail in the Cleanup Verification Package 2001-00003.

The cleanup verification package does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

Code:	UPR-100-F-2	Classification:	Accepted
Names:	UPR-100-F-2; 100-F-3; 107-F Basin Leak Ditch; Basin Leak Ditch	Reclassification:	Interim Closed Out (4/23/2002)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and closed out.		
Location:	The site ran northeast from the corner of the 107-F Retention Basin to the bank of the Columbia River.		
Process Description:	The Basin Leak Ditch was formed in 1955 following an overflow of the 107-F Retention Basin. The ditch was enlarged by repeated overflows from an effluent manhole located near the north end of the 107-F Retention Basin.		
Related Sites/Structures:	The site was associated with the 107-F Retention Basin and the 116-F-9, Animal Waste Leaching Trench.		
Waste Type:	Process Effluent		
Waste Description:	The waste was radioactive process liquid effluent from the 107-F Retention Basin.		
Closure Info:	The cleanup verification package (CVP-2001-00011) has documented that remedial action has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the approved Amendment to the Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17).		

The COCs for this site consisted of cobalt-60, cesium-137, europium-152, and europium-154, as listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22).

Site excavation and waste disposal began on February 6, 2001 and were completed on July 28, 2001. The exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. Cleanup verification sampling began on August 16, 2001, and was finished on August 16, 2001.

At the completion of the remedial action, the total excavation was approximately 2,388 meters squared (7,834 square feet) in area with a depth greater than 11 meters (36 feet). Approximately 670 metric tons (739 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility (ERDF).

Results of the sampling, laboratory analyses, and data evaluations for the UPR-100-F-2 site indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	UPR-100-F-3	Classification:	Accepted
Names:	UPR-100-F-3; Mercury Spill	Reclassification:	Interim Closed Out (8/14/2003)
Type:	Unplanned Release	Start Date:	1/1/1977
Status:	Inactive	End Date:	

Description: The site has been remediated and closed out. The site was an unplanned release that occurred at the northeast corner of the 146-FR Fish Laboratory (demolished).

Location: The site was located at the northeast corner of the 146-FR Fish Laboratory.

Release Description: In 1977, an unknown quantity of mercury was spilled on the floor in the 146-FR Fish Laboratory and was "squeegeed" across the floor and out the door onto the ground at the northeast corner of the building. The mercury contaminated an area approximately 3.05 meters by 3.05 meters (10 feet by 10 feet). Personnel who remember the incident are unable to specify the volume of mercury, its chemical composition, or the exact area of soil which was contaminated (employee interview).

Related Sites/ Structures: The spill was originally in the 146-FR Fish Laboratory then "squeegeed" out the door near the 146-FR Drywells (100-F-25).

Waste Type: Chemical Release

Waste Description: The waste was an unplanned release of mercury. The quantity is unknown.

Closure Info: 100-F-25 and UPR-100-F-3 were addressed as a group. The information below documents information for the group of sites.

The CVP-2003-00010 has documented that remedial action at the site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP.

Waste site contaminants of potential concern (COPCs) for the 100-F-25 site were originally identified in the Data Quality Objectives Summary Report for 100/300 Area Remaining Sites Analytical Sampling Effort (Remaining Sites DQO) (BHI-01249). Process effluent from the 105-F Reactor was used in the 146-F and 146 FR aquatic laboratories, which fed the 100-F-25, 146-F Drywells. Since the Remaining Sites DQO was published, remediation of contaminated soil associated with process effluent has provided additional potential contaminant information. The contaminants of concern are: carbon-14, cesium-137, cobalt-60, europium-152, europium-

154, nickel-63, strontium-90, mercury and hexavalent chromium.

Remedial actions were conducted on April 12, 2003. At the completion of remedial action, the total excavation was approximately 243 meters squared (2,615 square feet) in area with a depth of approximately 4.0 meters (13 feet). Approximately 809 metric tons (892 tons) of material (structures and soil) from the site were disposed at the Environmental Restoration Disposal Facility. Contaminants of Concern are c-14, Cs-137, Co-60, Eu-152, Eu-154, Ni-63, Sr-90, hexavalent chromium, mercury. Verification samples were collected on April 16, 2003.

The CVP demonstrates that remedial action at the site have achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1999) and RDR/RAWP (DOE/96-17). The remaining soils at the UPR-100-F-3 site have been sampled, analyzed, and modeled. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

100-FR-2

Code: 100-F-2	Classification: Accepted
Names: 100-F-2; PNL Ecological Study Strontium Garden; Strontium Garden	Reclassification: Interim Closed Out (7/25/2002)
Type: Laboratory	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1970

Description: The site has been remediated and closed out. The site was a garden plot consisting of twelve 1.2 by 3 meter (4 by 10 feet) plots arranged in two rows of six plots each. The area was surrounded on all sides and overhead by a wooden frame with 0.63-centimeter (0.25-inch) screen material attached. Hanford Drawing SK-1-2847, Sheet 2 shows it measured 24 by 9 meters (80 by 30 feet). In 1997, a site visit confirmed that the dimensions of the site were 24 meters (80 feet) by 9.4 meters (31 feet).

Location: The site was located near the southwest corner of 100F Area, south of well 199-F7-1, and east of the 100-F Perimeter Road (F Avenue).

Process Description: The site was established to study the behavior of plants grown in soil containing cesium-137 and strontium-90, under controlled conditions of soil tillage, irrigation, cropping and abandonment. Uptake of the radionuclides was measured in alfalfa, barley, radishes, beans, cheatgrass, and tansy mustard. The screened enclosure was designed to exclude mammals and birds, but not insects. Each plot was edged with wooden planks to reduce the transfer of contaminants among the soil plots. An article, written in 1971 by J.F. Cline and W.H. Rickard (published in 1972 in the Health Physics Pergamon Press), describes how the experiments were conducted and indicates the active experiment dates were 1954 -1964. It lists the sample results from the active experiment, collected from 1954 through 1963. Although the plot may have been established in 1952, a total of 180 inches of strontium contaminated irrigation water was used on these plots over the 1954 -1964 time period. This article also states that, in 1970, dry litter and soil samples were collected and analyzed. This seems to be the conclusion of the experiment.

Related Sites/ Structures: The site was related to the Experimental Animal Farm and radiological experiments conducted by Pacific Northwest Labs (PNL).

Waste Type: Soil

Waste Description: The waste was contaminated soil. Approximately 39 microcuries of strontium-90 and 120 microcuries of cesium-137 were added to the soil for botany experiments.

Closure Info: Remedial actions conducted from December 2001 to January 2002 have been documented in CVP-2001-00001. Verification sampling was conducted on February 13, 2002. At the completion of the remedial action, the total excavation was approximately 373 m² (4,014 ft²) in area with a depth greater than 1.6 m (5.2 ft). Approximately 1,269 metric tons (1,399 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility.

The COCs for this site consisted of cesium-137 and strontium-90. Cleanup verification sampling for the shallow zone was done on February 13, 2002.

The CVP demonstrates that remedial action at the 100-F-2 site has achieved the RAOs and corresponding RAGs established in the approved Remaining Sites ROD (EPA 1999) and RDR/RAWP (DOE/RL-96-17). These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code:	100-F-14	Classification:	Accepted
Names:	100-F-14; 100-FR-2 Vent Pipe; 100-F Carpenter Shop Waste Site Vent	Reclassification:	No Action (3/2/2005)
Type:	Storage Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site is a steel vent pipe extending above grade. The above grade pipe was 10 centimeters (4 inches) in diameter with a 180 degree bend at its top. The top points downward at its tip which is fitted with a vent assembly. Steel fence posts surrounded the vent pipe. During a April 1999 visit, several soil gas probes were observed. The area was fairly level with sandy soil and had a moderate cover of grasses. A concrete foundation pad (6 m x 9 m [20 ft x 30 ft]) is 13.7 m (45 ft) east of the site.		
Location:	The vent was located north of the northeast corner of 118-F-1 Burial Ground and approximately 244 meters (800 feet) southwest of the southwest corner of the 105-F Reactor Building. The unit was 13.7 meters (45 feet) west of a concrete floor pad that remains from a demolished carpenter shop.		
Related Sites/ Structures:	The site was probably related to the 100-F Carpenter Shop.		
Waste Type:	Water		
Waste Description:			
Closure Info:	A site evaluation was conducted as part of the Remaining Sites Verification Package attached to the Reclassification Form 2004-127. Historical data, process knowledge, geophysical survey results, site walkdown observations, and aerial photographs were used to develop a site-specific sample design.		
	A focused sampling approach was selected for the site, biased towards potential worst-case contaminant locations. Because the site walkdown observations and aerial photographs indicated that the site may have been a decontamination facility, the crib beneath the vent pipe was chosen as the suspected location for the terminus of the drain pipe that discharged liquid effluent from the floor drain.		
	The evaluation included a focused sampling approach consisting of excavating a test pit into the 3 by 3 meter (10 by 10 feet) subsurface anomaly located beneath the vent pipe (BHI 0100-F-WI-G0010). At 0.9 meters (3 feet) below ground surface a plastic vapor barrier was discovered, followed by the 0.15-meter (6-inch) lateral drain pipe that conveyed flow from the concrete pad floor drain at 1.2 meters (3.9 feet) below ground surface. The drain pipe appeared to consist of nonfriable asbestos-cement material, and a sample of the pipe material was taken.		
	Contaminants of potential concern (COPCs) for the site included semivolatile organic compounds (SVOCs), petroleum hydrocarbons, VOCs, arsenic, barium, cadmium, total chromium, lead, selenium, silver, polychlorinated biphenyls (PCBs) hexavalent chromium,		

mercury, pesticides, herbicides, radionuclides (gross alpha, gross beta, and gamma energy analysis) and asbestos.

The rock crib structure that drained the lateral pipe was revealed beneath the drain pipe, and a sample of the crib material was taken at 1.7 meters (5.6 feet) below ground surface. Native soil was discovered at 2.2 meter (7.2 feet), and a representative sample consisting of 15 aliquots distributed across the bottom of the test pit was taken. Results of the confirmatory sampling were used to make reclassification decisions for the site in accordance with the TPA-MP-14 (DOE-RL 1998) process.

The RSVP report demonstrates that the site meets the objectives for no action as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly referred to as the Remaining Sites Record of Decision [ROD]) (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future land uses of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-F-15	Classification:	Accepted
Names:	100-F-15; 108-F Building Ventilation French Drain	Reclassification:	Interim Closed Out (7/25/2002)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and closed out. The french drain was constructed of concrete buried to a depth that placed the upper drain surface at grade level. A highly degraded wooden cover was in place over the drain. The bottom of the drain consisted of soil and large gravel, which supported a five-gallon carboy container. A copper tube connected the exhaust duct from the third floor, room # 302, to the carboy.		
Location:	The unit was located next to the east wall of the 108-F Building.		
Related Sites/Structures:	This site was associated with the 108-F Building (site 100-F-36).		
Waste Type:	Water		
Waste Description:	The drain received condensate that formed inside several large hood ventilation ducts mounted externally on the east wall of the building. Condensate formed during cold weather and ran through 2.5-centimeter (1-inch) stainless steel lines to the drain. The quantity of waste received is not known.		

A bottle containing 3 gallons of liquid from the 100-F-15 french drain was characterized between 05/07/96 and 08/08/96. A radiological survey of the bottle was conducted using field detection equipment and the resulting readings showed less than detectable. A sample from the liquid was collected and sent to the laboratory for chemical and radiochemistry analysis. The resulting analysis was received on 08/28/96 and indicated the liquid contained above threshold amounts of radiological and hazardous material (i.e., plutonium and chromium). Specifically, the chemical constituents analyzed for were TCLP Metals, Inorganic Ions, and Total Cyanide, and the radiological constituents were GEA, Gross Alpha, Gross Beta, Strontium-90, Isotopic Plutonium, and Total Uranium.

Closure Info: documents information for the group of sites.

The cleanup verification package (CVP-2002-00001) has documented that the site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

The COCs for this site consisted of the following: total chromium, hexavalent chromium, plutonium-238 and plutonium-239/240 as listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22).

A cleanup verification sampling strategy was developed for the site based on the SAP and was approved in a status meeting by the U.S. Environmental Protection Agency. Because the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains were removed during decommissioning and demolition activities and backfilled with clean material, variance sampling was eliminated and cleanup verification samples were collected. The 100-F-15 french drain was sampled as per the SAP. The 100-F-4, 100-F-11, and 100-F-16 french drains were considered analogous to the 100-F-15 french drain and were verified as clean by excavating and sampling a test pit at each location.

Site excavation was completed as reported in the 108-F Biological Laboratory D&D Project Closeout Report. The CVP report documents that the 100-F-4, 100-F-11, 100-F-15, and 100-F-16 french drains have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 362.2 meters squared (3898.7 square feet) in area with a depth of 4.6 meters (15.0 feet). No material from the sites was disposed of at the Environmental Restoration Disposal Facility as a result of the Remedial Action Project activities described here. Verified clean materials were used as backfill at the completion of the remedial action.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 100-F-20	Classification: Accepted
Names: 100-F-20; PNL Parallel Pits	Reclassification: Interim Closed Out (1/17/2007)
Type: Trench	Start Date: 1/1/1962
Status: Inactive	End Date:
Description: The has been remediated and interim closed. The site consisted of two earthen pits or trenches, both oriented northeast to southwest. The pits were observed on aerial photographs (#7620 and #6451-5) from 1962, which show the site to be actively in use, with refuse material visible in the pit bottoms. The access roads appear well used, suggesting frequent motor vehicle access to the pit locations. Prior to remediation, the area was covered with cheat grass and rabbit brush vegetation. Evidence of surface disturbance was visible. Bricks and subsidence were observed at the site, but the exact location of the trenches is not visually discernible from the surface. Blue wooden stakes remain at the site from geophysical surveys. Between March 31, 1995 and April 4, 1995, a radiological survey was conducted over the general area of the Pacific Northwest Laboratory (PNL) parallel pits. Counts as high as 12,000 counts per minute (cpm)	

were collected over the surface of the site.

Location: The site was located about 30.5 meters (100 feet) west of the eastern 100-F Perimeter Road and immediately north of a dirt road that connects the 100-F Perimeter Road with the main reactor site access road, running along the southern boundary of the ash pit.

Process Description: The site was believed to have been used to dispose of both radioactive and nonradioactive material from the experimental animal farm. The Burial Ground ROD reported that the northern trench may have contained non-radioactive animal farm wastes, including hardware, lumber, and soft materials. The southern pit may have received radioactively contaminated animal feces and pen sweepings.

Related Sites/ Structures: The site was thought to have been related to the Experimental Animal Farm.

Waste Type: Misc. Trash and Debris

Waste Description: A retired Hanford employee was interviewed in 1995. He clearly remembered delivering waste to the pits. The southern pit may have received radioactively contaminated animal feces (mostly sheep) and pen sweepings, small quantities of animal tissue, and miscellaneous Experimental Animal Farm wastes. The northern pit may have received non-radioactive Experimental Animal Farm wastes including hardware, lumber, and soft materials. Neither of these pits was used as a burn pit. Potential contaminants included: Co-60, Sr-90, Pu-239/240

Closure Info: The waste site remedial action objectives (RAOs) and goals (RAGs) for interim closure as established in the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) have been met. Documentation of the remedial action may be found in the Cleanup Verification Package (CVP), 2006-00009.

Remedial action began on December 5, 2005, with load out of waste material completed on August 8, 2006. Excavation of the site involved removing demolition debris that contained concrete, metal piping, steel sheeting, and wood. Approximately, 14 small laboratory-type containers were encountered throughout the burial ground. No asbestos-containing material was identified during waste excavation and no areas of the burial ground were identified for focused sampling.

After removal of all debris, radiological field screening was used to determine that excavation activities were complete. At the conclusion of the excavation activities, the remediation footprint was approximately 4.3 m (14 ft) below the ground surface and at the deepest point the elevation at the bottom of the excavation was 117 m (384 ft) above sea level. An estimated 11,953 metric tons (13,176 U.S. tons) of material was excavated from the 100-F-20 burial ground and disposed at ERDF. Final cleanup verification samples were collected in August of 2006. The contaminants of concern (COCs) were cobalt-60, strontium 90, and plutonium 239/240, nickel-63, cesium-137 and lead.

The cleanup verification sample analytical data were summarized in Appendix A of the CVP-2006-00009 and stored in the Washington Closure Hanford Environmental Restoration project-specific database for data evaluation prior to being submitted for inclusion in the Hanford Environmental Information System database.

The remaining soils at the site have been sampled, analyzed, and evaluated. The results of this effort indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The site had no deep zone; therefore, no institutional controls were required. The site was verified to be remediated in accordance with

the ROD and may be backfilled.

Code: 100-F-35 **Classification:** Accepted
Names: 100-F-35; Soil Contamination Area Inside the 105-F Exclusion Area **Reclassification:** Interim Closed Out (6/16/2003)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and closed out. The site was a posted Soil Contamination Area with no distinguishing features.

Location: The site was located southwest of the 105-F Reactor Building, inside the Exclusion Area.

Release Description: An area of contamination was found inside the 105-F Exclusion Area on April 29, 1997. The area was initially found with the Mobile Surface Contamination Monitor (MSCM-II) Tractor (report #MSCMR243). A more detailed survey with an Electra reported 60,000 disintegrations/minute over an area approximately 3 by 3 meters (10 by 10 feet). A conversation with Steve Demers indicates that the source of contamination was a large container (commercial name "Terra-Store") that had been sitting on this area during the excavation of the 116-F-4 Pluto Crib. The Terra-Store container was filled with contaminated soil from the excavation and then transported to the Environmental Restoration Disposal Facility (ERDF). The 3 by 3-meter (10 by 10-foot) contaminated area is residual contamination from the container of contaminated soil (Terra-Store).

Related Sites/ Structures: The site was associated with 116-F-4 Crib.

Waste Type: Soil

Waste Description: An area of radiologically contaminated soil, reading 60,000 disintegrations/minute was identified within the 105-F Exclusion Area. The ground contamination was the result of a large container placed in this area to hold contaminated soil removed from 116-F-4 Crib. Soil samples from 116-F-4 Crib identified strontium-90 and cesium-137 as the major contaminants.

Closure Info: The Cleanup Verification Package (CVP) CVP-2002-00007) demonstrates that remedial action at the 100-F-35 site has achieved the remediation action objectives (RAOs) and corresponding remediation action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

For the respective points of compliance, remedial action goals (RAGs) were established for the following radionuclide and nonradionuclide contaminants of concern (COCs) identified through process knowledge and listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site consist of the following: americium-241, cesium-137, cobalt-60, europium-152, europium-154, plutonium-239/240, strontium-90, uranium-233/234, uranium-238, chromium (hexavalent).

At the completion of remedial action, the total excavation was approximately 51.2 square meters (551 square feet) in area with a depth of 0.9 meters (3 feet). Approximately 75.4 metric tons (83 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility (ERDF). Evaluation of sample results indicated that all RAOs and RAGs for direct exposure, protection of groundwater, and protection of the Columbia River had been met.

Cleanup verification samples collected on November 20, 2002 and January 7, 2003 were reported in the CVP. The sample numbers reported for the first event were J008C4 through J008C8 and the sample numbers for the second event were J00FF2 through J00FF6.

The results indicate the site supports future land uses that can be represented (or bounded) by a rural-residential scenario and show that no threat to groundwater or the Columbia River is posed from residual soil concentrations.

Code:	100-F-50	Classification:	Accepted
Names:	100-F-50; Storm Water Run Off Culvert; 100-F Railroad French Drain	Reclassification:	No Action (4/15/2008)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	This site consisted of a circular concrete basin and a steel culvert (pipe). The basin, approximately 1 meter (3 feet) in diameter, collected surface water runoff that drained via a 36-centimeter (14-inch) diameter steel diversion culvert under one of the railroad grades and flowed down an embankment to the flat terrain below.		
Location:	The concrete retaining wall at the top of the french drain was located about midway between the two sets of track that were about 10 meters (30 feet) apart.		
Release Description:	Evidence of water erosion on the hillside below the culvert and vegetation in aerial photographs suggested water runoff.		
Process Description:	The purpose of the French drain and drain pipe was unknown. It appeared to have been installed as a water collector and drain for the land between the two tracks. Aerial photographs during Hanford operations show the presence of an unusually large amount of vegetation below the drain culvert, suggesting that water solutions were discharged. No water piping sources were found on drawings in this area, so it does not appear that rinsing processes were performed at the site. The French drain appeared to be located at a low point in the area between the two railroad tracks. A drain pipe ran east under one set of railroad tracks to discharge from a soil bank above a low area in the adjoining land. There was a line of vegetation below the drain pipe in older photographs, but there was only dead vegetation found during the field walkdown in 2005. Since radioactive solutions were not typically discharged to soil surfaces (to avoid airborne contamination and spreading), it does not appear that any dumping of radioactive solutions was involved at the site. Cask car drainage and flushing was typically done at the shipping or receiving areas that had process sewers. Chemical dumping was not suspected for this site. There was soil washout on the bank below the culvert east of the railroad tracks. There was evidence of dead vegetation and/or some darkening of the soil in the low area. There was no sign of soil stains that might indicate chemical solution dumping.		
Related Sites/Structures:	The site was associated with railroad tracks and rail cars.		
Waste Type:	Soil		
Waste Description:	There is evidence of soil erosion below the culvert from the french drain. The concrete ring (french drain) is filled with soil.		
Closure Info:	The Remaining Sites Verification Package, RSVP-2007-001, for 100-F-50 has documented site conditions have been verified to meet the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-		

KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, (ROD).

The site evaluation included investigation by confirmatory sampling conducted on November 19, 2007. The contaminants of concern included: hexavalent chromium, gamma-emitting radionuclides (cesium-137, cobalt-60, europium-152, europium-154), and strontium-90. Additionally, based on drainage, the following COPCs were: the expanded list of inductively coupled plasma metals, mercury, semivolatile organic compounds, pesticides, polychlorinated biphenyls, herbicides, total petroleum hydrocarbons, and alpha- and beta-emitting radionuclides.

All confirmatory samples were analyzed in accordance with the 100 Area Remedial Action Sampling and Analysis Plan (SAP). The confirmatory sample analytical data results were stored in the WCH Environmental Restoration project-specific database for data evaluation prior to their archival in the Hanford Environmental Information System (HEIS) and were summarized in Appendix B of the RSVP.

In accordance with this evaluation, the confirmatory sampling results support a reclassification of the site to no action. The residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	118-F-1	Classification:	Accepted
Names:	118-F-1; Burial Ground No. 1; Minor Construction Burial Ground No. 2; Solid Waste Burial Ground No. 2	Reclassification:	Interim Closed Out (12/20/2007)
Type:	Burial Ground	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1965
Description:	The site consisted of a combination of two locations formerly called Minor Construction Burial Ground No. 2 and Solid Waste Burial Ground No. 2. The burial ground received radioactive equipment and other miscellaneous wastes from the 100-F Reactor operations. There were three unlined trenches and a pit present at the site. The trenches were oriented north-south and were typically 91 meters (300 feet) long by 6.1 meters (20 feet) wide. The site appeared as a cobble-covered, open field after remediation.		
Location:	The site was located approximately 300 meters (1000 feet) southwest of the 105-F Reactor Building.		
Process Description:	The 118-F-1 Burial Ground combined two locations formerly called Minor Construction Burial Ground No. 2 and Solid Waste Burial Ground No. 2. Solid waste from 105-F Reactor Building construction work was put into two holes in 1954 and covered with soil to grade in late 1955 or early 1956. Adjacent to this site, on the south side, a solid waste burial ground was opened in 1955 and extended on two subsequent occasions. Miscellaneous solid waste was buried in the 2 trenches, oriented north and south, and covered to grade with a minimum of 0.6 meters (2 feet) of soil. West of these trenches a number of pits containing irradiated process tubing and dummy elements were similarly covered. A third trench on the east side of the burial ground was used during July and August 1965, for burial of gun barrel tips, steel sleeves, and metal chips removed from the reactor. Filter boxes containing reactor graphite chips were also buried in the trench which was then backfilled to grade with 1.2 meters (4 feet) of soil cover. A pit near the west side of the site was used during the same period for burial of miscellaneous surface contaminated waste and was subsequently backfilled with approximately 1.8 meters (6		

feet) of soil cover. The boundary of the burial ground is permanently marked by posts numbered F-65-1 through F-65-21

- Waste Type:** Equipment
- Waste Description:** This site received radioactive reactor components and hardware (dummy elements, process tubing, etc) and other miscellaneous radioactive solid wastes. Potential contaminants include: Co-60, Sr-90, Pu-239/240
- Closure Info:** The Cleanup Verification Package for the 118-F-1 Solid Waste Burial Grounds documents that the waste site has met the remedial action objectives (RAOs) and remedial action goals (RAGS) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (ROD).

Remedial action began on December 27, 2005. All remedial activities (excavation, sorting, and load-out) were completed by June 22, 2007.

Wastes encountered in the 118-F-1 Burial Ground included reactor related waste including aluminum fuel spacers, splines, reactor hardware, equipment, piping, graphite dust, sheet metal, concrete, cardboard, wood timbers, other miscellaneous debris, and eight pieces of SSNF.

Approximately 88,800 metric tons (97,900 U.S. tons) of waste and contaminated soil from the site was disposed at ERDF and approximately 13,400 bank cubic meters (BCMs) of soil (overburden/below contaminant level [BCL] stockpile material) was segregated for use as clean backfill material. At the conclusion of excavation activities, the elevation at the deepest part of the remedial excavation was 117 meters (384 feet) above sea level. The remediation excavation was approximately 11,600 meters squared (125,000 square feet) in area with a maximum depth of approximately 5.5 meters (18 feet).

Final cleanup verification samples were collected in May 2007 and June 2007 to confirm acceptability of residual contaminant concentrations. The site contaminants of concern (COCs) for verification sampling as established in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP) included: tritium (H-3), carbon-14, cobalt-60, nickel-63, strontium-90, silver-108m, cesium-137, europium-152, europium-154, cadmium, lead, and mercury. In addition, because SSNF was encountered in the 118-F-1 Burial Ground, americium-241, plutonium-238, plutonium-239, plutonium-240, and uranium-238 were added to the list of COCs for the site.

The laboratory-reported sampling data results for all constituents were presented in Appendix B of the CVP and stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in Hanford Environmental Information System (HEIS).

The remaining soils at the site have been sampled, analyzed, and modeled. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at ERDF. These results also indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The excavation area had a maximum depth of approximately 5.5 meters (18 feet), which included a shallow zone and a deep zone. However, the entire excavation area is considered one decision unit, and will be closed out using the more restrictive shallow zone cleanup criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The 118-F-1 site is verified to be remediated in accordance with the ROD and may be backfilled.

Code:	118-F-2	Classification:	Accepted
Names:	118-F-2; Burial Ground No. 2; Solid Waste Burial Ground No. 1	Reclassification:	Interim Closed Out (2/8/2008)
Type:	Burial Ground	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	The site consisted of a solid waste burial ground that served as the original solid waste disposal site for the 100F Area. It was formerly called Solid Waste Burial Ground No. 1.		
Location:	The site was located approximately 450 meters (1,475 feet) west-southwest of the 105-F Reactor Building. Prior to remediation the burial ground boundary was permanently marked by posts numbered F-65-22 through F-65-37.		
Process Description:	Eight trenches contained miscellaneous solid waste from 105-F and one trench contained solid waste from the biology facilities. According to historical documentation, these trenches were covered to grade prior to 1956. The individual trenches were oriented north and south and were typically 76 meters (250 feet) long by 6.1 meters (20 feet) wide. Several cylindrical sleeves, measuring 5.5 meters (18 feet) long and 1.8 meters (6 feet) in diameter, were used for disposal of animal carcasses and liquid waste from 108-F, and were covered with approximately 1.8 meters (6 feet) of soil in 1955. GPR data from the northern portion of the site indicate considerable disturbed areas which precludes easy and accurate delineation of possible trenches. A 2002 Geophysical Investigation identified nine smaller caissons, measuring one meter (3 feet) in diameter, roughly at grade, on the northwest side of the burial ground. These caissons were located in a mound of soil, approximately 1.5 meters (5 feet) high, running north-south. Uncertainty existed whether these caissons could be the same as the cylindrical sleeves mentioned above because the sleeves measure 1.8 meters (6 feet) in diameter. Additionally, the co-ordinates for the sleeves from HW-33305 (Clukey 1954) places them 90 meters to the west of the caissons.		
Waste Type:	Equipment		
Waste Description:	The site contains miscellaneous radioactive solid wastes, reactor components and hardware. Potential contaminants include: Co-60, Ni-63, Sr-90, Cs-137, Eu-152, Eu-154, U-238, Pu-238, Pu-239/240, chromium, lead, mercury		
Waste Type:	Animal Waste		
Waste Description:	The burial ground contains several long metal pipes with wooden lids used to dispose of contaminated animal carcasses.		
Closure Info:	The Cleanup Verification Package for the 118-F-2 waste site (CVP-2007-00002) documents that the site has been remediated in accordance with the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), Benton County, Washington (Burial Ground ROD), and meets the objectives and goals for interim closure as established in the Burial Ground ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).		

Remedial action began on January 17, 2006, and was completed on August 8, 2007. Excavation of the site involved removing the uncontaminated overburden, the buried contaminated debris, and the underlying contaminated soil over an area approximately 14,197 meters squared (152,815 square feet. Approximately 4,020 bank cubic meters (BCM) (5,260 bank cubic yards [BCY]) of uncontaminated overburden soil was removed and stockpiled near the excavation for subsequent use as backfill. Approximately 16,100 BCM (21,100 BCY) of waste, including

contaminated soil and debris, was disposed at the Environmental Restoration Disposal Facility. At the conclusion of remediation activities, the elevation at the deepest part of the excavation was approximately 117.4 meters (385 feet) above mean sea level with a maximum depth of approximately 4.6 meters (15 feet) below original surrounding ground surface.

The 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (Burial Ground SAP) identified the contaminants of concern (COCs) for the site as cobalt-60, nickel-63, strontium-90, cesium-137, europium-152, europium-154, uranium-238, plutonium-238, plutonium-239/240, chromium, lead, and mercury. In-process characterization samples were analyzed for these COCs and for a wide range of metals, semivolatile organic compounds, polychlorinated biphenyls, pesticides, gamma-energy-emitting isotopes, gross alpha, and gross beta. Based on in-process characterization results, no additional COCs were identified for the burial ground. The analytical results of in-process and waste characterization sampling are located in the Administrative Record under sample delivery groups (SDGs) K0390, K0433, K0436, K0455, and K0592.

A total of 15 discrete soil verification samples (i.e., focused samples) were collected on July 30, 2007, in addition to the statistical cleanup verification samples. Verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods, as required per the SAP. The laboratory-reported data for the focused samples were provided in Appendix D of the CVP.

The results of verification sampling illustrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

In accordance with the CVP evaluation, the verification sampling and modeling results support a reclassification of the 118-F-2 Burial Ground to Interim Closed Out.

Code:	118-F-3	Classification:	Accepted
Names:	118-F-3; Burial Ground No. 3; Minor Construction Burial Ground No. 1	Reclassification:	Interim Closed Out (12/21/2006)
Type:	Burial Ground	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1952
Description:	The site has been remediated and interim closed. The site was backfilled after use. The solid waste burial ground received irradiated reactor parts that were removed during the Ball 3X project to convert the 100-F Reactor from the liquid 3X to the ball 3X safety systems. The southern half of the burial ground ran in a north-south direction and the northern half angled toward the west forming a dogleg.		
Location:	The site was located approximately 85 meters (280 feet) southwest of the 105-F Reactor Building, adjacent to the reactor facility fence. The burial ground boundary was permanently marked by posts numbered F-65-38 through F-65-43.		
Process Description:	This site received irradiated parts from the Ball 3X Project at the 105-F Reactor during 1952. The waste was primarily vertical safety rod (VSR) thimbles and also step plugs. During the project 39 thimbles were removed and buried. Thimbles were described as being 11 meters (35 feet) long, with a diameter of 8.89 centimeters (3.5 inches), and a wall thickness of 0.38 centimeters (0.15 inches). Each weighed about 90 pounds and was made of aluminum. An		

additional 23 thimbles were replaced for maintenance purposes at an earlier date, it was unclear where these were buried.

- Waste Type:** Equipment
- Waste Description:** The site received irradiated reactor parts that were removed during the project to convert the 105-F Reactor from the Liquid 3X to the Ball 3X safety systems. The parts primarily included vertical safety rod thimbles and step plugs. Thirty-eight thimbles were known to have been buried there and possibly as many as 61. The principal radionuclide was short-lived cobalt-60.
- Closure Info:** The cleanup verification package (CVP), CVP-2006-00008, provided documentation that the waste site has been remediated in accordance with the Record of Decision (ROD) for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds). Remedial action objectives and goals have been met for interim closure of the site as established in the 100 Area Burial Grounds ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action began on January 31, 2006 with load out of waste material completed on May 23, 2006. Excavation of the site involved removing metal and concrete debris, including piping, sheet metal, an empty tank structure, a large heat-transfer tower, thimbles, and step plugs. No asbestos-containing material was identified during waste excavation. At the conclusion of excavation activities, the remediation footprint was approximately 3.5 meters (12 feet) below ground surface and the elevation at the bottom of the excavation was 121.5 meters (400 feet) above sea level.

An estimated 4,060 metric tons (4,476 U.S. tons) of contaminated material from the site was disposed at ERDF. In addition, approximately 1,400 cubic meters (49,441 cubic feet) of clean overburden material was excavated from the waste site and stockpiled for potential reuse as backfill.

Waste site contaminants of concern (COCs) were identified in the RDR/RAWP, verification samples, and in the remaining black surface ash located at the northern end of the burial ground. The COCs for the waste site included barium, boron, cobalt-60, cesium-137, nickel-63, and strontium-90.

The interim action ROD, based on a limited ecological risk assessment, established the soil cleanup levels. Although not required by the ROD, a screening comparison against ecological risk screening levels was made for the site COCs, as identified in the RDR/RAWP. The highest exceedance values were observed in the focused sample collected of the black surface ash located north of the site.

Barium, boron, and selenium exceeded screening level values. However, exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. Barium, boron, and selenium were below the range for generic background soil values. Exceedance of soil values by these constituents at the site will be evaluated in the context of additional lines of evidence for ecological effects. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

Final cleanup verification samples were collected in August of 2006 to confirm acceptability of residual contaminant concentrations in the soil. The verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required by the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP). The remediation excavation footprint was classified as one shallow-zone decision unit based on its size and

depth. The overburden (stockpiled soil) and the above-cleanup-level staging pile footprint were separate decision units. As specified in the SAP, four composite samples and a duplicate were collected from each of the waste site decision units.

The cleanup verification sample analytical data results were summarized in Appendix A of the CVP. The sample data were then stored in the Washington Closure Hanford Environmental Restoration project-specific database for evaluation prior to being submitted for inclusion in the Hanford Environmental Information System database.

The remaining soils have been sampled, analyzed, and evaluated. The results of this effort indicated that residual concentrations will support future land uses that can be represented (or bounded) by a rural/residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. This site has no deep zone; therefore, no institutional controls are required. The site was verified to be remediated in accordance with the ROD and may be backfilled.

Code:	118-F-4	Classification:	Accepted
Names:	118-F-4; 115-F Crib; 115-F Pit	Reclassification:	No Action (2/14/2005)
Type:	Crib	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1949
Description:	The area appears today as an open field covered with cobbles. No vegetation grows on the surface. The unit was a small unlined disposal pit/crib.		
Location:	The site was located approximately 122 meters (400 feet) west-southwest of the 105-F Building, just inside the southwest corner of the 100-F Exclusion Area fence.		
Process Description:	The site was a small, unlined pit constructed to receive silica gel from the 115-F drying towers.		
Waste Type:	Chemicals		
Waste Description:	The site contains 270 kilograms (0.3 tons) of silica gel removed from a gel tower in one of the 115-F dryer rooms.		
Closure Info:	A site evaluation was conducted in the preparation of the Remaining Sites Verification Package (RSVP), reclass form number 2004-129. The evaluation consisted of field observations including ground-penetrating radar (GPR) and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present.		

Contaminants of potential concern (COPCs) were identified in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, Rev. 4) included carbon 14, cobalt-60, cesium-137, europium-154, tritium, and strontium-90. Based on further site-specific evaluation, arsenic, barium, cadmium, total chromium, mercury, selenium, and silver were included as COPCs for potential suspect pipeline contents (no suspect pipeline contents were observed during the confirmation sampling field investigation) (BHI-0100F-WI-G00005).

A stratified sampling design with focused sampling was implemented on October 16, 2004, in accordance with the Work Instruction for 118-F-4, 115 Pit (BHI 0100F-WI-G0005). For the sampling event, one test pit and one test trench were excavated. At the southern end of the test trench three composite samples were collected from the bottom of the excavations, and one sample was collected from an area of ashy oil-stained surface soil. The test pit was excavated to explore the area of the waste site described by WIDS and a linear anomaly identified through GPR believed to be a pipe. A test trench was excavated to explore three other areas identified through GPR as containing a high concentration of subsurface anomalous features near the waste site. Three composite samples with HEIS numbers J01XP4 through J01XP9 were

collected on 10/07/04. The results of the confirmation sampling were used to make reclassification decisions for the site in accordance with the TPA-MP-14 (DOE/RL 1998) process.

Detected values of all contaminants of potential concern were below the remedial action goals (RAGs), with the exception of barium, lead, and zinc, which exceeded their respective groundwater or river protection RAGs in the surface soil sample collected in the area of ashy oil stained soil. Barium was detected at 394 milligrams/kilograms; its groundwater protection action level is 132 milligrams/kilograms. Lead was detected at 14.4 milligrams/kilograms; its groundwater and river protection action level is 10.2 milligrams/kilograms. Zinc was detected at 78.2 milligrams/kilograms; its river protection action level is 67.8 milligrams/kilograms. However, RESidual RADioactivity model results (outlined in DO/RL-96-17, Rev. 5) for analogous sites indicate that barium, lead, and zinc will not reach groundwater (and therefore the Columbia River) within 1,000 years. Therefore, residual concentrations achieve the remedial action objectives for groundwater and river protection for all contaminants of potential concern.

This RSVP report demonstrated that the site has met the objectives for no action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly referred to as the remaining sites ROD) (EPA 1999). This report also shows that site soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code:	118-F-5	Classification:	Accepted
Names:	118-F-5; Battelle Sawdust Pit; PNL Sawdust Pit; PNL Sawdust Respository	Reclassification:	Interim Closed Out (5/6/2008)
Type:	Burial Ground	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1975
Description:	The site consisted of a single, unlined trench that received radioactive sawdust from the floors of animal pens in the 100F Experimental Animal Farm. The site now appears as a large raised mound. Prior to backfilling, the site consisted of several trenches oriented north and south.		
Location:	The site was located approximately 305 meters (1000 feet) southeast of the 107-F Retention Basin outside the old perimeter road, and east of the 188-F Ash Disposal Area.		
Process Description:	According to the Technical Baseline Document, WHC-SD-EN-TI-169, past employees remember that sawdust from the Experimental Animal Farm was placed in boxes or 208-liter (55-gallon) metal drums before burial at this site. The material was transported to the sawdust pit in light trucks and the packaged waste was thrown into the pit by hand.		
Related Sites/ Structures:	The site was associated with the 100F Experimental Animal Farm.		
Waste Type:	Animal Waste		
Waste Description:	The site contains low-level activity sawdust and other solids from floors of dog kennels and swine pens. A facsimile sent from W. D. Richmond to M. R. Schneller on March 31, 1971 contains an estimate that the site had received 15 curies of strontium-90 and 0.3 curies of plutonium-239. The site was active and still receiving waste when the facsimile was sent. The facsimile is included in Appendix D of WHC-EP-0087.		

Closure Info: The Cleanup Verification Package 2007-00003 documents that the 118-F-5 PNL (Pacific Northwest Laboratory) Sawdust Pit was remediated in accordance with the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (Burial Ground ROD), and meets the remedial action objectives and goals for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remedial action of the 118-F-5 Burial Ground began on November 28, 2005, and was completed on August 29, 2007. Excavation of the site involved removing the uncontaminated overburden and the underlying contaminated soil. Sawdust was evident throughout the area excavated. There was no evidence of containers (i.e., boxes or metal drums) that reportedly been used for disposal of sawdust.

A small area (given a field designation of 118-F-5A), northwest of the main 118-F-5 excavation, was also remediated. The area had been identified by the geophysics investigation as a disturbed zone distinct from the larger area. During remediation of this area, no evidence of sawdust or other buried waste was discovered. The analytical results of samples taken on August 2, 2007 for the 118-F-5A area were slightly elevated for carbon-14. Additional material was removed from the 118-F-5A excavation and verification samples were collected.

The Burial Ground Sampling and Analysis Plan (SAP) identified the COCs for the site as cobalt-60, plutonium-239/240, strontium-90, carbon-14, and cesium-137.

Collectively, the sites had approximately 7,100 bank cubic meters (BCM) (9,287 bank cubic yards [BCY]) of uncontaminated overburden soil that would be reused as backfill. A total of approximately 25,500 BCM (33,354 BCY) of contaminated soil was excavated and disposed at the Environmental Restoration Disposal Facility.

At the conclusion of remediation activities, the elevation at the deepest part of the excavation was approximately 119.5 meters (392 feet) above mean sea level with a maximum depth of approximately 5.5 meters (18 feet) below ground surface. The remediation excavation covered an area of approximately 7,392 meters squared (79,535 square feet).

Following remediation and field screening of the 118-F-5 Burial Ground, verification sampling was conducted between August 1 and September 12, 2007. The sample results were summarized in Appendix C of the CVP.

The remaining soils at this site have been sampled, analyzed, and modeled. The results indicated that the residual concentrations of COCs at this site do not preclude any future uses (as bounded by a rural-residential scenario) and allow for unrestricted use of the shallow-zone soils (i.e., surface to 4.6 meters [15 feet]) deep. The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code: 118-F-6	Classification: Accepted
Names: 118-F-6; PNL Solid Waste Burial Ground	Reclassification: Interim Closed Out (9/23/2008)
Type: Burial Ground	Start Date: 1/1/1965
Status: Inactive	End Date: 1/1/1973
Description: The site was an unlined burial ground that received animal and laboratory wastes related to the 100F Experimental Animal Farm. A 2002 Geophysical investigation of this burial ground identified six north south trending trenches. Prior to remediation the burial ground was	

designated by HPS-AC-5-40 concrete markers.

- Location:** The site was located southwest of the 105-F Reactor Building and adjoined the southern border of 118-F-1, Minor Construction Burial Ground No. 2, Burial Ground No. 1, Solid Waste Burial Ground No. 2.
- Process Description:** The large tank cars were used for incineration of animal tissue and carcasses. The carcasses were dropped through a manhole and lime was placed on them to facilitate decomposition. When a tank was full, 1,500 to 1,900 liters (400 to 500 gallons) of fuel oil were added to the tank and ignited. The residual ash was left in a tank after each incineration.
- Related Sites/ Structures:** The site was associated with the 118-F-1, Minor Construction Burial Ground No. 2, Burial Ground No. 1, Solid Waste Burial Ground No. 2 and the 100F Experimental Animal Farm.
- Waste Type:** Animal Waste
- Waste Description:** This unit contains animal and laboratory wastes including plutonium-238 contaminated animal ash. The site did not receive reactor related waste.
- Closure Info:** The Cleanup Verification Package 2008-00001 documents that the 118-F-6 Burial Ground (also referred to as the Pacific Northwest Laboratory [PNL] Solid Waste Burial Ground) waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds).

Remedial action at the site began on December 12, 2005, and was completed on December 13, 2007. Remedial action activities involved removing the uncontaminated overburden, the buried contaminated debris, and the underlying contaminated soil. All liquid mixed waste was sent for off-site treatment and disposal.

Approximately 13,100 bank cubic meters (BCM) of material and contaminated soil was disposed at ERDF. Approximately 12,000 BCM of soil (overburden/layback stockpile material) was segregated for use as clean backfill material. At the conclusion of excavation activities the remediated area was approximately 7,075 meters squared (76,155 square feet) with a maximum depth of approximately 6.5 meters (21 feet). The deepest part of the remedial excavation (trench 4) was at an elevation of 115.5 meters (379 feet) above sea level.

All areas identified by geophysical survey as potentially containing debris or waste were excavated. An area north of trench one showed subsurface disturbance in the geophysical survey, however, this portion of the burial ground did not contain waste or contamination. It is likely that it was excavated for the purpose of waste disposal but was never used.

Wastes encountered in the 118-F-6 Burial Ground included a railroad tank car, laboratory equipment and bottles, cylinders and crushed drums, biological and animal wastes and carcasses, and limited reactor hardware. Some of these items contained small amounts of liquids.

The Burial Ground Sampling and Analysis Plan identified contaminants of concern (COCs) as cobalt-60, strontium-90, and plutonium-239/240. Plutonium-238 was identified as a COC based on a 1994 BHI report. During excavation, in-process samples were collected as necessary and analyzed for the identified COCs and for a wide range of metals, semi-volatile organic compounds, polychlorinated biphenyls, pesticides, gamma energy emitting isotopes, gross alpha activity, and gross beta activity. Based on the results of this sampling, europium-152 and cesium-137 were added as COCs.

The laboratory-reported data results for all constituents were stored in the Environmental

Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix C of the CVP. Results of the verification sampling, laboratory analyses, and data evaluations indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River were met.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The excavation area had a maximum depth of approximately 6.5 meters (21 feet), which included a shallow zone and a deep zone. However, the entire excavation area was considered one decision unit, and will be closed out using the more restrictive shallow zone cleanup criteria; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The results also demonstrated that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code:	118-F-7	Classification:	Accepted
Names:	118-F-7; Concrete Box; 100-F Miscellaneous Hardware Storage Vault	Reclassification:	Interim Closed Out (10/30/2006)
Type:	Storage	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and interim closed out. The site consisted of an inactive solid waste storage vault used for temporary storage of slightly contaminated reactor parts. The majority of the vault was underground.		
Location:	The site was located just south of the 105-F Reactor Building south security fence, west of 116-F-10 and east of the rail line that connected to the 105-F Reactor Building.		
Process Description:	This site was an inactive solid waste storage vault used from 1945 to 1965 for temporary storage of slightly contaminated reactor parts that could be recovered and reused for the 100-F Area reactor operations. The storage vault was a partially buried, light-colored concrete box that extended approximately 46 centimeters (18 inches) above grade. The vault was approximately 23 meters squared (247.5 square feet) and 2.4 meters (8 feet) deep. It was covered with a wooden lid.		
Waste Type:	Equipment		
Waste Description:	This site served as temporary storage for miscellaneous reactor hardware. In 1965, contamination levels within the box were 200 to 300 counts-per-minute. There was some confusion in existing documentation as to whether equipment still remained in the vault. Table 11 of Miller and Wahlen (WHC-EP-0087) reported that 134,700 kilograms (148.3 tons) of lead of 5,600 kilograms (6.2 tons) of cadmium remains in the vault. Appendix A of the same report states that the vault contains only a small amount of radioactive material. DeFord (1993) reports that site personnel believe that the vault was empty.		
Closure Info:	The Cleanup Verification Package, CVP-2006-00007, documented that the waste site has met the remedial action goals (RAGs) and the remedial action objectives (RAOs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), (ROD).		

The vault was a partially buried concrete box that extended 46 centimeters (18 inches) above grade and was covered with a wooden lid. Underground Radioactive Material signs were

posted on the wooden lid.

Remedial action at the site began on January 31, 2006, with load out completed in April 2006. Excavation of the site involved removing the concrete vault structure, the wooden roof structure, and underlying contaminated soil. A single lead/cadmium reactor poison piece, measuring 15 centimeters (6 inches) in length and 3.8 centimeters (1.5 inches) in diameter, was discovered in the vault during excavation.

Waste site contaminants of concern (COCs) identified in the RDR included cobalt-60, cesium-137, silver-108M, strontium-90, cadmium, copper and lead. At the request of EPA cesium-137 and strontium-90 were added to the site verification COC list. Additionally, copper was added as a COC as a result of a single detection above the RAGs within the above cleanup level (ACL) staging pile footprint.

Soil cleanup levels were established in the interim action ROD based on a limited ecological risk assessment. Although not required by the ROD, a comparison against ecological risk screening levels were made for the site COCs. Copper and lead exceeded screening level values; however, exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. The exceedance of soil screening values by lead and copper concentrations at the site will be evaluated in the context of additional lines of evidence for ecological effects. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

To confirm acceptability of residual contaminant concentrations in the soil, final cleanup verification samples were collected and analyzed on June 5, 2006 for the established COCs. The verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (SAP). The cleanup verification sample analytical data results were stored in the Environmental Restoration project-specific database for data evaluation prior to being submitted for inclusion in the Hanford Environmental Information System database. The verification data were also summarized in Appendix A of the CVP.

At the conclusion of excavation activities, the elevation at the bottom of the excavation was 123 meters (403.5 feet). The excavation area was 138 meters squared (1,487 square feet) with an approximate depth of 3.0 meters (9.8 feet). The total of an estimated 104 metric tons (115 U.S. tons) of material was disposed at ERDF.

The remaining soils have been sampled, analyzed, and evaluated. The results of this effort indicated that residual concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. This site has no deep zone; therefore, no institutional controls are required. The site was verified to be remediated in accordance with the ROD.

Code: 120-F-1	Classification: Accepted
Names: 120-F-1; Glass Dump	Reclassification: Interim Closed Out (6/27/2008)
Type: Trench	Start Date:
Status: Inactive	End Date:
Description: The site consisted of two distinct disposal areas, one a trench that ran east to west.	
Location: The site was located 275 meters (772 feet) south of 128-F-1, 100-F Burning Pit and south-southeast of the 105-F Reactor.	

Process Description: The site was originally described as a single, open trench filled with fluorescent tubes, incandescent light bulbs, instrument vacuum tubes, small alkaline batteries, chemical bottles and laboratory apparatus with a second area of disturbed soil with surficial plastic debris approximately 46 meters (150 feet) to the southeast. Due to its proximity, the probable source of the debris found at the 120-F-1 waste site is believed to be the 108-F Building, but the site may have contained debris from other locations within the 100-F Area.

Waste Type: Misc. Trash and Debris

Waste Description: The site is covered with approximately 0.61 meters (2 feet) of fluorescent tubes, incandescent light bulbs, instrument vacuum tubes, and small AAA, C, and D batteries. The site also contains an assortment of chemical bottles, both large and small.

Closure Info: In accordance with the Remaining Sites Verification Package 2008-028, the verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA 1999).

On January 21, 2006, prior to remedial activities, an industrial hygiene investigation of the site was conducted to determine whether beryllium was present in the phosphor material used in the fluorescent tubes dumped at the 120-F-1 waste site.

Research indicated that prior to 1949 beryllium was used in the manufacture of fluorescent light bulbs, therefore, the samples were analyzed for metals, including mercury and beryllium. It was determined that the fluorescent tubes were not manufactured with beryllium and that beryllium would not be a health concern during remove, treat, and dispose (RTD). However, mercury and, to a much lesser extent, metals such as manganese, nickel, and cadmium were detected and determined to be possible airborne inhalation hazards. The previously interim-stabilized waste site was opened using a front-end loader. It was discovered that the plywood barrier had failed and the fluorescent tubes were crushed. Pieces of the fluorescent tubes and accompanying soils were sampled.

Remedial action at the 120-F-1 waste site began in September 2007 and was completed in March 2008. Two distinct areas were excavated resulting in disposal of approximately 1,505 bank cubic meters of contaminated materials to the Environmental Restoration Disposal Facility.

In preparation for remedial action at the site, a standard geophysical investigation was conducted in the vicinity of the glass dump. The second area of debris to the southeast proved to be larger than the glass dump. It contained concrete, wire debris, small drums with heavy oil-type petroleum hydrocarbons, and some stained soil with pesticides (dichlorodiphenyldichloroethylene [DDE] and dichlorodiphenyltrichloroethane [DDT]). The second area was remediated as part of the 120-F-1 Glass Dump Waste Site.

Verification sampling for both the northwest and the southeast excavations was performed in December 2007 to determine if the remedial action goals had been met. The contaminants of potential concern (COPCs) for verification sampling included inductively coupled plasma metals, hexavalent chromium, mercury, semivolatile organic compounds, and polychlorinated biphenyls (PCBs). In the southeast excavation, total petroleum hydrocarbons were also COPCs.

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford

Environmental Information System and were summarized in Appendix C of the RSVP.

These results show that residual soil concentrations supported future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrated that residual contaminant concentrations supported unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]). Contaminant levels remaining in the soil were protective of groundwater and the Columbia River. Although a portion of the excavation extended into the deep zone, the site was closed out using shallow zone criteria; therefore, no deep zone institutional controls were required.

Code:	126-F-1	Classification:	Accepted
Names:	126-F-1; 184-F Powerhouse Ash Pit; 188-F Ash Disposal Area	Reclassification:	Interim Closed Out (9/20/2007)
Type:	Coal Ash Pit	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965

Description: This waste site consisted of an area that had received coal ash from the 100-F Area coal-fired steam plant that operated from 1944 to 1965. Coarse textured bottom ash and boiler slag were evident at the site. The northern portion of the ash pit was delineated with AC-540 concrete markers (approximately 2.4 hectares [6 acres]).

Location: The site was located southeast of the 116-F-14, 107-F Retention Basin.

Process Description: The 126-F-1 site was created as a result of disposal of ash from the 184-F coal-fired steam plant that operated between 1944 and 1965. The ash pipeline originally terminated at a point between the aboveground reactor cooling water effluent lines that discharged to the 107-F Retention Basins. Large amounts of coal ash was sluiced to the ash pit with raw river water through a 20 centimeter (8 inch) ashcolite pipe. Leakage of reactor cooling water from the 116-F-14, 107-F Retention Basins flowed into the northern portion of the ash pit causing it to become radiologically contaminated., and was contained with an earthen dike. The coal ash sluice pipe was extended through the dike in the late 1940s to a point farther south, establishing coal ash discharge to the southern portion of the coal ash pit area.

Related Sites/ Structures: The site was related to the 184-F Powerhouse.

Waste Type: Ash

Waste Description: Unknown amounts of coal ash from the 184-F Powerhouse were sluiced to this unit with raw river water. The ash has been analyzed using the EP Toxicity Test in accordance with Washington Administrative Code (WAC 173-303), and no hazardous materials were found. This site also received low-level radionuclides from effluent system leakage. Radioactive contamination in excess of 50,000 counts/minute existed in the northwest corner of the pit.

Closure Info: The cleanup verification package (CVP), CVP-2002-00004 documented that the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 126-F-1, 184-F Powerhouse Ash Pit have been attained. The RAOs/RAGs were established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD).

Portions of the Ash Pit were contaminated by unplanned releases of 105-F Reactor cooling water effluent. The northern portion of the site has been remediated and backfilled with clean soil to adjacent grade elevations. No remedial action was necessary in the southern portion of the 126-F-1 site, but this portion of the site could not be closed out until radioactive decay

occurred from the original sampling date in 2001 to 2007 to meet the radiological dose limit of 15 milirem/year above natural background.

The contaminants of concern (COCs) for the Ash Pit evolved from the time the site first appeared in the RDR/RAWP until the approval of the Sampling and Analysis Instruction for Confirmatory Sampling of the Southern Portion of the 126-F-1 Ash Pit. The COCs for the Ash Pit waste site consisted of the following: cesium-137, cobalt-60, europium-152, europium-154, europium-155, strontium-90, uranium-234, uranium-235, uranium 238, and arsenic.

Cleanup verification sampling in the northern portion of the site began on July 16, 2002, and concluded on July 17, 2002. The samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the SAP. The cleanup verification sample analytical data were stored in the Hanford Environmental Information System and were summarized in Appendix A of the CVP.

Remedial action at the site began on October 5, 2001. Excavation of the site involved removing the overburden materials and underlying contaminated soil in the northern portion of the site only. Based on field screening, overburden materials identified as potentially clean were placed in a stockpile for potential use as backfill.

The excavation of the northern portion of the site was completed on June 17, 2002, it measured approximately 10,689 meters squared (115,052 square feet) in area with a maximum depth of approximately 4 meters (13 feet). The average bottom elevation of the excavation was 119.8 meters (393.0 feet). A total of approximately 100,964 metric tons (111,313 tons) of contaminated material was disposed at ERDF.

These results also indicated that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

Remedial actions were not required for the northern and southern portions of the site deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	128-F-1	Classification:	Accepted
Names:	128-F-1; 100-F Burning Pit; 100-F Burning Pit No. 1	Reclassification:	No Action (12/8/2003)
Type:	Burn Pit	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification. The site was used to dispose of nonradioactive, combustible materials from the 100F Area. The site has been backfilled.		
Location:	The site was located directly east of the 126-F-1 Coal Ash Disposal Pile and west of the 118-F-5 Burial Ground.		
Waste Type:	Misc. Trash and Debris		
Waste Description:	The site was used for the disposal of nonradioactive, combustible materials, such as paint waste, office waste, and chemical solvents.		
Closure Info:	In 2003 the waste site evaluation 0100F-CA-0165, Rev. 2 for this site demonstrated that information which included sample results, a field walkdown (site evaluation), and historical data supported reclassification to "No Action". The no action reclassification is documented by		

the signed reclassification form, Control Number 2003-35. However, the attached documentation mistakenly states that the evaluation supports interim closure.

Sampling and evaluation of this site have been performed in accordance with remedial action objectives and goals established by the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington, July 1999 (Remaining Sites ROD). The selected action involved (1) sampling of the site, (2) demonstration through a combination of field screening and confirmational sampling that cleanup goals have been met, and (3) proposal of no further action.

Residual material at the site achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).

Residual soil concentrations support unrestricted future use of shallow zone soil (surface to 15 feet) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 128-F-3	Classification: Accepted
Names: 128-F-3; PNL Burn Pit	Reclassification: Interim Closed Out (10/20/2006)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed.	
Location: The site was located 25 meters (82 feet) south of the dirt access road that passed south of the 126-F-1 Ash Pit and approximately 70 meters (230 feet) west of the southeast corner of the ash pit.	
Waste Type: Misc. Trash and Debris	
Waste Description: It was not known what was burned at the site. However, Pacific Northwest Laboratory (PNL) and Westinghouse Hanford Company (WHC) employees verified that the site was used for burning. It was assumed the burned material came from the Experimental Animal Farm.	
Closure Info: The Remaining Sites Verification Package, RSVP-2006-042, documents that the waste site has met the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).	

The contaminants of potential concern (COPCs) were identified based on existing historical information for the site and consideration of potentially disposed materials. They included asbestos, arsenic, barium, cadmium, chromium (total and hexavalent), lead, selenium, silver, mercury, pesticides, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), gamma energy analysis (GEA), gross alpha, and gross beta.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against

ecological risk screening levels was made for the site contaminants of concern, contaminants of potential concern, and other constituents. Screening levels were not exceeded for the site constituents, with the exception of barium, boron, and vanadium.

Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. It is believed that the presence of vanadium does not pose a risk to ecological receptors as residual concentrations are below site background levels. The exceedances of soil screening values by residual barium and boron concentrations at the site will be evaluated in the context of additional lines of evidence for ecological effects. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the waste site.

Remediation was performed on September 20, 2005, and consisted of the removal of coal ash and surrounding soil associated with excavation of the geophysical anomaly. The excavation was also performed to assure no residual debris or ash associated with historical burning was present at the site. During remediation, a limited amount of wood debris and ash associated with burning was found and removed. The excavation proceeded to a depth of approximately 1.1 meters (3.5 feet) within the site boundary. Approximately 690 metric tons (760 US tons) of coal ash, burn ash, debris, and soil was removed to Environmental Restoration Disposal Facility.

Verification sampling was performed on April 10 and 11, 2006, to collect data to make a decision as to whether the remedial action objectives had been reached. All analytical data were found acceptable for decision-making purposes. The verification sample analytical data were stored in the ENRE project-specific database prior to being submitted for inclusion in the HEIS database. The verification sample analytical data were also summarized in Appendix B of the RSVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The site has been evaluated and remediated in accordance with the Remaining Sites ROD and the RDR/RAWP. Statistical and judgmental sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification to interim closed out.

Code:	1607-F1	Classification:	Accepted
Names:	1607-F1; 1607-F1 Sanitary Sewer System; 1607-F1 Septic Tank; 1607-F1 Septic Tank and Associated Drain Field; 100-F Experimental Animal Farm Septic Tank; 124-F-1	Reclassification:	Interim Closed Out (3/14/2008)
Type:	Septic Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1965
Description:	The unit includes a septic tank, drain field and associated pipeline. The septic tank is constructed of reinforced concrete; the walls and floor are 25 centimeters (10 inches) thick. The septic tank has a capacity of 16561.18 liters (4375 gallons). The system could support 125		

persons assuming input of 130 liters (35 gallons) per capita per day and a one day retention period. The drain field is constructed of 10-centimeter (4-inch) vitrified pipe, concrete pipe, or drain tile with a total of 304.8 meters (1000 linear feet) of piping (2.4 linear meters [8 linear feet] per capita). The four laterals are open jointed, 38 meters (125 feet) long, and spaced 2.4 meters (8 feet) apart.

Location: The 1607-F1 Septic Tank is located south of the 105-F Reactor Building. The septic tank and drain field are approximately 91.4 meters (300 feet) west of the 1720-F Building.

Related Sites/ Structures: The site was related to 100-F-26:8 Influent pipelines, 1701-F Badge House (security checkpoint), the 1709-F Fire Station, and the 1720-F Administrative Office and change room for security patrol personnel.

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary sewage from the 1701-F Badge House (security checkpoint), the 1709-F Fire Station, and the 1720-F Administrative Office and change room for security patrol personnel. Since the site was connected to administrative and support facilities (security and fire protection), the site should not have received hazardous contaminants.

Closure Info: 1607-F1 and 100-F-26:8 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP) for the 1607-F1 sanitary sewer system and 100-F-26:8 sanitary sewer pipelines waste sites has documented that they have met the Remedial Action Objectives (RAOs) and the corresponding Remedial Action Goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) for interim closure.

Remediation of the 1607-F1 and 100-F-26:8 waste sites were performed from January 8 to April 3, 2007 and documented as one RSVP. Both sites were excavated to approximately 3.4 meters (11 feet) below grade resulting in a combined volume of approximately 464 cubic meters (607 cubic yards) of material stockpiled for disposal at the Environmental Restoration Disposal Facility (ERDF). Approximately 266 meters (872 feet) of pipeline were removed during remediation. There were no anomalies or stained soil discovered during remediation.

During pipeline excavation, a french drain was discovered on the west side of the former 1709-F facility. Although this french drain was independent of the pipelines, it was removed.

The COCs/COPCs were established using the confirmatory sampling analytical results. Based on these results, the COC/COPCs for the 1607-F1 and 100-F-26:8 waste sites verification sampling design were the metals barium, lead, and zinc; pesticides (dichlorodiphenyl-dichloroethane [DDD], dichlorodiphenyl-dichloroethylene [DDE], dichlorodiphenyl-trichloroethane [DDT]); SVOCs (benzo(a)pyrene, benzo(k)fluoranthene, and chrysene); and PCBs (aroclor-1260). Petroleum hydrocarbons and mercury were added as COCs/COPCs based on the discovery of the 1709-F french drain during remediation of the 100-F-26:8 pipelines. These additions were based on the assumption that the probable sources of effluent in the french drain were from hose drying and truck washing activities. Therefore, potential contaminants in the effluent were from motor oil leaks and broken mercury switches.

Verification sampling for the remediated 1607-F1 and the 100 F 26:8 waste sites was performed in September and October 2007. Evaluation of the verification sampling results shows that all direct exposure cleanup levels were met for the four decision units of the 1607-F1 and 100-F-26:8 waste sites: the 1607-F1 septic tank and 100-F-26:8 pipelines excavation footprint, 1709-F

french drain, road crossing areas, and overburden stockpiles.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. No institutional controls are required for this site to prevent uncontrolled drilling or excavation into deep zone [i.e., below 4.6 m (15 ft)].

State background value of 20 mg/kg (Washington Administrative Code [WAC] 173-340), arsenic was added to the final list of COCs for the site.

On July 21, 2000, the majority of the excavation was completed. Because of elevated lead levels in an area of the site excavation, additional soil was excavated in December 2000. Pre- and post-remediation topographic maps including overburden pile locations are shown in the site Closeout Verification Package (CVP). The general average depth of the bottom of the excavation in the deep zone sampling areas was 5.6 meters (18.4 feet) below ground surface. The majority of the site excavation depth was 4.6 meters (15 feet) or less below ground surface, generally corresponding with the former pipeline invert depth. The excavation was approximately 17,629 square meters (189,660 square feet) in area. Approximately 32,725 metric tons (35,998 tons) of material from the site were disposed of at ERDF.

Cleanup verification sampling began on July 17, 2000, and was finished on December 12, 2000. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the Sample Analysis Plan (SAP) (DOE/RL-96-22).

The CVP demonstrated that remedial action at the 100-H-21 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action Record of Decision (ROD, EPA 1995) and Remedial Design Report/Remedial Action Work Plan (RDR/RAWP, DOE/RL-96-17). The remaining soils at the 100-H-21 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-H-21 Pipelines site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in overburden and the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-H-21 Pipelines site is verified to be remediated in accordance with the ROD. The overburden has been verified as suitable for use as backfill in accordance with the ROD.

Code:	100-H-3	Classification:	Accepted
Names:	100-H-3; 1716-H Garage Fuel Tank Site	Reclassification:	Interim Closed Out (6/1/2011)
Type:	Storage Tank	Start Date:	1/1/1949
Status:	Inactive	End Date:	
Description:	The site may contain one or more underground storage tanks (USTs) from the 1716-H Garage. The garage has been demolished. Some disturbance of the concrete pavement is visible at the site.		
Location:	The 1716-H Garage was located west of the 107-H Retention Basin (116-H-7) and north of the 1717-H Combined Shops.		
Related Sites/ Structures:	The tanks supported the 1716-H Garage.		
Closure Info:	The 100-H-3 waste site was remediated between December 21 and 30, 2009. Approximately 894 bank cubic meters (1,170 bank cubic yards) of soil and debris were removed from the site and disposed at the Environmental Restoration Disposal Facility. Remediation included removal of the pump island as well as the fuel supply lines.		

At the expected location of the tanks, the excavation continued until the approximate depth of

3.5 m (11.5 ft) was reached. The adjacent french drain and debris at the former tank location were also removed. No soil staining or anomalous hazardous debris was noted during excavation and loadout of material associated with the waste site.

Code: 100-H-4 **Classification:** Accepted
Names: 100-H-4; 1717-H Hot Shop; Contaminated Storage Unit; French Drain **Reclassification:** Rejected (6/1/2011)
Type: Maintenance Shop **Start Date:**
Status: Inactive **End Date:**

Description: The french drain cannot be visually located.

Location: The 1717-H Maintenance Shop was located west of the 107-H Basins and south of the 1716-H Service Station. The building has been demolished. An employee interview indicates a portion of the shop was used for working on very low-level radioactive materials. Drawing SK-1-7325 identifies two "hot shops." Drawing SK-1-7328 proposed a building addition, also designated as a "hot shop." Drawing P-9343 indicates an existing drywell.

Waste Type: Water

Waste

Description:

Closure Info: Remedial action at the 100-H-4, 1717-H Hot Shop, French Drain, and Contaminated Storage Unit waste site was performed between January 4 and 18, 2010. The excavation resulted in approximately 3,148 bank cubic meters (4,117 bank cubic yards [BCY]) of contaminated soil. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF).

The footprint of the 1717-H Building, including the 1717-H Hot Shop and the foundation wall, was excavated to a depth of approximately 1 m (3 ft) below ground surface. The excavation activities included remediation of former locations of decontamination tanks and exterior exhaust, as per approved excavation design. The french drain located northeast of the building footprint was excavated to a depth of approximately 4 m (12 ft). A concrete floor trap with metal lid and insulation piece was uncovered and removed. All pieces including the drainpipe were excavated and loaded out in a void-space waste disposal can for grout filling at ERDF. The process sewer line and the sanitary sewer line were completely removed within the 1717-H Building footprint and excavation boundary. Other materials and debris such as concrete and asphalt were excavated and removed from the waste site.

Due to remediation exceeding the excavation design dimensions, two additional features were uncovered: a 6-in.-diameter cast iron (CI) pipeline running in the east-west direction to the northern side of the 1717-H footprint excavation and a Y-shaped concrete thrust block structure. These two features were left in place. Although not confirmed by historical drawings or historical aerial photographs, it is suspected that the 6-in.-diameter CI pipeline is part of the 100-H-35, 100-H Clean Water Pipelines, 100-H Service Water Pipelines. However, due to the lack of available historical information, this pipeline will be included with 100-H-56, H-Area Miscellaneous Pipelines. The Y-shaped thrust blocks do not encase any pipelines. These concrete thrust blocks do not appear on any historical drawings or historical aerial photographs

Code: 100-H-5 **Classification:** Accepted
Names: 100-H-5; 107-H Buried Sludge Site; 107-H Grave; 107-H Retention Basin Sludge Burial Site; Sludge Disposal Trench **Reclassification:** Interim Closed Out (12/18/2000)

Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	
Description:	This site has been remediated and closed out. The trench was about 100 meters (328 feet) long, 16 meters (52 feet) wide, and 4.6 meters (15 feet) deep.		
Location:	The site is located east of the southeast corner of the 107-H Retention Basin. In 1997, a Ground Penetrating Radar (GPR) scan was done to establish the location of the trench. The GPR scan placed the trench approximately 52 meters (170 feet) east of the southeast corner of the 116-H-7 Basin, in an area formerly used for orchards. According to the Technical Baseline Report, people interviewed for information on this site placed it in several locations, including farther north, immediately adjacent to the 107-H Retention Basin or further south and east of the southeast corner of 107-H. (Note the references in the technical baseline report are inverted.)		
Process Description:	The site is a trench that received an unknown quantity of sludge removed from the 107-H Retention Basin during repair work in the Spring of 1953.		
Related Sites/ Structures:	The 107-H Retention Basin (116-H-7) is related to this site.		
Waste Type:	Sludge		
Waste Description:	In 1975, samples of sludge from the basin floor had a maximum Geiger-Mueller (GM) probe reading of 20,000 counts/minute. Samples had an average concentration of 3.1E+04 picocuries/gram beta/gamma and 57 picocuries/gram of plutonium-239/240. The sludge buried in the trench would have similar characteristics.		
Closure Info:	The site was remediated to meet the cleanup standards and closed out on December 12, 2000.		
	<p>Remedial action objectives and goals for the 100-H-5 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision (ROD) for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 1998). Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established. Waste site contaminants of concern (COCs) identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE-RL 1998).</p> <p>The COCs identified for this site are cobalt-60, cesium-137, europium-152, europium-154, plutonium-238, plutonium-239/240, strontium-90, and lead.</p> <p>Remedial action at the 100-H-5 site began on September 27, 1999. Excavation of the site involved removing the overburden materials, buried sludge and debris, and underlying contaminated soil. Based on field screening (discussed in Section 4.2 of the CVP), overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed of at the Environmental Restoration Disposal Facility (ERDF). During site excavation, the area where buried sludge and debris were encountered at the south end of the site was not as wide as the estimated footprint of the sludge trench. To avoid unnecessarily excavating and disposing of uncontaminated soil, the excavation at the south end of the site narrowed from the original estimated design site footprint. On April 28, 2000, the excavation was completed.</p> <p>The elevation of the bottom of the excavation was at 121.4 meters (398.2 feet) upon completion. The surface reference elevation and design backfill elevation are 126.5 meters</p>		

(415 feet). The excavation was approximately 3,308 square meters (35,589 square feet) in area with a maximum depth of approximately 5.1 meters (16.7 feet). Approximately 23,525 metric tons (25,877 tons) of material from the site were disposed of at ERDF.

The Cleanup Verification Package (CVP) demonstrated that remedial action at the 100-H-5 site achieved the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) established in the approved interim action ROD amendment (EPA 1997) and Remedial Design Report/ Remedial Action Work Plan (RDR/RAWP) (DOE-RL 1998). The remaining soils at the 100-H-5 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-H-5 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF, that residual COC concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-H-5 site has been verified to be remediated in accordance with the ROD amendment.

Code:	100-H-7	Classification:	Accepted
Names:	100-H-7; French Drain A	Reclassification:	No Action (7/28/2009)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consists of a french drain and an adjoining pipeline. It is a vertical, 76-centimeter (30-inch) diameter vitrified clay pipe with a metal lid. Its upper surface is at grade. A 6.3 centimeter (2.5 inch) steel pipe exits the reactor building at a point in line with the drain, suggesting the possibility of drainage from the 105-H Building to the drain. The drain had no markings.		
Location:	The site was located south-southeast of the northeast corner of the 105-H reactor building.		
Related Sites/ Structures:	The drain was associated with the 105-H Reactor Building.		
Waste Type:	Process Effluent		
Waste Description:			
Closure Info:	The Remaining Sites Verification Package (RSVP-2008-056) for the 100-H-7 waste site has documented that the remedial action objectives (RAOs) and remedial action goals (RAGs) have been met as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL -2006-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) and is recommended for reclassification to No Action.		

Confirmatory sampling for the site was performed in November 2008 to collect data to determine if the site met remedial action goals (RAGs). The contaminants of potential concern (COPCs) for confirmatory sampling as listed in the sampling and analysis plan included: cobalt-60, cesium-137, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium, lead, mercury, semivolatile organic compounds, and polychlorinated biphenyls (PCBs).

Results of the confirmatory sample analysis showed groundwater and/or Columbia River protection RAGS were exceeded by copper, lead, zinc, indeno(1,2,3-cd) pyrene, and aroclor-1260. However, RESidual RADioactivity (RESRAD) modeling illustrated that these contaminants were not predicted to reach groundwater from this site within the next 1,000 years. All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database. The data were also summarized in Appendix A of the RSVP.

A geophysical survey was performed for the purpose of obtaining an excavation permit (Bergstrom and Mitchell 2008). The results did not detect the french drain, they did show the site to be an area of scattered buried debris and possible buried utilities. Confirmatory sampling activities, however, found the french drain intact (minus the metal lid). The drain pipe from the 105-H building was also found in place connected to the 100-H-7 french drain.

Prior to confirmatory sampling activities, it was unknown whether demolition and decommissioning of the 105-H Reactor Building also removed the 100-H-7 waste site. Confirmatory sampling activities, found the french drain intact (minus the metal lid). The drain pipe from the 105-H building was also found in place connected to the 100-H-7 french drain. Sampling results show that residual contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	100-H-8	Classification:	Accepted
Names:	100-H-8; French Drain B	Reclassification:	No Action (12/3/2009)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consisted of as a 91-centimeter (36-inch) diameter concrete pipe with a steel lid. The drain was buried vertically with its upper surface at grade and was filled with gravel to within 20 centimeters (8 inches) of its top. Prior to site evaluation the drain was surrounded by a rope and posts and signs that read "Danger - Keep Out".		
Location:	The unit is located east-southeast of the northeast corner of the 105-H Reactor Building.		
Process Description:	During site evaluation it was determined that this drain was designed and used to collect steam condensate from a former overhead steam line that serviced the emergency cooling water tower located on the northeast side of the 105-H Reactor Building. Sanitary river water was supplied to the 184-H power house, where it was converted to steam by the boiler and carried through aboveground steam lines to the 100-H Area facilities. Boiler water may have been treated with sodium sulfate, trisodium phosphate, and/or chromates.		
Related Sites/ Structures:	This site was associated with the 105-H reactor building.		
Waste Type:	Process Effluent		
Waste Description:			
Closure Info:	In accordance with evaluation for the Remaining Sites Verification Package, RSVP-2006-031,		

it has been determined that site reclassification to No Action was supported by confirmatory sampling results. The results determined that the current site conditions meet the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.

Confirmatory sampling was performed in November 2008. The waste site was sampled for inductively coupled plasma metals, mercury, hexavalent chromium, and polychlorinated biphenyls (PCBs) at the request of the Washington State Department of Ecology and in agreement with the U.S. Department of Energy, Richland Operations Office. These were the only COPCs retained for confirmatory sampling of this site. Soil pH was performed to support site evaluation. Analytical results from confirmatory sampling show only copper and lead present at concentrations exceeding groundwater and river protection remedial action goals. However, RESidual RADioactivity modeling shows these contaminants are not expected to reach groundwater within the next 1,000 years.

Excavation of the site revealed the french drain was in place and largely intact. The metal lid described in WIDS was not in place. Inside the french drain were leach rocks that were stained red. There was no fine sediment inside the drain to sample. No elevated VOCs or radiological readings were detected on the french drain contents. Several pipes of various sizes were found during the excavation. None were intact or in service. Based on the location and size of the pipes they were determined to be either water or steam lines. No material was evident in the pipes to sample and no elevated VOCs or radiological readings were detected on the pipes. The discovered pipes were left in the excavation when it was backfilled.

The vertical concrete pipe comprising the french drain was found to extend to a depth of approximately 3.7 m (12-ft). Directly below the drain, red stained soil was visible extending to the bottom of the excavation. The red stain also extended horizontally in a thin layer around the sides of the excavation. The color of the stained soil beneath the french drain matched the stain on the rocks within the drain. A primary and duplicate sample was collected of the stained soil directly below the drain. The material present inside the drain consisted of only rock with no fine grained material and therefore was not amenable for sample collection.

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and were summarized in Appendix C of the RSVP.

Evaluation of the analytical results indicated the site meets RAGs for direct exposure, groundwater, and river protection. The site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario, and no institutional controls are required. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 100-H-9	Classification: Accepted
Names: 100-H-9; French Drain C	Reclassification: Interim Closed Out (6/22/2006)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The waste site consisted of a vertical 61-	

centimeter (24-inch) diameter concrete pipe with a rusted metal lid. The drain had no markings.

Location: The unit was located east of the northeast corner of the 105-H Reactor Building, adjacent to the north wall.

**Related Sites/
Structures:** This unit was associated with the 105-H Reactor Building.

Waste Type: Process Effluent
**Waste
Description:**

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random

sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code:	100-H-10	Classification:	Accepted
Names:	100-H-10; French Drain D	Reclassification:	Interim Closed Out (6/22/2006)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. The unit consisted of a vertically buried 122-centimeter (48-inch) diameter vitrified clay pipe with a steel lid. It was suspected to be a french drain. The unit had no markings.		
Location:	The unit was located north of the center point of the 105-H Reactor Building, adjacent to the north wall.		
Waste Type:	Process Effluent		
Waste Description:			
Closure Info:	118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for		

the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code: 100-H-11	Classification: Accepted
Names: 100-H-11; Expansion Box French Drain E	Reclassification: Interim Closed Out (6/22/2006)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed. It appeared that the drain was installed to provide drainage for an expansion box. The drain had no markings.
Location:	The unit was located next to the west wall of the south wing of the 105-H Reactor Building.
Process Description:	This unit was a vertical 0.76 meters (30-inch) diameter steel manhole set in concrete that provided access to it. It appeared to be a french drain (drain) located at the bottom of a concrete expansion box in which a 1.52 meters (60-inch) steel effluent line made a 40-degree turn to the southwest. The 100 H-11 french drain provided drainage for any leakage that might have occurred from the effluent line within the expansion box.
Closure Info:	118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean

backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code:	100-H-12	Classification:	Accepted
Names:	100-H-12; Expansion Box French Drain F and Shielding Lead	Reclassification:	Interim Closed Out (6/22/2006)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. The site consisted of a french drain, accessed through a 0.76-meter (30-inch) vertical steel manhole set in a concrete pad.		
Location:	The site was located in the corner formed by the east wall of the south wing and the south wall of the east wing of the 105-H Reactor Building. The drain was at the bottom of a concrete expansion box.		
Process Description:	The site consisted of a french drain, accessed through a 0.76-meter (30-inch) vertical steel manhole set in a concrete pad. The french drain was located at the bottom of a concrete expansion box, in which a 1.5-meter (60-inch) steel reactor effluent pipeline made a 90-degree turn from south to east. The french drain appeared to have been installed to provide drainage for any leakage that might have occurred in the expansion box. The drain had no markings.		
Related Sites/Structures:	The site was associated with the 105-H Reactor Building and radioactive process effluent pipelines. 100-H-11, Expansion Box French Drain F, was of a similar structure and over the same radioactive process effluent pipeline.		
Waste Type:	Process Effluent		
Waste Description:	The french drain may have received radioactive process effluent.		
Closure Info:	118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.		

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and

below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that

residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code:	100-H-13	Classification:	Accepted
Names:	100-H-13; French Drain G	Reclassification:	Interim Closed Out (6/22/2006)
Type:	French Drain	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed. The site consisted of a french drain that was constructed of vitrified clay pipe and covered by two metal lids (the second metal lid positioned 15.2 centimeters [6 inches] below the first).		
Location:	The site was located on the east side of the 105-H Reactor Building, 5.5 meters (18 feet) south of the ramp, and 6.1 meters (20 feet) east of the east wall of the 105-H Reactor Building.		
Process Description:	The site had a metal lid with a second metal lid located 15.2 centimeters (6 inches) below the first. A 6.3-centimeter (2.5-inch) stainless steel pipe emerged from the 105-H Reactor Building wall, ran downward to the surface, and disappeared at a point in approximate alignment with the site. An asphalt surface repair mark ran through the asphalt from the point where the pipeline entered the ground to the french drain. This suggests the possibility of drainage from the Reactor Building.		
Related Sites/ Structures:	This unit was associated with the 105-H Reactor Building.		
Waste Type:	Process Effluent		
Waste Description:	The site is suspected of having received drainage from the 105-H Reactor Building.		
Closure Info:	118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.		

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work

Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code: 100-H-14 **Classification:** Accepted

Names: 100-H-14; Surface Contamination Zone H **Reclassification:** Interim Closed Out (6/22/2006)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site has been remediated and interim closed. The site consisted of an area of surface contamination located next to the south wall of the 105-H Reactor Building fuel storage basin (FSB). The area had been surface stabilized with 46 to 61 centimeters (18 to 24 inches) of gravel and cobbles.

Location: The site was located inside the exclusion area, on the southeast side of 105-H.

Related Sites/ Structures: The site was associated with the 105-H Reactor Building.

Waste Type: Chemical Release

Waste Description: No documentation has been found to identify the source of the contamination or describe the stabilization activity.

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a

fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code: 100-H-17

Classification: Accepted

Names: 100-H-17; 116-H-2 Trench Overflow

Reclassification: Interim Closed Out (3/1/2001)

 Underground Pipelines

Type: Radioactive Process Sewer **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1965

Description: This site has been remediated and was closed out in March 2001. The site is the underground 100-H Reactor cooling water effluent lines. These include those effluent lines that transported 105-H Reactor cooling water from the reactor to the 116-H-7 (107-H) Retention Basin, and from the basin to the 116-H-5 (1904-H) Outfall Structure and/or to the 116-H-1 Trench. This waste site includes all associated expansion and valve boxes and excludes the retention basin, outfall structure, and those effluent lines that are within the confines of the 105-H Reactor Building. It also excludes all reactor influent lines that are upstream of the reactor building. The site also includes the pipeline(s) from the 1608-H Waste Water Pumphouse to 116-H-2 (1608-H Liquid Waste Disposal Trench).

Location: The site is the location of all underground reactor effluent lines running from the 105-H Reactor Building to the 1904-H Outfall Structure. This includes segments between the reactor building and the retention basin, and between the basin and the outfall structure. It excludes the reactor building, retention basin, and outfall structure, each of which is treated as a unique waste site. Also included are the underground lines that run from the retention basin to the 116-H-1 Trench (running on the west side of 116-H-7) and from the 1608-H Waste Water Pumphouse to the 116-H-2 Trench.

Process Description: Effluent water passed from the reactor rear face and flowed via gravity through the underground effluent lines, junction boxes and diversion boxes to the retention basins where it was held up for a short period of time to allow thermal and radiological cooling before being released through the outfall structure to the Columbia River. During periods of reactor fuel cladding ruptures, some effluent was diverted to an open trench.

Related Sites/ Structures: Related structures are the 105-H Reactor, the 1608-H Waste Water Pumphouse, the 116-H-7 (107-H) Retention Basin, the 116-H-1 and 116-H-2 Trenches, and the 116-H-5 (1904-H) Outfall.

Waste Type: Process Effluent

Waste Description: The waste was contaminated steel piping, concrete, and soil. Reactor cooling water became radioactively contaminated as it passed through the reactor core. Activation products created in the water included calcium-41, chromium-51, and zinc-65. Activation products from the reactor core that were picked up and transported by the cooling water included tritium, carbon-14, cobalt-60, nickel-63, and europium-152/154/155. Fuel element fission products such as strontium-90, and cesium-137, as well as transuranics such as plutonium-239/240 were introduced into cooling water due to fuel cladding failures. Concentrations of radionuclides in cooling water during normal reactor operations were approximately 0.2 microcuries/liter. Concentrations of radionuclides built up in rust flakes and scale on the inner surfaces of the pipelines and in sludge in the diversion and junction boxes. Average beta-gamma concentrations for the effluent line scale and junction/diversion boxes were 83,000 and 120,000 picocuries/liter, respectively. Average plutonium-239/240 concentrations were 66 picocuries/gram for the effluent line scale and 720 picocuries/gram for the sludge at the bottom of the diversion and junction boxes. Direct readings of the bottom of the effluent lines averaged approximately 40,000 counts/minute with a Geiger-Mueller probe. Chemicals during water treatment included aluminum sulfate (alum), hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter. The waste was any remaining process effluent and the contaminated pipelines.

Closure Info: 100-H-21, 100-H-22 and 100-H-1 were addressed as a group. The information below documents information for the group of sites.

Remedial action at this site has been performed in accordance with Remedial Action Objectives (RAOs) and Goals (RAGs) established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. The selected remedial action involved (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Area of the Hanford Site, and (3) backfilling the site with clean soil to adjacent grade elevations.

Remedial action at the 100-H-21 Pipelines site began on October 19, 1999. Excavation of the site involved removing the overburden materials, pipelines (including miscellaneous small pipelines near the reactor building), the 100-H-1 Rod Cave structure, 100-H-22 Pipeline leakage, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed of at the ERDF.

Waste site contaminants of concern (COCs) identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The COCs for this site are cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, uranium-238, hexavalent chromium, and lead.

Arsenic was identified as a contaminant of potential concern (COPC) during remediation. Arsenic was included as a site COPC because of the likely use of lead-arsenate pesticide on the former orchard areas and based on agreement with the regulatory agencies. Because arsenic was detected in two cleanup verification samples at concentrations greater than the Washington State background value of 20 mg/kg (Washington Administrative Code [WAC] 173-340), arsenic was added to the final list of COCs for the site.

On July 21, 2000, the majority of the excavation was completed. Because of elevated lead levels in an area of the site excavation, additional soil was excavated in December 2000. Pre- and post-remediation topographic maps including overburden pile locations are shown in the site Closeout Verification Package (CVP). The general average depth of the bottom of the excavation in the deep zone sampling areas was 5.6 meters (18.4 feet) below ground surface. The majority of the site excavation depth was 4.6 meters (15 feet) or less below ground surface, generally corresponding with the former pipeline invert depth. The excavation was approximately 17,629 square meters (189,660 square feet) in area. Approximately 32,725 metric tons (35,998 tons) of material from the site were disposed of at ERDF.

Cleanup verification sampling began on July 17, 2000, and was finished on December 12, 2000. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the Sample Analysis Plan (SAP) (DOE/RL-96-22).

The CVP demonstrated that remedial action at the 100-H-21 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action Record of Decision (ROD, EPA 1995) and Remedial Design Report/Remedial Action Work Plan (RDR/RAWP, DOE/RL-96-17). The remaining soils at the 100-H-21 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-H-21 Pipelines site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in overburden and the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep

zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-H-21 Pipelines site is verified to be remediated in accordance with the ROD. The overburden has been verified as suitable for use as backfill in accordance with the ROD.

Code:	100-H-22	Classification:	Accepted
Names:	100-H-22; Soil Contaminated by Effluent Line Leakage	Reclassification:	Interim Closed Out (3/19/2001)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The release occurred from the reactor cooling effluent lines. Both the lines and the unplanned release have been remediated and cleaned up.		
Location:	The 100-H-22 Effluent Pipeline Leakage site is associated with general underground leaks from the cooling water effluent pipelines.		
Release Description:	Several sources indicate evidence of leaks in the underground 152-centimeter (60-inch) steel reactor cooling effluent lines. Dorian and Richards (UNI-946) indicates backhoe sampling was done in 1971. Excavated soil was less than detection levels with a Geiger-Mueller (GM) probe. UNI-946 documents 1975 characterization studies of the pipeline contents and borehole soil sample results for two holes drilled adjacent to the effluent lines.		
Related Sites/ Structures:	The 107-H Retention Basin, 105-H Reactor, and 100-H-21 Effluent Pipelines are related to this unplanned release.		
Waste Type:	Process Effluent		
Waste Description:	Contaminants at the 100-H Area included plutonium, strontium, europium, cobalt, cesium, uranium, nickel, hexavalent chromium, lead, and arsenic.		
Closure Info:	100-H-21, 100-H-22 and 100-H-1 were addressed as a group. The information below documents information for the group of sites.		

Remedial action at this site has been performed in accordance with Remedial Action Objectives (RAOs) and Goals (RAGs) established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. The selected remedial action involved (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Area of the Hanford Site, and (3) backfilling the site with clean soil to adjacent grade elevations.

Remedial action at the 100-H-21 Pipelines site began on October 19, 1999. Excavation of the site involved removing the overburden materials, pipelines (including miscellaneous small pipelines near the reactor building), the 100-H-1 Rod Cave structure, 100-H-22 Pipeline leakage, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed of at the ERDF.

Waste site contaminants of concern (COCs) identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The COCs for this site are cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, uranium-238, hexavalent chromium, and lead.

Arsenic was identified as a contaminant of potential concern (COPC) during remediation. Arsenic was included as a site COPC because of the likely use of lead-arsenate pesticide on the former orchard areas and based on agreement with the regulatory agencies. Because arsenic was detected in two cleanup verification samples at concentrations greater than the Washington State background value of 20 mg/kg (Washington Administrative Code [WAC] 173-340), arsenic was added to the final list of COCs for the site.

On July 21, 2000, the majority of the excavation was completed. Because of elevated lead levels in an area of the site excavation, additional soil was excavated in December 2000. Pre- and post-remediation topographic maps including overburden pile locations are shown in the site Closeout Verification Package (CVP). The general average depth of the bottom of the excavation in the deep zone sampling areas was 5.6 meters (18.4 feet) below ground surface. The majority of the site excavation depth was 4.6 meters (15 feet) or less below ground surface, generally corresponding with the former pipeline invert depth. The excavation was approximately 17,629 square meters (189,660 square feet) in area. Approximately 32,725 metric tons (35,998 tons) of material from the site were disposed of at ERDF.

Cleanup verification sampling began on July 17, 2000, and was finished on December 12, 2000. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the Sample Analysis Plan (SAP) (DOE/RL-96-22).

The CVP demonstrated that remedial action at the 100-H-21 Pipelines site has achieved the RAOs and corresponding RAGs established in the approved Interim Action Record of Decision (ROD, EPA 1995) and Remedial Design Report/Remedial Action Work Plan (RDR/RAWP, DOE/RL-96-17). The remaining soils at the 100-H-21 Pipelines site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 100-H-21 Pipelines site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in overburden and the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 100-H-21 Pipelines site is verified to be remediated in accordance with the ROD. The overburden has been verified as suitable for use as backfill in accordance with the ROD.

Code:	100-H-24	Classification:	Accepted
Names:	100-H-24; 100-H-24 Substation; 151-H Electrical Facilities; 151-H Substation	Reclassification:	Interim Closed Out (5/9/2001)
Type:	Electrical Substation	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1978
Description:	The site has been remediated and closed out. It is the area of the demolished 151-H Substation, which includes the 151-H Building and adjacent Switchyard. The former switchyard area had a layer of crushed gravel with several remaining concrete structures that were used to support electrical equipment. Electrical conduit was observed protruding up from underground areas near the concrete structures. Two manholes that appeared to provide access to the main electrical feeder cables that ran from the switchyard to the 151-H Building were observed near the center of the site. These features were removed during the remedial action excavation of the site. In the area of the former 151-H Building, the southwest corner of the building appears to be protruding through the ground surface and several pieces of rebar were		

visible to the north. An area of subsidence was also visible near the former northeast corner of the building. An inactive power pole structure exists off the northeast corner of the site. The railroad spur that serviced the switchyard area has been removed. A former chain link fence, that has been cut off and removed just above ground level, surrounds the site. Demolition debris, such as rebar and broken concrete, was observed in the area of the former 151-H Building. Note: The soil samples taken in 1991 were located at oil stained sites adjacent to existing concrete transformer foundations. A site visit on 3/20/96 observed that no oil spills or stains were visible at the site. The 151-H Substation was constructed west of the 105-H Reactor to provide electrical service to the 100-H Area. The 151-H Substation was comprised of a fenced area and a switch house. The fenced area contained two power transformers, overhead static wires, large ground mat, lightning arrestors, and underground 13.8 kV feeders. Outgoing feeder cables were run in underground ducts approximately 60 meters (200 feet) from the substation building to overhead pole lines. The 151-H building contained the 13.8 kV switchgear. The 151-H building was a one story building with a basement. The basement portion contained a sump and conduit openings for underground feeder wires. The main floor housed the switchgear room, battery room, shop, mechanical equipment room, locker room and toilet. The switchgear from this facility was reused at 151-B.

Location: The 151-H Substation site was located approximately 200 meters (656 feet) west northwest of the 105-H Reactor Building.

Process Description: Two power transformers at the 151-H Substation provided 13.8 kV (rated at 31,250 kVA) power to two distribution systems that serviced the 100-H Area from 1948 to about 1965.

Related Sites/ Structures: The site was related to 100-H Area electrical utilities.

Waste Type: Demolition and Inert Waste

Waste Description: The 151-H Building was demolished in 1978. The demolition debris was placed in the basement cavity and covered with earth.

Waste Type: Oil

Waste Description: The site contains polychlorinated biphenyls (PCBs) contaminated soil. Seven samples were taken from stained area around the transformer foundations. The sample results indicated the presence of PCBs, however, the PCB levels were below Toxic Substance Control Act cleanup levels.

Closure Info: The cleanup verification package (CVP-2000-00030) has documented that the 100-H-24 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Remaining Sites ROD (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-13).

Waste site COCs listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22) and identified through process knowledge was polychlorinated biphenyls (PCBs).

Because of the likely use of lead-arsenate pesticide on the former orchard areas and based on an agreement with the U.S. Environmental Protection Agency and the Washington State Department of Ecology (EPA et al. 2000), arsenic was included as a site contaminant of potential concern. Arsenic was not detected in cleanup verification samples at concentrations above Washington State background of 20 milligrams per kilogram (Washington Administrative Code 173-340) and therefore is not included in further analysis for this site.

Remedial actions began in November 1999 and were completed in December 2000. Excavation of the site involved removing contaminated concrete, debris, and contaminated soil. Based on process knowledge and visual observation, the remaining portions (all below ground surface) of the 151-H Building concrete basement walls, foundation, and demolition debris did not require

removal and were therefore left in place. The debris is from the demolition of the 151-H Building in 1978. Based on the history of operations at the H Area, the 151-H Building contained mechanical switchgear for control of electrical operations. Operational history, building demolition observations, and remedial action observations indicate that no hazardous materials were stored or used in the building and that there was no contamination associated with the building.

At completion the lowest elevation of the bottom of the excavation was at 121.9 meters (400 feet). The excavation was approximately 12,289.8 square meters (132,286.4 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 19,924 metric tons (21,268 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility (ERDF).

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	100-H-28	Classification:	Accepted
Names:	100-H-28; 100-H Water Treatment Facilities Underground Pipelines	Reclassification:	None
Type:	Process Sewer	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1965
Description:	The site encompasses the upstream (pre-reactor) process sewers for the 100-H Reactor, including all underground water lines used to transport reactor cooling water between water treatment facilities and the 105-H Reactor Building. These include all underground lines running between buildings and those that run to drainage facilities and to the emergency cooling high tanks (water towers). Lines excluded from this site are those within buildings and all lines that are downstream from the reactor building, i.e., those lines that carry cooling water from the reactor to the retention basin, trench, and/or the river.		
Location:	The underground lines connect the 181-H River Pumphouse to the 182-H Reservoir, the 183-H Basins and Clearwells, the 190-H Buildings, and to the 105-H Reactor Building. Also, any underground drainage lines running from the water treatment buildings to the 116-H-5 Outfall Structure (1904-H Outfall) are included in this site.		
Process Description:	Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, and pumped to the reactor core at a rate of 1.78E+05 liters (47,000 gallons) to 2.69E+05 liters (71,000 gallons) per minute.		
Related Sites/ Structures:	The other pipeline sites at the 100-H Area are 100-H-21 (Reactor Cooling Water Effluent Underground Pipelines); 100-H-34, (River Effluent Pipeline); and 100-H-35, (Clean Water Underground Pipelines). Related structures are the 181-H River Pumphouse, the 182-H Settling Basin, the 190-H Water Treatment and Storage Tank Facility, and the 105-H Reactor.		
Waste Type:	Water		
Waste Description:	The waste is steel piping, concrete, and soil (if contaminants are present). Chemical additives to the reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.		

This Site has the Following SubSites:

remedial action objectives for direct exposure, groundwater protection, and river protection. A summary of the evaluation of the sampling results against the applicable criteria was presented in Table ES-1 of the RSVP.

Analytical results for Hanford Site coal ash samples from the 126-D-1 ash pit by total metals analytical methods were provided in DOE/RL-92-71, Rev. 2. Other data for these samples, including for organics and radionuclides were contained in the Hanford Environmental Information System. Subsite COPCs included polycyclic aromatic hydrocarbons (PAHs), arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Additionally, antimony, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, uranium, vanadium, and zinc were reported as part of the expanded inductively coupled plasma (ICP) metals analysis in the analytical results package. In agreement with the Washington State Department of Ecology, hexavalent chromium analysis was not required due to matrix interference concerns associated with coal ash.

Confirmatory sampling was performed on August 28, 2008, and September 24, 2008. A focused sampling design was selected for confirmatory sampling based on historical drawings, process knowledge, and other available information.

Due to the expected uniform distribution of residual material, no sampling location was preferred for collecting a focused sample within the pipeline. Therefore, a sample representative of pipeline contents was collected from a location selected based on access considerations at the outfall of the pipeline. The most appropriate focus location for characterization of potential impact to underlying soils was also selected at the outfall of the pipeline, as the pipeline terminus was a free discharge to soil.

During excavation, a 0.20 m (8-in.-) steel pipeline was encountered, it was broken at the end and filled with soil and gravel, see photo. Field observations of the end of the pipeline and the broken concrete slab were that the pipeline outfall had been demolished in place and backfilled. The excavator was then used to break into the pipeline near the exposed end. No scale or sediment was found inside the pipeline. To collect a soil sample it was decided to excavate below the concrete slab underlying the pipeline. On September 24, 2008, at test pit 2 the excavator broke into the pipeline, no material was observed inside the pipeline. Therefore, no additional sampling was performed and the excavation was backfilled.

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency (DOE-RL -96-22). The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database and were summarized in Appendix B of the RSVP.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses, as bounded by the rural residential scenario, and allow for unrestricted use of shallow-zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. This subsite does not have a deep zone component; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. In accordance with the RSVP, the confirmatory sampling results support a reclassification of the subsite to No Action.

The SubSite is Part Of:

Code: 100-H-28

Names: 100-H-28; 100-H Water Treatment Facilities Underground Pipelines

Code: 100-H-28:2

Classification: Accepted

pipeline north of the 182-H Reservoir. The pipeline was approximately 4.6 m (15 ft) below ground surface.

Location: The 100-H-28:6 subsite runs from the north side of the 182 H Reservoir northeast to the upper river bank, approximately 1.8 meters (6 feet) down slope of the present embankment crest. The exact location of the pipeline was documented in drawings P-1215 and P-1216 (GE 1949a, 1953).

Process Description: The pipeline was installed during construction of the 182-H Reservoir. The water that traveled through the pipeline originated directly from the Columbia River via the 181-H Pumphouse, with the exception of steam condensate.

Waste Type: Soil

Waste Description: The waste was pipeline sediment/scale and underlying soil.

Closure Info: The Remaining Sites Verification Package, (RSVP-2006-026), documents that the 100-H-28:6 subsite has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) for No Action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

Confirmatory sampling activities at the site were conducted on September 2, 3, and 24, 2008. A focused sampling design was selected for confirmatory sampling based on historical drawings and process information. The contaminants of potential concern (COPCs) for the 100-H-28:6 subsite were selected based on the entire COPC list identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) for the site. They included: cobalt-60, cesium-137, europium-152, europium-154, strontium-90, lead, hexavalent chromium, and metals. Polychlorinated biphenyls (PCBs) were also added at the request of the Washington State Department of Ecology. Confirmatory sampling results indicated that the residual concentrations of COPCs at this site met the remedial action objectives for direct contact, groundwater protection, and river protection.

Soil cleanup levels were established in the ROD based on a limited ecological risk assessment. Although not required by the ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern and other constituents and is presented in Appendix A of the RSVP.

Screening levels were exceeded for antimony, arsenic, barium, boron, cadmium, chromium, copper, lead, manganese, vanadium, and zinc. Exceeding screening values is intended to trigger additional evaluation and does not necessarily indicate the existence of risk to ecological receptors. Because concentrations of antimony, manganese, and vanadium are below background levels (DOE/RL -92-24, Rev. 4), it is believed that the presence of these constituents does not pose a risk to ecological receptors. Since no site background exists for antimony, a state-wide background reference is provided. An established background value is not available for boron at this time. Arsenic, barium, cadmium, chromium, copper, lead and zinc present at concentrations exceeding background, as well as the boron concentration, will be evaluated in the context of additional lines of evidence for risk to ecological receptors as part of the final closeout decision for this site.

During excavation and sampling, radiological field screening was performed as specified in the confirmatory sampling work instruction. No radiological contamination was detected above background levels. Field screening for the presence of volatile organic compounds (VOCs) was also negative. No anomalous media indicated by staining, evidence of burning, and/or debris

were observed during test pit excavations.

All confirmatory samples were analyzed using analytical methods approved by the U.S. Environmental Protection Agency. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to submission for archival in the Hanford Environmental Information System site-wide database. The results were also summarized in Appendix B of the RSVP.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

The SubSite is Part Of:

Code: 100-H-28

Names: 100-H-28; 100-H Water Treatment Facilities Underground Pipelines

Code: 100-H-28:7

Classification: Accepted

Names: 100-H-28:7; 183-H Process Water Lines

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite encompasses the filtered/treated water supply lines originating at the 183-H Filter Plant, including two 0.91-meters (36-inches) steel lines terminating at the 190-H building, a 0.76-meters (30-inches) line terminating at the 182-H Reservoir pumphouse, two 0.25-meters (10-inches) steel lines terminating at the 184-H Power House, and the former supply lines to the emergency cooling water high tanks at the 105-H Reactor Building.

Location: The 100-H-28:7 process water lines are part of the 100-HR-1 Operable Unit. These pipelines are located between the former 183-H Filter Plant Pump House, 184-H Boiler House, 190-H Pump House, the 187 Elevated Water Towers, and the 105-H Reactor. These pipelines are approximately 1.8 to 3 m (6 to 10 ft) below existing grade.

Waste Type: Not Specified

Waste Description: The waste would be any potentially contaminated soil and remaining pipeline components.

The SubSite is Part Of:

Code: 100-H-28

Names: 100-H-28; 100-H Water Treatment Facilities Underground Pipelines

Code: 100-H-28:8

Classification: Accepted

Names: 100-H-28:8; 190-H Process Water Lines

Reclassification: No Action (4/19/2007)

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite consisted of four 0.61 -meter (24-inch)-diameter seamless welded steel pipelines located in two subsurface, reinforced concrete tunnels between the 190-H and 105-H facilities, as well as possible ancillary piping within the tunnels. The 100-H-28:8 pipelines were

Structures:**Waste Type:** Process Effluent**Waste Description:** The trench is likely to have received radionuclide and chemical contamination from the overflows of the 116-H-2 (1608-H) Crib. The crib received cooling water from the 105-H Reactor Building during the Ball 3X system upgrade program. The site was used during other upgrade programs and on the effluent system when maintenance was necessary.**Waste Type:** Sanitary Sewage**Waste Description:** The unit received unknown amounts of sanitary sewage from the 110-H Building.**Closure Info:** 100-H-17, 116-H-2, 100-H-2 and 100-H-30 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package (CVP-2000-00031) has demonstrated that remedial action at for the 100-H-17 Overflow, 116-H-2 Liquid Waste Disposal Trench, 100-H-2 Buried Thimble Site, and the 100-H-30 Sanitary Sewer Trench sites have achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995), and the amendment to the ROD (EPA 1997), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). This site is located in an area that, prior to World War II and formation of the Hanford Site, was occupied by fruit tree orchards. These sites were grouped together due to their proximity and similarity in the type of waste they received.

The COCs identified in the 100 Area Remedial Action Sampling and Analysis Plan for this site consisted of plutonium-239/240, uranium-238, strontium-90, cesium-137, cobalt-60, europium-152, europium-154, and hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 6,240 square meters (67,170 square feet) in area with a maximum depth of approximately 2.6 meters (8.5 feet). Approximately 19,920 metric tons (21,960 tons) of material from the site were disposed of at the ERDF.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Code: 100-H-31	Classification: Accepted
Names: 100-H-31; Polychlorinated Biphenyl in Soil on North Side of 105-H Reactor Building	Reclassification: Interim Closed Out (6/22/2006)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed. The site consisted of a gravel area near a former electrical substation with no visible oil stains or vegetation. The adjacent concrete pad had electrical conduit and wiring extending up to the surface where the electrical equipment was removed. The site was not marked or posted. The reactor exclusion fence was posted as Underground Radioactive Material. The reactor exclusion fence was posted as Danger,	

Restricted Area, Multiple Hazards, No Entry Without Written Authorization and Underground Radioactive Material.

Location: The site was located on the north side of the 105-H Reactor Building (inside the exclusion area fence) and off the southeast corner of a former electrical transformer pad. The site is 4 meters (11.2 feet) south of 100-H-10 French Drain site.

Release Description: Polychlorinated Biphenyls were detected in the soil.

Related Sites/ Structures: The site is related to electrical transformers that were formerly located on the concrete pad near the site.

Waste Type: Soil

Waste Description: The waste is polychlorinated biphenyl (PCB) contaminated soil.

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of

 radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

Code:	100-H-33	Classification:	Accepted
Names:	100-H-33; 183-H Solar Evaporation Basins Radionuclide Components	Reclassification:	None
Type:	Retention Basin	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1985
Description:	The site was created to address the radionuclides of the former 183-H Solar Evaporation Basins (116-H-6 TSD) that was used for solar evaporation of liquid wastes from the 300 area. The basins were remediated in 1985 and 1995 and closed out on May 13, 1997, under a Modified Closure signed by Washington State Department of Ecology. This RCRA closure did not address any radionuclide COCs that were associated with the site (gross alpha, gross beta, uranium-234, uranium-235, technetium-99, total uranium, and gamma energy analysis). This RCRA closure did not address any radionuclides that were associated with the site.		

20.3 meters (66.5 feet), then take a 19-degree downstream bend and continue on for another 209.2 meters (686.5 feet).

Process Description: The River Effluent pipelines discharged reactor coolant water to the river. Effluent was received from the 107-H Retention Basin and the area process sewer system to the outfall structure. In the event that the outfall line plugged, effluent would back up into the outfall structure and overflow into an underground concrete sluiceway (flume) that led to the river. Reactor (105-H) effluent cooling water was collected and temporarily stored in the 107 H Retention Basin. This cooling water, as well as process sewer wastes, were discharged to the river via the river effluent pipelines after passing through the 1904-H outfall structure. In the event the pipelines became plugged or were out of service for any reason, the discharge streams would overflow to an underground, emergency spillway (100-H-36), which was also routed to the river. The total drop from the face of the outfall structure to the discharge end of the pipeline is 8.5 meters (28 feet). The pipelines are separated by approximately 90 centimeters (35 inches) and are covered by a minimum of 1 meter (3 feet) of soil over their entire length, as well as large pieces of basalt riprap extending from the face of the outfall to the shoreline. The top portion of the outfall structure has been partially demolished, and backfilled with clean soil. It is not known what condition the outfall ends of the river effluent pipelines were left in following outfall demolition. During February and March 2005 visits to the site, it was noted that the bottom portion of the underground spillway (flume) (100-H-36) associated with the outfall structure is partially intact and visible. The total drop from the face of the outfall structure to the discharge end of the pipeline is 8.5 meters (28 feet). The pipelines are separated by approximately 90 centimeters (35 inches) and are covered by a minimum of 1 meter (3 feet) of soil over their entire length, as well as large pieces of basalt riprap extending from the face of the outfall to the shoreline. The top portion of the outfall structure has been partially demolished, and backfilled with clean soil. It is not known what condition the outfall ends of the river effluent pipelines were left in following outfall demolition. During February and March 2005 visits to the site, it was noted that the bottom portion of the underground spillway (flume) (100-H-36) associated with the outfall structure is partially intact and visible.

Related Sites/ Structures: The site is associated with the 116-H-5 Outfall Structure, 100-H-36 Spillway (Flume), 116-H-7 Retention Basin and 184-H Power House. The site is associated with the 116-H-5 outfall structure, 116-H-7 (the 107-H Retention Basin), the lines (116-H-21) from the retention basin to the outfall structure, and 100-H-36 (the 1904 H spillway).

Waste Type: Process Effluent

Waste Description: The waste includes the pipelines and the contaminated scale contained within them.

Contaminants of concern/potential concern are based on those for the outfall itself.

Contaminants of potential concern include Co-60, Cs-137, Eu-152, -154, -155, Ni-63, Pu-238, -239/240, Am-241, C-14, H-3, Tc-99, Sr-90, U-234, -235, -238, Cr+6, Cr (total), Pb, and Hg.

Code: 100-H-35 **Classification:** Accepted

Names: 100-H-35; 100-H Clean Water Pipelines; 100-H Service Water Pipelines **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Unknown **End Date:**

Description: The site encompasses the clean water pipelines for the 100-H Area, including underground pipelines used to transport raw water from the river pumphouse to the water treatment facilities and to 100-H Area facilities and fire hydrants. Pipelines excluded from this site include those within buildings, process and sewer pipes, pipes that carried water treated with sodium

dichromate, and all lines that were downstream from the reactor building, i.e., those lines that carried cooling water from the reactor to the retention basin, trench, and/or the river.

Location: The clean water (non-contaminated) underground pipelines were located across the 100-H Area, from the 181-H intake structure to the water treatment facilities, reactor (fire and potable water, not reactor cooling water), south to the fire and patrol headquarters near the 1607-H-3 Patrol Headquarters area, west to miscellaneous shops and warehouses, and the 184-H Coal Fired Powerhouse. The export water line entered the H Area from the 100 D/DR Area north of the coal storage area, it turned south along the road then east to the 182-H Reservoir. This line also continued further south and turned east where it entered the 105 H reactor on the north side.

Process Description: The site encompasses the clean water pipelines for the 100-H Area, including underground pipelines used to transport raw water from the river pumphouse to the water treatment facilities and to 100-H Area facilities and fire hydrants.

Related Sites/ Structures: The clean water and fire protection water pipelines ran to or near virtually all the facilities at the 100-H Area. The other pipeline sites at the 100-H Area are 100-H-21 (Reactor Cooling Water Effluent Underground Pipelines); 100-H-28 (Water Treatment Facilities Underground Pipelines); and 100-H-34, (River Effluent Pipeline)

Waste Type: Equipment

Waste Description: The waste is the old buried pipes from the clean water pipeline system.

Code: 100-H-36

Classification: Accepted

Names: 100-H-36; 116-H-5 Spillway; 1904-H Spillway; 100-H-34:1 Flume (Spillway) for the 116-H-5 Outfall Structure

Reclassification: None

Type: Outfall

Start Date:

Status: Inactive

End Date:

Description: The 100-H-36 Spillway (also referred to as a flume) is an underground concrete sluiceway that led from the 116-H-5 Outfall Structure to the river shoreline.

Location: The site is located on the Columbia River shoreline north of the 116-H-7 Retention Basin. Assuming midline Washington State Plane coordinates, the underground spillway exits the south face of the 116-H-5 outfall. takes an immediate 45 degree turn in the upstream direction, and terminates.

Process Description: The spillway carried effluent overflow from the outfall (116-H-5) structure to the shoreline of the river for release. It was planned to be used only if the river effluent pipelines (100-H-34) were blocked, damaged, or undergoing maintenance. There is no corroborated physical or historical evidence that the spillway was ever used. The slope between the outfall and the river is covered with large basalt riprap boulders that have been mortared in place, extending about 73 meters (80 yards) north and south of 116-H-5. The exit end of the underground sluiceway has been covered with concrete rubble and is no longer visible. A shallow, dish-shaped concrete runoff pad extends across the beach from the spillway exit to the low water line.

Related Sites/ Structures: The site is associated with the 100-H-34 River Effluent Pipelines and the 116-H-5 Outfall Structure.

Waste Type: Construction Debris

Waste Description: Possible chemical and/or radionuclide contamination (see Contaminants of Potential Concern).

The contaminants of potential concern are based on those for the 116-H-5 outfall, and include C-14, Cs-137, Sr-90, U-235, -238, and Pu-239/240.

Code: 100-H-41 **Classification:** Accepted

Names: 100-H-41; Contaminated Area; Contaminated Vertical Pipe **Reclassification:** Interim Closed Out (3/15/2011)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consisted of soil in a posted radiologically Contaminated Area (CA). Also within the CA area is a 35.6 centimeter (14 inch) diameter, vertical concrete structure. The posted area appears as a flat, graded, gravel covered area with rabbit brush.

Location: The site was located 16.29 meters (53.44 feet) east of the 190-H building.

Process Description: The concrete structure inside the CA appeared to be associated with a filtered water line from the 183-H facility. The filter water line serviced the 190-H Building operations via a 60.96 centimeter (24 inch) cast iron pipe. The 35.6 centimeter (14 inch) diameter concrete structure may be related to the 100-H-28 Water Treatment Facilities Underground Pipelines. The basis for the radiological posting of the site as a CA was unknown. There was no process knowledge indicating radiological contamination would be present at the location. It was also believed that the radiological CA posting may have been associated with mud dauber contamination that was prevalent in the surrounding area. Because process knowledge was inconclusive, WIDS information identified the site as an Unplanned Release.

Related Sites/Structures: 100-H-41 is associated with other contaminated mud dauber nests found in 100-H-37 and 100-H-58. Associated structures include the 183-H and 190-H buildings. Associated WIDS sites include: 100-H-28, Water Treatment Facilities Underground Pipelines and 100-H-35, 100-H Service Water Pipelines, 100-H Clean Water Pipelines.

Closure Info: Because the contamination was determined to be due to the presence of mud dauber nests, it was determined that the contamination was more appropriately identified as part of the 100-H-37 Mud Dauber Contamination Area waste site. Therefore, on November 12, 2009, the Field Remediation project excavated and removed the contaminated materials, including the pipe and soil, for disposal at the Environmental Restoration Disposal Facility as part of the ongoing 100-H-37 remediation effort.

Code: 100-H-42 **Classification:** Accepted

Names: 100-H-42; 1906-H Drainage Lift Station **Reclassification:** None

Type: Pump Station **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of the following components: -An underground reinforced concrete flume/reservoir filled with building rubble and clean soil. The concrete structure is in contact with underlying soil which may be contaminated from past leaks from the structure. There are no documented unplanned releases from this facility. -A 183 cm (72 in) diameter, 37 m (121 ft) long, reinforced concrete pipeline exiting the east side of the underground structure and connecting to the 1904-H diversion box (outfall structure). The pipeline is in contact with

underlying soil which may be contaminated from past leaks. There are no documented unplanned releases from this pipeline. -A 15.2 cm (6 in) diameter, 67 m (220 ft) long, steel effluent sample line between the 1904-H outfall and the 1908-H effluent monitoring station. A 9.18 m (30.13 ft) section of this pipeline is drawn on drawing P-4407 with a different orientation than what is shown on drawing P-1220. Both versions of the pipe orientation are shown on the waste site drawing to ensure that it is not missed. -A 20.3 cm (8 in) diameter, 94 m (308 ft) long, steel sample drain line from the 1908-H effluent monitoring station that empties into the 1904-H outfall. A 10.84 m (35.55 ft) section of this pipeline is drawn on drawing P-4407 with a different orientation than what is shown on drawing P-1220. Both versions of the pipe orientation were shown on the waste site drawing to ensure that it was not missed.

Location:	The site is located in the 100-HR-1 Operable Unit and is approximately 75 m (246 ft) north of the 107-H retention basin. The approximate center of the remaining underground structure in Washington State Plane coordinates is E578058, N152819 (Washington State Plane coordinates).
Process Description:	The 1906-H Drainage Lift Station was designed to receive process sewer discharges (primarily floor drains) from all of the non-radioactive buildings in H Area. The structure consisted of a rectangular-shaped reinforced concrete reservoir and by-pass flume, surmounted by a one-story concrete-block building over a portion of the reservoir section. The facility originally contained three 66,245 LPM (17,500 GPM) electric pumps, one 56,781 LPM (15,000 GPM) electric pump, and one 7,571 LPM (2,000 GPM) electric pump. A concrete dividing wall running the length of the structure separates the flume and reservoir sections. Two electrically operated gates controlled the flow into the structure, and flow between the bypass flume and the reservoir sections. A 15 cm (6 in) concrete slab cover supported the above grade building. This building contained the pump room, switch gear, and controls. A 183 cm (72 in) pipeline entered the facility on the west end of the flume, and exited the east end of the flume directly to the 1904-H Diversion Box (P-2091). Construction materials included 1,489 m ³ (1,950 cubic yards) of concrete, 126 tonnes (139 tons) of reinforcing steel, 1.36 tonnes (1.5 tons) of structural steel, and 4,370 concrete blocks. In 1974 this above grade building was demolished into the reservoir and the site backfilled with clean soil (letter UNI-7231974). The entire below grade reservoir is made of 0.9 m (3 ft) thick reinforced concrete. The 1908-H Effluent Monitoring Station was used to sample and monitor cooling water process effluent which was being discharged to the river via the 1904-H Diversion Box. The 1904-H Diversion Box received process waste from the 107-H Retention Basin and the 1906-H Drainage Lift Station.
Related Sites/ Structures:	Primary structures discharging to this site include 182-H, 183-H, 184-H, 190-H, 1908-H, 1715-H, 1716-H, and 1717-H buildings. Other associated structures include: 100-H-36 Spillway, 116-H-5, 1904-H Outfall Structure, 116-H-7 Retention Basis, and 100-H-34 River Effluent Pipelines.
Waste Type:	Soil
Waste Description:	The waste associated with the 1906-H lift station includes piping and remaining equipment (pipeline and concrete reservoir), rubble and underlying soils associated. Potential contaminants of concern include sodium dichromate, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), sulfuric acid, lead, mercury, and paint solvents. The waste associated with the 1908-H Effluent Monitoring Station includes the piping and underlying soils associated. Potential contaminants of concern include Cs-137, Co-60, Eu-152, Eu-154, Eu-155, Ni-63, Pu-238, Pu-239/240, Sr-90, U-238, hexavalent chromium, total chromium, lead, mercury, paint solvents, sulfuric acid, TPH and PCBs.

Code: 100-H-43	Classification: Accepted
Names: 100-H-43; Maintenance Garage; Repair Shop	Reclassification: None

Type: Foundation**Start Date:****Status:** Inactive**End Date:**

Description: This site consists of the below-grade components of the 1716-H Maintenance Garage. The facility was used to service the area vehicles. The site includes the following components: -An 8.4 m (27.6 ft) long concrete lubrication pit. -A 2,082 L (550 gal) underground waste oil tank located on the north side of the facility and the 10.2 cm (4 in) diameter underground cast iron pipeline running to it from the lubrication pit. -A 10.2 cm (4 in) diameter, underground cast iron pipeline that carried waste from floor drains in the battery room, compressor and oil storage room, lubrication pit, and the repair shop to the process sewer (100-H-28:2). -A 61 cm (24 in) french drain on the north side of 1716-H that received steam condensate through a 5.1 cm (2 in) cast iron pipeline (See orphan site photo # 03122008-962). The french drain may also have been available to receive other wastes through a 10.2 cm (4 in) cleanout near the wall opening in the battery room (P-1435). -A 61 cm (24 in) french drain on the north side of 1716-H (just west of the french drain described above) that received effluent from a floor drain and sink in the battery room (See orphan site photo # 03122008-963). The two underground pipelines that carried the waste to the french drain were a 7.6 cm (3 in) cast iron pipe and a 3.8 cm (1.5 in) lead pipe. -A 122 cm (48 in) diameter french drain, built in 1963, received steam condensate through two 3.8 cm (1.5 in) underground pipelines (See orphan site photo # 03122008-964). -A pump island and underground piping associated with two 18,927 L (5,000 gal) underground storage tanks. The tanks, one for diesel fuel and the other for gasoline, are part of the 100-H-3 waste site. The piping included two 3.8 cm (1.5 in) cast iron suction lines and two 5.1 cm (2 in) vent risers (partially above grade).

Location: The site is located 200 m (650 ft) northeast of the former 105-H Reactor, and 40 m (131 ft) east of the former 105-H Retention Basin. The center of the original facility in Washington State Plane coordinates is at E577990, N152691. The center of the used oil storage tank in Washington State Plane coordinates is E577995, N152709. The center of the lubrication pit is E577995, N152697. The center of the fuel island is E577972, N152683. The center of the two northern french drains are (east and west respectively) E577989, N152709 and E577987, N152709. The center of the southern french drain is E577997, N152673.

Process Description: The 657 sq m (7068 sq ft) maintenance garage was constructed between March and August 1949. The building was a one-story wood-frame structure with wood columns which supported the roof frame and trusses; the exterior concrete foundation walls extended four feet above the finished concrete floors of the building; and concrete footing pads carried the laminated columns which supported the high roof wood trusses (HW-24800-2). The building contained a repair shop, tire shop, battery room, compressor and oil storage room, mechanical equipment room, office, parts, toilet, locker, and lunch room. The 1716-H Maintenance Garage was equipped as a service station, and for light maintenance and repair. At one point about half of the building was converted to shops for maintenance, calibration, and repair of electrical and electronic instruments (GEH-26434-100). Operations were discontinued at the 1716-H building when 105-H was deactivated in 1965 (BHI-00127). The building was dismantled prior to 1974. The footings and foundation were demolished, backfilled and the site was leveled in 1974 (letter UNI-7231974). A past employee reported that he believes waste oil was commonly dumped on ground surface near auto shop as dust inhibitor (DC-0227).

Related Sites/Structures: The 100-H-3, 1716-H Garage Fuel Tanks were approximately 6.7 meters (22 feet) directly south of the building. Other associated structures include: 100-H-28, 100-H Water Treatment Facilities Underground Pipelines (See Subsites), and the 116-H-6, 183-H Solar Evaporation Basins.

Waste Type: Process Effluent

Waste Description: Automobile wastes may include gasoline, diesel, motor oil, antifreeze, automatic transmission fluid, battery acid, engine and radiator flushes, brake fluid, engine and metal degreasers.

Contaminants of potential concern include volatile organic compounds, semi-volatile organic compounds, sulfate, pH, lead, cadmium, mercury, chromium, hexavalent chromium, polychlorinated biphenyls, TPH-Gasoline Range, TPH -Diesel Range, and TPH-Oil Range.

Code: 100-H-44 **Classification:** Accepted

Names: 100-H-44; 183-H Neutralization Pit; H-016 **Reclassification:** None

Type: Process Unit/Plant **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of the 183-H Neutralization Pit and its potentially contaminated soils, possibly a concrete structure (pit), acid brick and associated piping. There are no visible surface features that identifies the pit. The neutralization pit lies within the footprint of the 100-H-28 Process Sewer.

Location: The site is located in the 100-HR-1 Operable Unit. The Neutralization Pit was located 59 m (194 ft) west of the 183-H Head House (west of the railroad car spot) and 9 m (30 ft) north of the 183-H Flocculent Basin flume wall. The center coordinates are E577712.58, N152881.48.

Process Description: The 183-H Filter Plant was designed to treat raw river water before it entered the 190-H building. Chemicals were added to the river water in the head house. The head house was used for the storage, preparation, and addition of alum, chlorine, and sulfuric acid for water treatment. Alum was used as a flocculating agent and sulfuric acid was used to control the acidity of the water. Chlorine was added to control algae. Concentrated sulfuric acid was received by railroad car and stored outside in horizontal storage tanks. Chemicals were delivered as bulk materials and unloaded from railroad cars by either bottom dumping or side unloading to conveyors. Concentrated sulfuric acid, received by railroad car, was stored outside in horizontal storage tanks. It was pumped from the storage tanks to the head tank through black iron pipelines. Pipelines used to transport lime slurry and acid solutions were encased in an underground concrete trench with a concrete cover. The interior surface of the trench was coated with AMERCO at #55 chemical resistance coating (H-1-5671). Along the length of the trench various pipelines made connection outside of the trench to above grade ancillary equipment including the acid pumps and the acid tanks. The concrete trench was sloped to allow drainage of liquids to the neutralization pit. The neutralization pit served as a structure to treat excess concentrated sulfuric acid (from acid tank cleanouts) prior to disposal through the north process sewer. In addition to receiving sulfuric acid the neutralization pit received lime slurry from the 183-H Head House. The building also contained rooms for chlorine storage, lavatories, janitor's room, electrical switchgear room, and a locker room (HW-74094). The neutralization pit served as a structure to treat excess concentrated sulfuric acid (from acid tank cleanouts) prior to disposal through the north process sewer. The Neutralization Pit received sulfuric acid from two storage tanks and one acid head tank, and lime slurry from the 183-H Head House. The surface elevation was 126.97 m (416.56 ft). In the center of the pit is a vertical orientated vitrified clay pipe (VCP) with a Vitrabond seal at approximately 0.9 m (3 ft) below grade surface (bgs). Vitrabond consists of a conventional glass ionomer, in conjunction with a light-curing resin and hydroxy-ethylmethacrylate. The pit was constructed on top of a concrete monolith and vertically drained with a 10.2 cm. (4 in) VCP into a 76.2 cm (30 in) reinforced concrete pipe (RCP) extra strength process sewer line (100-H-28:3 North Process Sewer). The process sewer pipe was at inverse elevation 123.52 m (405.26 ft). The pit drain line was perforated with the pit itself and within the drain line was a 2.54 cm (1 in) diameter (Hastelloy) rod which seated into a 7.62 cm. (3 in) diameter lead hemisphere. The lead hemisphere was seated in the floor of the pit in the acid proof brick layer. Hastelloy is a trademark for a series of high-strength, nickel based, corrosion resistant alloys produced by Haynes International (H-1-5671). Portions of the above described neutralization pit may remain. The piping included a sulfuric acid supply and drain lines, a lime slurry pipeline, sludge trap drains, filtered water and steam condensate drain lines. The pipelines were

contained in a concrete trench extending from the Acid Head tank to the Neutralization Pit and then to the west wall of the 183-H Head House. Also included were short sections of pipelines connecting to ancillary equipment outside of the trench. Also included in the site are two french drains, a steam trap, and acid pump foundation. One 30.48 cm (12 in) french drain (E577728.89, N152882.85) was located adjacent to the covered car spot and was connected to a compressed air line. The second french drain (E577735.51, N152880.58) received steam condensate adjacent to the 183-H Head House Acid Facility Silica Tank. A steam trap was located between the silica tank and the 183-H Head House (E577732.5, N152876.2). The steam trap was the termination point for a silica tank condensate pipeline. Although the french drain and steam trap both supported the silica tank, the relationship of the two to each other is not known. The acid pump foundation (E 577721.0, N152883.2) held two pumps located to the north side of the trench. Portions of the foundation were below grade. Historical documentation does not indicate if the pumps were located above grade and were removed or are still within the below grade portion of the foundation. The foundation had a "Lead Fill" type cover measuring 1/16 of an inch thick (GEA, 1956b).

Related Sites/ Structures: The 183-H Neutralization Pit was associated with the 183-H Filter Plant, acid pipelines, railroad car spot and the North Process Sewer, which is located below and adjacent to the pit.

Waste Type: Equipment

Waste Description: The site received concentrated sulfuric acid which may have included lead and mercury. There may be contaminated equipment components, piping and soil that remain in place.

Code: 100-H-45

Classification: Accepted

Names: 100-H-45; 1717-H UST; H-015; Underground Propane Tank

Reclassification: No Action (7/8/2010)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was a suspect propane underground storage tank (UST) and included any associated below grade piping or features. It is unknown if the propane tank shown in the historical construction drawing (SK-1-7325) was ever installed.

Location: The suspect propane UST is located near the northeast corner of the 1717-H building. The tank's location is shown on SK-1-7325 at coordinates E578018, N152621.

Process Description: The 1717-H Building housed a machine shop, sheet metal shop, fabrication, shop, and carpenter shop that provided services for all of the 100-Areas operations. The fabrication shop was outfitted for fabrication and repair of reactor system components, particularly those associated with water treatment and pumping systems. A portion of the 1717-H Building was also used as a hot shop, for work on very low-level radioactive materials.

Related Sites/ Structures: The propane tank is associated with the 1717-H building and the 1717-H Hot Shop (sitecode 100-H-4).

Waste Type: Chemical Release

Waste Description: Potential contaminants include propane hydrocarbons in the soil.

Description:

Closure Info: The Remaining Sites Verification Package (RSVP-2009-064) has documented that the 100-H-45 Underground Propane Tank waste site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) for No Action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action

Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) (EPA 1999).

Confirmatory sampling was performed on November 10, 2009. The contaminants of potential concern for confirmatory sampling included the expanded list of inductively coupled plasma metals, mercury, polycyclic aromatic hydrocarbons (PAH), and total petroleum hydrocarbons.

The complete laboratory sampling results were stored in the WCH Environmental Restoration project-specific database prior to submission to the Hanford Environmental Information System for archiving and were provided in Appendix A of the RSVP.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code:	100-H-46	Classification:	Accepted
Names:	100-H-46; 190-H Potential Contaminated Soil	Reclassification:	None
Type:	Process Unit/Plant	Start Date:	
Status:	Inactive	End Date:	
Description:	<p>This site consists of contaminated soils, concrete structures and drain pipes that were beneath the sodium dichromate process equipment, piping, unloading dock and railroad spur. This site is within the footprint of the 190-H Pump house which was demolished and removed to 1 m (3 ft) below grade in 1977. The site is approximately the northern twenty percent of the facility with original elevation of 421.0 ft. The site consists of several locations that existed along the northern and west sections of the 190-H building where sodium dichromate was handled, mixed and injected into the reactor process water system. There were 4 equipment pads which measured 3.04 m (10 ft) by 1.34 m (4.4 ft) by 0.61 m (2 ft) high. There were 3 concrete trenches that formed a "U" shape which measured 7.66 m (25.16 ft) by 10.56 m (34.66 ft) by 1.52 m (5 ft) depth. Each of the four process water storage tanks had concrete drain pits which measured overall 3.04 m (10 ft) by 4.87 m (16 ft) by 1.52 m (5 ft) depth. A 15.24 cm (6 in) drain line which received fifteen percent sodium dichromate, in the form of overflow, exited the building towards the south process sewer at an elevation of 417.5 ft. There was a loading dock, which received the dry sodium dichromate, it was located adjacent to the railroad spur. And there was an elevator which was used to transport dry sodium dichromate to the upper floors.</p>		
Location:	<p>This waste site is within the footprint of the 190-H Pump house, that was demolished and removed in 1977. The 190-H building was located 77 m (252 ft) north of the 105-H Reactor.</p>		
Process Description:	<p>The 190-H complex was a process water treatment plant which supplied the 105-H Reactor with nonradioactive cooling water. Sodium dichromate, in dry crystalline form, was added to filtered water as an anticorrosive agent. The fifteen percent sodium dichromate was injected into piping which fed to four 6,624 kL (1,750,000 gal) Process Water Storage Tanks within the 190-H facility. The sodium dichromate process consisted of a mixing tank, two feed tanks, two centrifugal pumps, eighteen proportioning pumps, piping, valves, and associated electrical and instrument equipment. Bagged sodium dichromate was delivered to the 190-H building via railcar. An unloading dock, with adjacent elevator inside, was used to convey the material from the railcar to an upper level of the 190-H building (P-1315). The mixing and feed tanks each had a 3,236 L (855 gallon) capacity and were located on the second through fourth floors of the 190-H building (P-1315). There was one mixing tank located directly above the two feed tanks.</p>		

At the top of the mixing tank were an agitator and a wooden cover with a bag hopper where the sodium dichromate was added. Water was added to the sodium dichromate and mixed to a fifteen percent concentration (HW-27270). A 7.62 cm (3 in) diameter process pipe, with a three way valve for draining purposes, exited the base of the mixing tank to the feed tanks. Also, a 7.62 cm (3 in) diameter overflow pipe exited near the top of the mixing tank and connected to the tank drain pipe. The 7.62 cm (3 in) mixing tank pipe entered through the top of two sodium dichromate feed tanks located below the mixing tank. The feed tanks were 1.5 m (5 ft) in diameter with a conical bottom. A 7.62 cm (3 in) diameter overflow pipe exited near the top of each tank. At the base of the feed tanks was a 3.8 cm (1 ½ in) diameter pipe that fed the liquid concentrate to four injection pump pads (P-1315). The sodium dichromate concentrate piping was located next to the north wall, elevated above the floor, and ran approximately the full length of the building servicing the four injection pump locations. The sodium dichromate liquid was added to the filtered water by injection pumps through chemical feed injection rings. The injection rings were located inline with 76 cm (30 in) and 107 cm (42 in) diameter pipes that entered the Process Water Storage Tanks through automatic control valves (P-1260, P-1874). The drain pipes from the mixing tank and the feed tanks entered a 15 cm (6 in) drain pipe that fed to the process sewer system which exited north out of the building (P-1221).

Related Sites/ Structures: 183-H Filter Building clearwells and pump room; the 187-H1 and 187-H2 emergency high tanks; the 151-H Primary Electrical Substation; 184-H Power House steam supply; 105-H Reactor and the 100-H-28-2 South Process Sewers.

Waste Type: Demolition and Inert Waste

Waste Description: The primary contaminate of concern is sodium dichromate. There may be buried debris, i.e., concrete, rebar, and piping below grade.

Code: 100-H-48 **Classification:** Accepted

Names: 100-H-48; 184-HA Underground Fuel Oil Tanks Associated Piping **Reclassification:** None

Type: Product Piping **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The site consists of potentially remaining fuel oil piping that was associated with two fuel oil underground storage tanks (UST's) that supported the 184-HA Boiler House Building. The two 45,651 liter (12,036 gallon) fuel oil tanks have already been removed from the site.

Location: The approximate location for the two fuel tanks was E577833, N152585.

Process Description: The 184-HA Boiler House Building and associated equipment was constructed in approximately 1965 to replace the 184-H boiler house that was being shutdown in conjunction with deactivation of the 100-H reactor (HW-82720). The reactor was shut down permanently in April of 1965. The boiler provided steam to the administration and Central Shops buildings, which consisted of 1703, 1704, 1716, 1717, 1719, 1722, 1760, and 1761. Buildings 1703, 1760, and 1761 were on one supply line and the remaining buildings on another (HW-82720). These steam supply lines were all above grade features (H-1-14575). The 184-H building water/chemical equipment consisted of the following above grade features: (1) fuel oil fired package boiler, (1) brine tank, (2) water softener tanks, (1) chemical treatment tank w/pump, (1) de-aerator w/boiler feed pump. Each tank had a 5.1 centimeter (2 inch) fuel oil supply (FOS) and fuel oil return (FOR) pipe line connected to it that comes from a pump pit on the south side of the building. The fuel oil piping, as it leaves the south end of the pump pit going to the tanks, is at 0.6 meters (2 feet) elevation (H-1-14579). The fuel oil piping consists of ASTM A-53 schedule 40 black steel covered with taping. This buried piping was required to have an exterior coat of coal tar enamel with bonded asbestos felt wrap, with the joints wrapped in coal tar tape (tapecoat). A U-shaped concrete trench in the floor of the 184-HA building contained fuel oil

supply and return lines, a propane (PR) line (boiler pilot light connection- H-1-14579), the 5.1 centimeter (2 inch) influent sanitary water (SW), and (2) trench floor drains that connected to the 5.1 centimeter (2 inch) sanitary drain (SD) connected at the east end of the building drain field's (west of the building) 20.3 centimeter (8 inch) perforated concrete main line (H-1-14576 and H-1-14577). Steam line vent valves and a 1.9 centimeter (0.75 inch) soot blower drain valve also emptied effluent into the trench (H-1-14583).

Related Sites/ Structures: The piping is associated with the 184-HA boiler and the 190-HA Main Process Pump House Annex.

Waste Type: Soil

Waste Description: Fuel oil potentially remains in the piping and the underlying soil.

Code: 100-H-49	Classification: Accepted
Names: 100-H-49; Potentially Contaminated French Drains	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:

Description: This site consists of sixteen french drains, the underlying soil of the potentially contaminated french drains, and their associated below grade piping components. The site has been divided into three subsites as follows: - 100-H-49:1, 184-H Boiler House and 1717-H Hot Shop French Drains - 100-H-49:2, 119-H, 181-H, 184-H, and 183-H French Drains - 100-H-49:3, 183-H and 1717-H French Drains

Location: Refer to the subsites for the detailed locations of each french drain.

Process Description: The french drains were discovered during the Orphan Site Evaluation (OSE) historical review. Each of the facilities that the french drains are associated with, were identified and the process or function of the buildings summarized. This information is incorporated into the list of french drains included in the site description for each of the subsites. Details of the inlet pipes sizes, depths of the french drains, and construction drawings are provided when available. Generally, french drains are a minimum of 4.6m (15 ft) from the edge of buildings. When exact locations were not available from construction drawings and these locations have been estimated by placing the location 4.6 m (15 ft) away from building. In other cases, the piping to the french drains is a well defined location. Orphan sites field investigations were conducted on March 12th and 17th of 2008. Photographs of the present site conditions were obtained.

Related Sites/ Structures: The french drains (and drywells) are related to 119-H, 181-H, 183-H, 184-H, 1717-H, and 1719-H.

Waste Type: Equipment

Waste Description: The waste consists of the french drains, piping to the french drains, and potentially contaminated soil. The contaminants of potential concern will be evaluated during work planning and confirmatory sampling.

This Site has the Following SubSites:

Code: 100-H-49:1

Names: 100-H-49:1; 184-H Boiler House and 1717-H Hot Shop French Drains

Code: 100-H-49:2

Names: 100-H-49:2; 119-H, 181-H, 184-H and 183-H French Drains

Code: 100-H-49:3
Names: 100-H-49:3; 183-H and 1717-H French Drains

Code: 100-H-49:1 **Classification:** Accepted
Names: 100-H-49:1; 184-H Boiler House and 1717-H Hot Shop French Drains **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of four french drains, the underlying soil of the potentially contaminated french drains, and their associated below grade piping components. The drains include:

FD4 is a 1 m (36 in) french drain with a 11 m (36.1 ft) long, 0.1 m (4 in) condensate (CNDS) drain line from the 184-H Boiler House Reclaiming Hopper (P-1418) to the french drain. The pipeline enters the french drain -1.07 m (-3.5 ft) below grade. The 184-H building utilized steam from the boilers to heat the coal conveyor system and coal shack. It's unknown whether a non-contact form of steam heating was used. The resulting condensate was drained to 0.1 m (4 in) VCT piping 1.07 m (3.5 ft.) below grade and was the inlet piping to the french drain. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-939)

FD5 is a 0.6 m (24 in) french drain with a 7.2 m (24 ft) long, 0.1 m (4 in) vitrified clay type (VCT condensate (CNDS) drain line from the 184-H Boiler House Transfer House to the french drain. The pipeline enters the 1.9 m (76 in) deep french drain at 1.07 m (42 in) below grade (P-1417, P-1418). The 184-H building utilized steam from the boilers to heat the coal conveyor system and coal shack. It's unknown whether a non-contact form of steam heating was used. The resulting condensate was drained to 0.1 m (4 in) VCT piping 1.07 m (3.5 ft) below grade and was the inlet piping to the french drain. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-940).

FD16 is a 0.9 m (36 in) french drain with a 5.2 m (17.1 ft) long, and a 11.0 m (36.1 ft) long pipeline; each is a 0.08 m (3 in) diameter heating/steam return line from 1717-H Hot Shop (west side) to the french drain. (P-1436) No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-969).

WCH requested that the 100-H-28:7 french drain be added as a subsite to 100-H-49:1. The french drain was discovered along the edge of a test pit that was excavated in support of confirmatory sampling for process water lines that were designed to supply water treated at the 183-H Filter Plant to the 105-H Reactor (TP3) at coordinates E577853, N152563, The french drain is a 0.9-m (36-in.) vitrified clay french drain at coordinates 577848 E, 152567 N, on the northeast side of the 105-H Reactor.

ICP metals, Mercury, Hexavalent Chromium, Polyaromatic Hydrocarbons, Pesticides and Total Petroleum Hydrocarbons.

Location: The locations for each of the French Drains are listed below. Washington State Plane coordinates are provided for each french drain. The associated drawings were rectified to Washington State Plane coordinates to obtain the coordinates listed below.

FD4 - E577504.29, N153006.45
 FD5 - E577553.28, N152996.60
 FD16 - E577970.71, N152553.58

100-H-28:7 TP3 FD - E577848, N152567

Process Description: The process description was inferred from the construction drawings and the function of the building that they were associated with. This information is provided for each of the french drains in the Site Description above.

Waste Type: Not Specified

Waste Description: The waste is the french drain, piping to the french drain, and potentially contaminated soil.

The SubSite is Part Of:

Code: 100-H-49

Names: 100-H-49; Potentially Contaminated French Drains

Code: 100-H-49:2

Classification: Accepted

Names: 100-H-49:2; 119-H, 181-H, 184-H and 183-H
French Drains

Reclassification: No Action (10/26/2011)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of nine french drains, the underlying soil of the potentially contaminated french drains, and their associated below grade piping components. The drains include:

FD1 was a dry well that was associated with the 119-H Sample Building. A 5.1 cm (2 in) cast iron pipeline ran from the 119-H Sample Building to the dry well. (H-1-19812, H-19805). During the Orphan Site's Walkdown the dry well could not be proven to exist or not exist from the view point outside the fence of the contamination area for the 105-H Reactor. No documents or records were obtained during historical research to indicate the end state of the dry well or underlying soil. Analogous sites include 100-D-24 and 100-F-46. (See orphan site photo # 031708-976).

FD2 was a 0.6 m (24 in) french drain with a 4.5 m (14.8 ft) long, 0.1 m (4 in) cast iron soil line from the 181-H Battery Room to the french drain (P-1337, P-1334). During the Orphan Site's Walkdown, there was no evidence of a recent disturbance or french drain existing within a 5 m (16.4ft) diameter area. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo #03172008-973).

FD3 was a 1 m (36 in) french drain with a 4.7 m (15.4 in) long, 0.1 m (4 in) vitrified clay type (VCT) condensate (CNDS) drain line (P-1417, P-1418). The french drain is 1.9 m (76 in) deep with the inlet pipeline at -1.1 m (-42 in) below grade. The pipeline comes from the 184-H Boiler House Coal Shack Track Hopper. The 184-H building utilized steam from the boilers to heat the coal conveyor system and coal shack. It is unknown whether a non-contact form of steam heating was used. The resulting condensate was drained via 0.1 m (4 in) VCT piping 1.07 m (3.5 ft.) below grade and was the inlet piping to the french drain. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03172008-974).

FD6 was a 1 m (36 in) french drain with a 8.7 m (28.5 ft) long, 0.1 m (4 in) diameter vitrified clay type (VCT) condensate (CNDS) drain line from the 184-H Coal Crusher House to the french drain (P-1417, P-1418). The pipeline enters the 1.9 m (76 in) deep french drain at -1.04 m (42 in) below grade (P-1417, P-1418). The 184-H building utilized steam from the boilers to heat the coal conveyor system and coal shack. It's unknown whether a non-contact form of

steam heating was used. The resulting condensate was drained to a 0.1m (4 in) VCT pipe 1.07 m (3.5 ft.) below grade and was the inlet piping to french drain. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-941).

FD7 was a 0.6 m (24 in) french drain with two pipe segments that are 0.1 m (4 in) diameter vitrified clay type (VCT) condensate (CNDS) drain lines from the 184-H Coal Transfer Tower to the french drain (P-1418). The pipeline enters the 1.9 m (76 in) deep french drain at -1.07 m (42 in) below grade (P-1418). The french drain had a total below grade depth of 1.92 m (76 in) with two 10.2 cm (4 in) diameter VCT inlet pipes 1.07 m (42 in) below grade and located 4.5 m (15 ft) east from the transfer house and conveyor system. The piping appears to be condensate from a 15.25 cm (6 in) above grade steam main. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-942).

FD8 was a 1 m (36 in) french drain with a 5.9 m (19.4 ft) long, 0.1 m (4 in) vitrified clay type (VCT) line. The inverse elevation at the french drain is 125.9 m (413 ft). The pipeline runs from the 184-H Boiler House Battery Room floor drain to the french drain. There is a second inlet from an unknown source. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. The location is estimated. (P-1413, P-1417) (See orphan site photo # 03122008-944).

FD9 is a 1 m (36 in) french drain with a 5.6 m (18.4 ft) long segment, a 6.6 m (21.7 ft) long segment, and a 2.4 m (7.9 ft) long segment of pipe; all are 10.16 cm (4 in) vitrified clay type (VCT) line. The french drain is 1.9 m (76 in) deep with the line inlet at --1.04 m (42 in) below grade (P-1417). The line runs from the 184-H Boiler House laboratory and radiator heating system to the french drain. There is a second inlet pipe at the french drain from an unknown source. No documents or records were attained/obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-946).

FD12 is a 1 m (36 in) french drain with a 9.7 m (37.8 ft) long, 0.1 m (4 in) diameter vitrified clay pipeline from the 1719-H First Aid Building (Laboratory Waste) to the french drain. (P-1235) No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo #03122008-961).

FD14 is a 0.9 m (36 in) french drain with a 5.3 m (17.4 ft) long, 0.08 m (3 in) diameter cast iron (CI) pipeline from 1717-H (northwest side) pipe shop radiator heater to the french drain (P-1436). The pipeline is 1.07 m (3.5 ft) below grade. (P-1436) No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-966).

Location: The locations for each of the French Drains are listed below. Washington State Plane coordinates are provided for each french drain. The associated drawings were rectified to Washington State Plane coordinates to obtain the coordinates listed below. Order is maintained with the listing in the site description.

FD1 - E577726.55, N152492.97

FD2 - E577523.25, N153473.24

FD3 - E577454.99, N153009.28

FD6 - E577503.89, N152994.26

FD7 - E577553.38, N152956.89

FD8 - E577537.92, N152954.51

FD9 - E577556.16, N152942.17

FD12 - E577927.32, N152676.63 (No french drain exists)

FD14 - E577970.58, N152592.89 (No french drain exists)

Process Description: building that they were associated with. This information is provided for each of the french drains in the Site Description above.

Related Sites/ Structures: The french drains (and drywells) are related to 119-H, 181-H, 184-H, 1717-H, 1719-H.

Waste Type: Not Specified

Waste Description: The waste consists of the french drain, piping to the french drain, and potentially contaminated soil. COPCs ICP metals, mercury, hexavalent chromium, polyaromatic hydrocarbons, polychlorinated biphenyls and total petroleum hydrocarbons.

Closure Info: This site is a confirmatory sampling site that did not need remediation.

The SubSite is Part Of:

Code: 100-H-49

Names: 100-H-49; Potentially Contaminated French Drains

Code: 100-H-49:3

Classification: Accepted

Names: 100-H-49:3; 183-H and 1717-H French Drains

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: This site consists of four french drains, the underlying soil of the potentially contaminated french drains, and their associated below grade piping components. One of the french drains is already part of the 100-H-4 waste site. The piping for the 100-H-4 french drain was not previously identified as a component of that waste site. Therefore the piping associated with the 100-H-4 french drain has been included within 100-H-49. The drains include:

FD10 is a 0.46 m (18 in) Drywell with a 45.5 m (149.3 in) long, 0.1 (4 in) diameter cast iron (CI) pipe to the french drain. The line runs from the 183-H Post Filter Building to the french drain. The site receives drainage from the battery, electrical, pump house and chlorine room. The inverse elevation at the french drain is 124.4 m (408.11 ft). The location is estimated. No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (P-1221, P-4302, P-4305) (See orphan site photo # 03122008-957).

FD11 is a 0.9 m (36 in) french drain with a 17.9 m (58.7 ft) long, 0.1 m (4 in) diameter pipeline from 183-H (post filter) to the french drain. The site receives drainage from the battery, electrical, pump house and chlorine room. The inverse elevation at the french drain is 124.4 m (408.11 ft). The location is estimated. (P-1221, P-4302, P-4305) No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-958).

FD13 is a 8.0 m (26.2 ft) long cast iron 0.08 m (3 in) diameter pipeline from the 1717-H machine/welding shop typical heaters to a 0.76 m (30 in) french drain (100-H-4). No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil (P-1436) (See orphan site photo # 03122008-967).

FD15 is a 0.76 m (30 in) french drain with a 7.8 m (25.6 ft) long, 0.08 (3 in) diameter cast iron (CI) pipeline from 1717-H (east side) Electrical Shop and Mechanical Equipment room heaters to the french drain (P-1436). No documents or records were obtained during historical research to indicate the end state of the french drain or underlying soil. (See orphan site photo # 03122008-968).

Location: coordinates are provided for each french drain. The associated drawings were rectified to Washington State Plane coordinates to obtain the coordinates listed below. Order is maintained with the listing in the site description.

FD10 - E577782.08, N152761.73 (No french drain exists)
 FD11 - E577778.37, N152752.41 (The location is estimated.)
 FD13 - E578009.56, N152598.17 (100-H-4; The location is estimated.)
 FD15 - E578009.69, N152570.62 (The location is estimated)

Process Description: The process description was inferred from the construction drawings and the function of the building that they were associated with. This information is provided for each of the french drains in the Site Description above.

Related Sites/ Structures: The french drains (and drywells) are related to 183-H and 1717-H.

Waste Type: Not Specified

Waste Description: The waste is the french drain, piping to the french drain, and potentially contaminated soil.

The SubSite is Part Of:

Code: 100-H-49

Names: 100-H-49; Potentially Contaminated French Drains

Code: 100-H-50

Classification: Accepted

Names: 100-H-50; 100-H Steam Condensate French Drains

Reclassification: No Action (6/16/2011)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site consists of fourteen discrete locations, underlying soil and their associated below grade piping components for steam condensate French drains. The French drains were discovered during the Orphan Site Evaluation (OSE) historical review. Each of the facilities that the French drains are associated with, were identified and processes or functions of the buildings summarized in the list below. Details of inlet pipe sizes, depths and French drain size and construction details and depths are provided when available in the descriptions below. When exact locations were not available from construction drawings the location was estimated by placing the location 4.6 meters (15 feet) away from building. In these cases the inlet piping is in a well defined location. See detailed spatial analysis map for French Drain locations.

Orphan sites field investigations were conducted on March 12th and 17th of 2008. Photographs of the present site conditions were obtained.

FD1. The site is a 1.22 m (48 in) reinforced concrete pipe French drain with a 0.1 m (4 in) clay tile 6.1 m (20 ft) long at a 1% slope (1 in of slope per linear foot of pipe) from 1.1 m (42 in) raw water line. The site is associated with the 182-H Reservoir (north end) (P-4737 Sheet 1, P-4737 Sheet 2). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD2. The site is a 0.9 m (36 in) French drain with a 0.1 m (4 in) diameter cast iron (CI) pipeline from the 182-H Reservoir (south side) heater systems to the French drain (P-1368, P-1370). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD3. The site is a 0.46 m (18 in) dry well with a 2.54 cm (1 in) steam condensate pipeline from the 190-H Building (north side) (H-1-14575, H-1-14580, H-1-14581). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD4. The site is a 0.46 (18 in) dry well with a 0.05 m (2 in) steam condensate pipeline from the 190-H Building (east side) (H-1-14575, H-1-14580, H-1-14581). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD5. The site is a 0.61 m (24 in) dry well, 1.4 m (4.6 ft) deep with a 2.54 cm (1 in) steam condensate pipeline from 190-H Building to the dry well (H-1-14575, H-1-14580, H-1-14581). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD6. The site is a 0.61 m (24 in) dry well with a steam condensate pipeline from the 1703-H Office Building (west side) to the dry well (P-9340). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD7. The site is a 0.61 m (24 in) French drain with a ventilation drainage pipeline from the 1703-H Office Building (east side) to the French drain (P-9340). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD8. The site is a 0.9 m (36 in) French drain from the 184-H building (north side) that utilized steam radiator unit heaters with 1.9 cm (0.75 in) condensate blow off traps and drip legs which discharged to French drains with 0.1 m (4 in) diameter vitrified clay type (VCT) inlet piping to the French drain (P-1417).

FD9. The site is a 0.9 m (36 in) French drain with a 0.1 m (4 in) diameter VCT pipeline from a return riser and steam supply riser from the 184-H Boiler House (east side) to the French drain (P-1417). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD10. The site is a 0.9 m (36 in) French drain with a 0.1 m (4 in) diameter VCT condensate pipeline from the 184-H Boiler House (west side) to the French drain. (P-1417) No documents or records were obtained during historical research to indicate a final disposition for the site.

FD11. The site is a 0.61 m (24 in) French drain with a 0.1 m (4 in) diameter VCT pipeline from a return riser and steam supply riser from 184-H Boiler House (south side) to the French drain. (P-1417) No documents or records were obtained during historical research to indicate a final disposition for the site.

FD12. The site is a 1 m (36 in) French drain with a 9.4 m (31 ft) long, 2.54 cm (1 in) line connecting from the 1901-H Water Tower trap discharge to the French drain (P-1426). There is an additional pipeline to the French drain that is a 8.8 m (29 ft) long, 3.81 cm (1.5 in) line connecting from the 1901-H Water Tower ejector discharge to the French drain (P-1426). The pipelines are soft water trap discharge lines (P-1416 and P-1426).

FD13. The site is a 0.9 m (36 in) French drain with a 0.1 m (4 in) vitrified clay (VC) pipeline to the French drain (P-1237). No documents or records were obtained during historical research to indicate a final disposition for the site.

FD14. The site is a 0.61 m (24 in) French drain filled with soil/gravel. The drain was discovered in the field during the orphan site evaluation. The french drain does not appear on any construction drawings. The proximity of french drain FD5 to FD14 suggests that they might one in the same. The french drain is believed to receive steam condensate from the 190-H

Annex. This drain was later discovered to be the same as (duplicate) FD5.

Location: Selected as built construction drawings were rectified into the Geographic Information System (GIS) for each of the french drains and associated piping locations. The coordinates are provided in Washington State Plane coordinates. The coordinates are listed in the same sequence as the elements in the site description. Easting Northing 1. E577818.69, N153047.52 2. E577757.55, N152923.92 3. E577860.28, N152695.06 4. E577869.99, N152659.28 5. E577799.90, N152581.30 6. E577911.73, N152556.89 7. E577946.23, N152551.07 8. E577535.93, N152954.52 9. E577556.29, N152918.35 10. E577523.63, N152909.26 11. E577540.71, N152880.20 12. E577527.71, N152963.39 13. E577926.74, N152624.98 (The location is estimated.) 14. E577801.04, N152586.00

Process Description: The process descriptions were ascertained from construction drawings and are provided with construction drawing numbers. A spatial analysis was conducted for each of the french drains and dry well and all have been identified as receiving steam condensate. Steam was typically used at all facilities for heating purposes. The 184-H Power House boiler facility supplied high pressure steam to all buildings through an above grade pipeline system. The boiler facility utilized clean filtered water from the 183-H filter building. The steam supply was used in a non-contact radial heating system. As a non-contact system the steam remained uncontaminated. The steam transport process utilized a high pressure supply line and a low pressure return or discharge line. It was necessary to bleed both the supply and return lines to prevent condensate build up. The condensate was typical blow off from the above grade piping system into a below grade covered French Drain as illustrated on construction drawings as a safety precaution. French drains' diameters and construction material varied depending on steam piping size, service capacity or pounds per hour, and expected flow rate received.

Waste Type: Equipment
Waste Description: The waste is the French drain and associated piping.

Code: 100-H-51	Classification: Accepted
Names: 100-H-51; Potentially Contaminated Pipeline Segments	Reclassification: None
Type: Process Sewer	Start Date:
Status: Inactive	End Date:

Description: This site consists of five subsites. 1. Is a 15.2 cm (6 in) vitrified clay pipe sanitary sewer pipeline. 2. Is a 5.08 cm (2 in) steel brine discharge line. 3. Consists of two parallel pipelines, a 5.1 cm (2 in) steel brine discharge line and a 7.6 cm (3 in) steel filtered water line. 4. Is a 15.24 cm (6 in) vitrified clay storm drain (and smaller laterals) that run between the 1701-H, 1709-H and 1720-H buildings and a ditch (100-H-27). 5. Consists of a 25.4 cm (10 in) carbon steel pipe located between the Columbia River shoreline and the 184-H Power House.

Location: These pipeline segments were part of the 100-HR-1 Operable Unit. As built construction drawings were rectified into Washington State Plane coordinates. Pipelines were then incorporated into the Geographic Information System (GIS) for each of the four piping segments referred to in this site.

Process Description: The process descriptions were ascertained from construction drawings and are provided with construction drawing numbers. Miscellaneous pipeline segments are associated within unique building processes. Examples of the miscellaneous pipes include: boiler fuel delivery systems, elevator shafts, air conditioning systems, railcar/truck delivery spots, equipment drains, storage tanks pressure relief systems, compressor blow downs, and chemical transfer pipelines.

Related Sites/ Structures: Associated buildings and waste sites include: 1701-H, 1703-H, 1709-H, 1720-H, 184-H, 100-H-28, 116-H-9, 100-H-53, and 100-H-27.

Waste Type: Equipment

Waste Description: The waste will include the pipelines and any potential contaminated soil. Contaminants of potential concern have not been fully evaluated for each individual pipeline segment.

This Site has the Following SubSites:

Code: 100-H-51:1

Names: 100-H-51:1; 1703-H Sanitary Sewer Segment

Code: 100-H-51:2

Names: 100-H-51:2; 117-H Seal Pit Crib Feedline

Code: 100-H-51:3

Names: 100-H-51:3; 184-H Brine Discharge Line

Code: 100-H-51:4

Names: 100-H-51:4; 100-H Main Gate Storm Drain

Code: 100-H-51:5

Names: 100-H-51:5; Discovery Pipeline at 128-H-1

Code: 100-H-51:6

Names: 100-H-51:6; Carbon Steel Pipe

Code: 100-H-51:1

Classification: Accepted

Names: 100-H-51:1; 1703-H Sanitary Sewer Segment

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 15.2 cm (6 in) diameter vitrified clay pipe (VCP) sanitary sewer segment. The line connects the 1703-H building with the 100-H-28, 100-H Water Treatment Facilities Underground Pipelines. The subsite also includes a short section of a 10.16 cm (4 in) soil pipe where the 15.2 cm (6 in) VCP connects to the 1703-H building.

The 1703-H building was constructed in 1949 and contained offices for area administrative and technical personnel. The building was demolished in 1974 leaving the footings and foundations after demolition of the building were buried and leveled (UNI-7231974). The 100-H-28:5 waste site has been identified by WCH for remediation, see WCH CCN #141052.

Location: The pipeline segment is located on the west side of 1703-H building and runs north, terminating at a manhole where it joins the 100-H-28:5 Sanitary Sewer pipeline.

Waste Type: Soil

Waste Description: The waste has been described as contaminated soil. The COPCs include: arsenic, barium, cadmium, chromium, hexavalent chromium, lead, selenium, silver, mercury, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and chlorinated pesticides.

The SubSite is Part Of:

Code: 100-H-51

Names: 100-H-51; Potentially Contaminated Pipeline Segments

Code: 100-H-51:2

Classification: Accepted

Names: 100-H-51:2; 117-H Seal Pit Crib Feedline **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of a 10 cm (4 in) diameter cement asbestos feed line that ran from the 117-H Air Filter Building to waste site 116-H-9, 117-H Crib, 117-H Seal Pit Crib.

The 117-H Air Filter Building and crib were constructed in 1960. The building was closed under a determination of residual contamination levels (ARCL) (UNI-3001). The 117-H building was demolished in 1984. A distribution header lies approximately 1.5 m (5 feet) below grade and is covered by a polyethylene barrier.

The pipeline was identified as part of the 116-H-9 waste site initially and later reassigned to the 100-H-51 waste site on 2/19/2009. This was done to facilitate closure of 116-H-9 while postponing remediation of the pipeline. Per WCH documentation remediation of 116-H-9 began in October 2008.

Location: The pipeline segment is located between the 117-H Air Filter Building and the 117-H Seal Pit Crib.

Waste Type: Not Specified

Waste Description: The waste is remaining pipelines and any potentially contaminated soil. COPCs include: carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, tritium, radium-226, thorium-228, thorium-232, uranium-238, cadmium, chromium (total), hexavalent chromium, mercury, lead, selenium, silver, and PCBs.

The SubSite is Part Of:

Code: 100-H-51
Names: 100-H-51; Potentially Contaminated Pipeline Segments

Code: 100-H-51:3 **Classification:** Accepted
Names: 100-H-51:3; 184-H Brine Discharge Line **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of two parallel pipelines, a 5.1 cm (2 in) steel brine discharge line and a 7.6 cm (3 in) steel filtered water line that ran from the 184-H Power House Building to the 184-H Salt Dissolving Pit and Brine Pump House.

Documentation established that the Power House was demolished in 1997. The 184-H Salt Dissolving Pit and Brine Pump House (100-H-16) were probably demolished in place as were similar brine pits at 184-B and 184-D.

Location: The pipelines were located between the 184-H Power House Building and the 184-H Salt Dissolving Pit and Brine Pump House.

Process Description: Filtered water was piped from the 184-H Power House to the 184-H Salt Dissolving Pit and Brine Pump House where sodium chloride was added and the brine was pumped back to the 184-H Power House for further use.

Waste Type: Not Specified

Waste Description: The waste is the remaining pipelines and any potentially contaminated soil.

The SubSite is Part Of:**Code:** 100-H-51**Names:** 100-H-51; Potentially Contaminated Pipeline Segments**Code:** 100-H-51:4**Classification:** Accepted**Names:** 100-H-51:4; 100-H Main Gate Storm Drain**Reclassification:** No Action (5/26/2011)**Type:** Process Sewer**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of a 15.2 cm (6 in) diameter vitrified clay pipeline (VCP) storm drain that ran north from the 1701-H, 1702-H and 1709-H Buildings to 100-H-27, 100-H Area Patrol Headquarters Storm Runoff Ditch. The pipeline includes two 10.2 cm (4 in) lateral sections of VCP feed pipe from 1702-H and 1709-H buildings to the 15.2 cm (6 in) pipeline.

Location: The subsite was located between the 1701-H Building and the 100-H-27 storm runoff ditch. Additionally, the pipeline ran parallel and approximately 11 m (36 ft) north of the former location of the 1607-H3 septic system.

Waste Type: Not Specified**Waste Description:** The waste will include the pipelines and any potential contaminated soil.

Closure Info: Confirmatory sampling was performed on October 7, 2010 to determine if remedial action would be required. The results indicated that the waste site achieved compliance with the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 100-H-5 1:4 subsite; therefore, remediation was not necessary. The results of the confirmatory sampling are used to make reclassification decisions for the 100-H-51:4 subsite in accordance with the TPA-MP-14 procedure in the Tri-Party Agreement Handbook Management Procedures (DOE-RL 2007).

A reclassification to No Action for the 100-H-51:4 subsite is supported based on site history, process knowledge, field observations, and comparison of residual contaminant concentrations against RAGs. The current site conditions achieve the Ras and the corresponding RAGs established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2009) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR -2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD) (EPA 1999). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The 100-H-51:4 subsite did not extend into the deep zone. No Institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are required.

The SubSite is Part Of:**Code:** 100-H-51**Names:** 100-H-51; Potentially Contaminated Pipeline Segments**Code:** 100-H-51:5**Classification:** Accepted**Names:** 100-H-51:5; Discovery Pipeline at 128-H-1**Reclassification:** None**Type:** Product Piping**Start Date:**

Status: Inactive

End Date:

Description: The pipeline is a steel pipe that ran from the Columbia River to the sanitary water system just south of the 1713-H building.

Location: The pipeline is located at the Columbia River shoreline and continues south ending 50 m (164 ft) beyond the 128-H-1 Burn Pit.

Process Description: There is no process history associated with this subsite.

Waste Type: Not Specified

Waste Description: The waste will include the pipelines and any potential contaminated soil.

The SubSite is Part Of:

Code: 100-H-51

Names: 100-H-51; Potentially Contaminated Pipeline Segments

Code: 100-H-51:6

Classification: Accepted

Names: 100-H-51:6; Carbon Steel Pipe

Reclassification: None

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The 100-H-51:6 waste site is a section of 25-cm (10-in) pipe that starts approximately 70-m (231-ft) south of the 100-H-51:5 waste site and ends near the 1713-H Building. This particular section of carbon steel pipe is thought to have connected to the southern side of a temporary wooden water tank and ended near the 1713-H Building. This pipeline and water tank is suspected to be part of an extensive temporary water system for construction of the 100-H Area in 1948 (HW-24800-2). This section of pipe (that is currently named 100-H-51:6) used to be part of 100-H-51:5 and 100 -H-53 waste site until confirmatory sample results exceeded direct exposure cleanup levels and was forced to be removed, treated, and disposed (RTD).

Location: The pipeline is located west of the 1713-H building.

Process Description: There is no process history associated with this subsite.

Waste Type: Not Specified

Waste Description: The waste will include the pipelines and any potential contaminated soil.

The SubSite is Part Of:

Code: 100-H-51

Names: 100-H-51; Potentially Contaminated Pipeline Segments

Code: 100-H-52

Classification: Accepted

Names: 100-H-52; 184-HA Septic Drain Field and Associated Piping

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1965

Status: Inactive

End Date: 1/1/1974

Description: The site consists of a septic drain field and associated piping that supported the 184-HA boiler annex. In the center of the drain field (oriented east/west) are four, 20 centimeter (8 inch)

diameter perforated concrete pipe laterals.

Location: The drain field is located on the west side of the 184-HA Building. It is approx. 20.8 meters (68.6 feet) east of the 190-HA building. Global Positioning System (GPS) coordinates for the drain field are E577820/N152595. These are the coordinates of where the 5.1 centimeter (2 inch) sanitary drain (SD) effluent pipe line connects into the east side of the drain field.

Process Description: The 184-HA Boiler House Building and associated equipment was constructed in approximately 1965 to replace the 184-H boiler house. The 184-HA building was removed and its associated footings and foundations were demolished and backfilled in 1974. The site was leveled. The boiler provided steam to the administration and Central Shops buildings, which consisted of 1703, 1704, 1716, 1717, 1719, 1722, 1760, and 1761. Blow-down effluent from the boiler, drained via the 10.2 centimeter (4 inch) condensate line, that connected to the east end of the drain field, to the 20 centimeter (8 inch) perforated concrete main line.

Related Sites/ Structures: The septic system is associated with the 184-HA building.

Code: 100-H-53 **Classification:** Accepted

Names: 100-H-53; Carbon Steel Pipe in River Bank **Reclassification:** None

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: This site is a 25 cm (10 in) diameter and 1.8 m (6 ft) long (exposed portion) carbon steel pipe that runs northeast toward the river shore. A WCH Orphan Sites Field Evaluation was conducted in this area in August of 2007. Geophysics (GI # 0590309) was conducted in October 2007, and results indicate that the visible segment of the 25 cm (10 in) diameter pipe is not part of an intact system and does not extend below grade beyond the 1.8 m (6 ft) currently visible.

Location: This site is located approximately 28 m north-northeast of the southeast end of rejected WIDS site 600-258 (Pre-Hanford debris) and it is located near the shoreline.

Process Description: The process associated with this pipe is unknown. The pipeline may have been related to pre-Hanford activities, since there is this type of debris associated with 600-258. Site 600-258 is located on top of the bank and the pipe is located towards the south end of 600-258. See site 600-258.

Related Sites/ Structures: Pipe is NE of 600-151, (Dumping Areas 50 yards and 200 yards Downstream of River Mile 14. Co-located near 600-258.

Waste Type: Equipment

Waste Description: The waste is the pipeline and any potentially contaminated soil underlying the pipe. Since the pipeline can not be related to any particular human activity, the contaminants of potential concern are unknown.

Code: 100-H-57 **Classification:** Accepted

Names: 100-H-57; Water Tower Foundations at 100H **Reclassification:** None

Type: Foundation **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of the underground piping, valves, sumps and other structures at the base of

the two elevated water towers adjacent to the 105-H Reactor.

Location: The towers are located on either side of the 105-H Reactor.

Process Description: Water was provided as a means to remove heat from the pile. A network of interconnecting pipelines, by-pass lines, and standby pumping facilities were provided to insure that water service to the pile was maintained even when a part of the system was inoperable (TNX-PG-4). The principal purpose of the two elevated storage tanks at the 105-H Reactor was to provide standby storage of cooling water in the event that the service to the pile was interrupted. The 105-H Reactor had two 300,000 gallon capacity, ellipsoidal-steel-plate tanks (187-H1 and 187-H2), elevated 120-feet above the ground level (HW-24800-2). Sodium silicate was supplied to the tanks for corrosion prevention (H-1-13254). The construction drawings (P-1257 and P-2031) for the 187-H1 and 187-H2 tanks show a french drain receiving condensate through a 3.8 cm (1.5 in) pipeline. The drawings also suggest that the sump in the bottom of the valve pit was emptied into this french drain. The drawings show that the french drains were installed a minimum of 4.6 m (15 ft) on the north side of the tanks. However this would put them very close to a labyrinth of pipes that run east/west on the north side of the reactor. It is possible that they were actually installed in another location. One possible location for the french drain from tank 187-H2 might be waste site 100-H-8. It is not known where the influent line for 100-H-8 is piped from. There are no french drains already identified in the area near tank 187-H1. Although process knowledge about the water system at the 100-H Area would suggest that sodium dichromate was not added to the water towers, the lead regulatory agency has requested that the bases of these water towers be identified as a waste site. Their premise is that a similar waste site (100-D-94) in the D Area was created to assess the potential impact from sodium dichromate. An email from Mark Morton to Earl Prichard and Stephen Hamblin on March 17, 2003 was the first to raise the issue of sodium dichromate in the H and DR water towers (147123). The valve pits at both of the 105-H water towers was completely removed by demolition and decontamination activities.

Code: 116-H-1	Classification: Accepted
Names: 116-H-1; 107-H Liquid Waste Disposal Trench	Reclassification: Interim Closed Out (4/3/2001)
Type: Trench	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1965

Description: The site has been remediated and closed out. The disposal trench was oriented in a north-south direction and was divided into three separate lobes. The trench was fed by a single 51-centimeter (20-inch) pipe that originated in the pumphouse located at the northwest corner of the 107-H Retention Basin (this pipeline is part of 100-H-21).

Location: The site was located south of the 107-H Retention Basin (site code 116-H-7).

Process Description: The trench operated from 1952 until 1958, receiving mixed waste effluent from the 116-H-7 Retention Basin during reactor shutdowns caused by fuel element ruptures. The process effluent coolant received by this trench reportedly contained debris from fuel element ruptures. Additionally, the trench received water and sludge removed from the 116-H-7 Retention Basin in April and May 1965, during basin deactivation. The primary lobe was supplied by a DN500 50 centimeter (20-inch) steel pipe that entered near its bottom. The pipe originated at the 1607-H Pump House, near the northwest corner of the 116-H-7 Retention Basin.

Related Sites/Structures: The disposal trench is associated with the 105-H Reactor, 116-H-7 Retention Basin and the 100-H-21 pipeline site.

Waste Type: Water

Waste: The site received diversion effluent from the 107-H Retention Basin during reactor outages due

Description: to fuel element ruptures and water and sludge from 107-H during deactivation of the unit.

Closure Info: Remedial action objectives (RAO's) and goals (RAG's) for the 116-H-1 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area. The selected remedial action involves excavating the site to the extent required to meet specified soil cleanup levels, disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Area of the Hanford Site, and backfilling the site with clean soil to adjacent grade elevations.

Remedial action at the 116-H-1 site began on June 29, 1999. Excavation of the site involved removing the overburden materials and underlying contaminated soil. Based on field screening (discussed in Section 4.2), overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed of at ERDF.

On June 8, 2000, the excavation was completed. The elevation of the bottom of the excavation was at 123.4 meters (405 feet) upon completion. The excavation was approximately 12,735 square meters (137,077 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 82,706 metric tons (91,168 tons) of material from the site were disposed of at ERDF.

Waste site contaminants of concern (COCs) identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The COCs and contaminants of potential concern (COPCs) for this site consist of cesium-137, cobalt-60, europium-152, europium-154, europium-155, plutonium-239/240, strontium-90, and hexavalent chromium.

Additional COPCs identified during remediation, based on past orchard land-use knowledge and excavated waste sampling analyses, included arsenic and lead. Arsenic was not detected in cleanup verification samples at concentrations above the Washington State background of 20 milligrams per kilogram (Washington Administrative Code 173-340). Lead was identified as a COPC based on excavated waste sample analyses. Because lead was detected above the Hanford Site background of 10.2 milligrams per kilogram, lead was added to the final list of COCs for the site.

Cleanup verification sampling for the deep and shallow zones was done on June 15, 2000, and July 25, 2000, respectively. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods, as required per the SAP (DOE/RL-96-22).

The remedial action at the 116-H-1 site has achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD (EPA 1995) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 116-H-1 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-H-1 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-H-1 site is verified to be remediated in accordance with the ROD (EPA 1995).

Code: 116-H-2	Classification: Accepted
Names: 116-H-2; 1608-H Crib & Trench; 1608-H Liquid Waste Disposal Trench	Reclassification: Interim Closed Out (3/1/2001)
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1965

Description: This site, including its feed pipe, has been remediated and closed out. It was an open trench that was fed by a 15-centimeter (6-inch) vitrified clay pipe that originated from the 1608-H Pump House. The feed pipe is shown on Hanford drawings H-1-19824 and M-1904-H.

Location: The site was located 76 meters (250 feet) south of the 105-H Reactor Building.

Process Description: From 1953 to 1965, the site received effluent from the 105-H Ball 3X project. Water was pumped from the 105-H Reactor Building to the trench via the 1608 Pump House.

Related Sites/Structures: The trench is associated with the 105-H Reactor Building and 1608-H Pump House. In 1953, the 116-H-2 trench overflowed and flooded a triangular area bounded by railroad tracks, known as the 100-H-17 Overflow. The 100-H-30 Sanitary Sewer trench was also contaminated with effluent that overflowed from 116-H-2.

Waste Type: Water

Waste Description: The site received coolant water from the 105-H Reactor Building during the Ball 3X system upgrade program. The site was used during other upgrade programs and when maintenance was necessary on the effluent system.

Closure Info: 100-H-17, 116-H-2, 100-H-2 and 100-H-30 were addressed as a group. The information below documents information for the group of sites.

The cleanup verification package (CVP-2000-00031) has demonstrated that remedial action at for the 100-H-17 Overflow, 116-H-2 Liquid Waste Disposal Trench, 100-H-2 Buried Thimble Site, and the 100-H-30 Sanitary Sewer Trench sites have achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1995), and the amendment to the ROD (EPA 1997), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). This site is located in an area that, prior to World War II and formation of the Hanford Site, was occupied by fruit tree orchards. These sites were grouped together due to their proximity and similarity in the type of waste they received.

The COCs identified in the 100 Area Remedial Action Sampling and Analysis Plan for this site consisted of plutonium-239/240, uranium-238, strontium-90, cesium-137, cobalt-60, europium-152, europium-154, and hexavalent chromium.

At the completion of the remedial action, the total excavation was approximately 6,240 square meters (67,170 square feet) in area with a maximum depth of approximately 2.6 meters (8.5 feet). Approximately 19,920 metric tons (21,960 tons) of material from the site were disposed of at the ERDF.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (Ics) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15

feet]) are required.

Code: 116-H-3	Classification: Accepted
Names: 116-H-3; Perf Decontamination Drain; 105-H Dummy Decontamination French Drain	Reclassification: Interim Closed Out (4/3/2001)
Type: French Drain	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1965

Description: This site has been remediated and closed out. The site was a french drain made of vitreous tile conduit. The upper surface of the french drain extended a few inches above the ground and had a metal cover. The waste site includes an underground feed pipeline which is 65 meters (215 feet) in length.

Location: The site was located southeast of the 105-H Building.

Process Description: The 116-H-3 French Drain received spent nitric acid and rinse water from the decontamination of fuel element spacers, reactor process tube caps, and other reactor hardware between 1950 and 1965.

Related Sites/ Structures: The site was related to the 105-H Reactor Building.

Waste Type: Process Effluent

Waste Description: The site received spent acid and rinse water from the 105-H Dummy Decontamination Facility, which decontaminated fuel element spacers and other reactor hardware.

Closure Info: The 116-H-3 French Drain has been remediated to meet the cleanup standards specified in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units U.S. Environmental Protection Agency, Region 10, Seattle, Washington. Remedial actions were performed so as to allow rural-residential use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep) and to protect groundwater and the Columbia River. The basis for reclassification is described in detail in the Cleanup Verification Package for the 116-H-3 French Drain, CVP-2000-00032, Bechtel Hanford, Inc., Richland, Washington. The cleanup verification package does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]). Therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required.

Remedial action at the 116-H-3 site began on February 17, 2000. Excavation of the site involved removing the overburden materials, the french drain, the pipeline leading from the reactor building to the french drain, and underlying contaminated soil. Based on field screening, overburden materials identified as potentially clean were placed in stockpiles for potential use as backfill. Contaminated materials were disposed of at ERDF.

Waste site contaminants of concern (COCs) identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The COCs for this site consisted of cobalt-60, cesium-137, europium-152, europium-154, and hexavalent chromium.

Because of the likely use of lead-arsenate pesticide on the former orchard areas and based on agreement with the regulatory agencies, arsenic was included as a site contaminant of potential concern (COPC). The COPC arsenic was not detected in cleanup verification samples at concentrations above Washington State background of 20 mg/kg (Washington Administrative Code [WAC] 173-340), and is therefore not addressed further in this document. Arsenic cleanup verification sample results (maximum detection of 11.5 mg/kg) are listed in Appendix

A. Analysis of excavated waste samples did not indicate that lead should be identified as a COPC or COC for the 116-H-3 site.

On June 26, 2000, the excavation was completed. The elevation of the bottom of the excavation was at 123.5 meters (405 feet) upon completion. The excavation was approximately 855 square meters (9,203 square feet) in area with a maximum depth of approximately 4.6 meters (15 feet). Approximately 2,707 metric tons (2,985 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility (ERDF).

Cleanup verification sampling began on August 1, 2000. The final verification samples were submitted to offsite laboratories (Severn Trent, Thermo Analytical, and RECRA) for analysis using approved U.S. Environmental Protection Agency analytical methods, as required per the SAP (DOE/RL-96-22).

The cleanup verification package (CVP) sampling demonstrates that remedial action at the 116-H-3 site has achieved the Remedial Action Goals and Objectives (RAO's and RAG's) established in the approved Interim Action Record of Decision (ROD) Amendment (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The remaining soils at the 116-H-3 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-H-3 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-H-3 site is verified to be remediated in accordance with the ROD and may be backfilled.

Code: 116-H-4	Classification: Accepted
Names: 116-H-4; 105-H Pluto Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1952
Description: The site is currently a flat, cobble covered field located inside the 105-H security fence. The crib location is not marked.	
Location: The crib was located near the southwest corner of the 105-H Building and adjacent to the 132-H-3 Effluent Pumping Station.	
Related Sites/ Structures: The site was related to the 105-H Reactor.	
Waste Type: Process Effluent	
Waste Description: The site received effluent from tubes containing ruptured fuel elements. A 1953 document reports that approximately 270 curies of fission products were released to the crib as a result of the rupturing of ten slugs and the presence of 1,000 kilograms (2,200 pounds) of sodium dichromate.	

Code: 116-H-5	Classification: Accepted
Names: 116-H-5; 116-H-5 Outfall Structure; 1904-H Outfall Structure	Reclassification: None
Type: Outfall	Start Date: 1/1/1949

Status: Inactive **End Date:** 1/1/1965

Description: This site includes the open-topped, compartmentalized, reinforced concrete outfall structure. A 183 centimeter (72 inch) concrete process sewer line from the 1906-H Pump House, and two 152 centimeter (60 inch) diameter steel retention basin pipelines entered the eastern face; and two 152 centimeter (60 inch) concrete pipelines exited the western face to the river.

Location: The site is located on the Columbia River shoreline north of 107-H Retention Basin.

Process Description: The outfall was a reinforced concrete weir box that directed the water through either the river discharge pipelines (100-H-34) or through the spillway (flume) (100-H-36). The spillway was a concrete flume used when the river pipelines were blocked, damaged or undergoing maintenance. Process sewer wastes, and reactor cooling water collected and temporarily stored in the 107-H retention basin, were pumped to the river via the 116-H-5 outfall structure and associated 100-H-34 river effluent pipelines.

Related Sites/Structures: The outfall is associated with 116-H-7 Retention Basin, 184-H Power House, 100-H-34 (River Effluent Pipelines), the 100-H-36 spillway, the 100-H-21 process effluent lines, the 100-H-34 river effluent pipelines, and the 1906-H Pump House and associated pipelines.

Waste Type: Construction Debris

Waste Description: The site received effluent water through two lines from the 107-H Retention Basin. A third line from the 100 H Area process sewer also discharged to it.

Contaminants of potential concern include Co-60, Cs-137, Eu-152, -154, -155, Ni-63, Pu-238, -239/240, Am-241, C-14, H-3, Tc-99, Sr-90, U-234, -235, -238, Cr+6, Cr (total), Pb, and Hg.

Code: 116-H-7 **Classification:** Accepted

Names: 116-H-7; 107-H; 107-H Retention Basin **Reclassification:** Interim Closed Out (7/24/2001)

Type: Retention Basin **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1965

Description: This site has been remediated and closed out. The basin was a concrete-lined rectangular structure. The unit had been partially demolished and backfilled to a depth of approximately 1.2 meters (4 feet) above the floor, and sloped to the top of the walls.

Location: The site is located northeast of 105-H.

Release Description: The unit and its effluent line developed leaks during the years of operation. The rate of leakage has been estimated to be as high as 19,000 to 38,000 liters-per-minute (5,000 to 10,000 gallons-per-minute) . The extent of contamination from these releases was within the area encompassed by the unit.

Related Sites/Structures: Sludge and waste removed from this unit during repair work in the spring of 1953 were buried in a trench east of the unit (WIDS Site Code 100-H-5). The trench was originally covered to grade with 1.5 meters (5 feet) of soil. In May 1965, the location was excavated to a depth of approximately 1.8 meters (6 feet) to obtain fill material for this unit. There was no indication of remaining radioactivity, and consequently the trench was released from radiological controls.

Waste Type: Process Effluent

Waste Description: This site received cooling water effluent from the 105-H Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Seventy percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 curies have leached into the concrete floor and walls.

Closure Info: In 2000 the site was remediated, and closed out in 2001. Remedial action objectives and goals

for the 116-H-7 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (EPA 1995) and the Remedial Design Report/Remedial Action Work Plan (RDR/RAWP) for the 100 Area (DOE/RL-96-17).

The selected remedial action for the 116-H-7 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility (ERDF) at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern (COPCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22). The COCs for this site consist of: cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, uranium-238, hexavalent chromium, and lead.

Because of the likely use of lead-arsenate pesticide on the former orchard areas and based on regulatory agency agreement, arsenic was included as a site COPC. However, arsenic was not detected in cleanup verification samples at concentrations above Washington State background of 20 milligrams per kilogram (mg/kg) (Washington Administrative Code 173-340) (the maximum detected value was 6.5 mg/kg), and was not included in further analysis for this site.

Additional contaminants that were identified from analyses of material excavated during remediation were also evaluated as COPCs. The following COPCs identified during remediation were also detected in cleanup verification samples and were evaluated as COCs for closeout of the 116-H-7 site: total chromium, aroclor-1242, and aroclor-1260.

Based on agreement with the regulatory agencies, technetium-99 was identified as a site COPC, because of its presence in groundwater beneath the site. Technetium-99 was not detected in cleanup verification samples and therefore was not included as a COC in evaluation of the site for close out.

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of the remedial action, the total excavation was approximately 23,660 square meters (254,700 square feet) in area with a depth of approximately 4.8 meters (15.7 feet). Approximately 218,130 metric tons (240,440 tons) of material from the site were disposed of at the ERDF.

The Cleanup Verification Package (CVP) demonstrated that remedial action at the 116-H-7 site achieved the RAOs and corresponding RAGs established in the approved Interim Action ROD and RDR/RAWP. The remaining soils at the 116-H-7 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-H-7 site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-H-7 site is verified to be remediated in accordance with the Interim Action ROD (EPA 1995).

Code: 116-H-9	Classification: Accepted
Names: 116-H-9; 117-H Crib; 117-H Seal Pit Crib	Reclassification: Interim Closed Out (12/22/2010)
Type: Crib	Start Date: 1/1/1960
Status: Inactive	End Date: 1/1/1965

Description: The unit is a gravel filled crib. A distribution header lies approximately 1.5 meters (5 feet) below grade and is covered by a polyethylene barrier. The polyethylene barrier is covered by 1.2 meters (4 feet) of clean fill material. A large vent pipe marks the site and is placed off center of the crib structure. The site includes a 10-centimeter (4-inch) cement asbestos feed pipeline that runs from the demolished 117-H Air Filter Building to the crib. The pipeline is approximately 80 meters (263 feet) long.

Location: The site is located approximately 150 m (492 ft) southwest of the 105-H Building (118-H-6).

Related Sites/ Structures: The site was associated with the demolished 117-H Air Filter Building.

Waste Type: Water

Waste Description: The site received drainage from confinement system 117-H Building Seal Pits.

Closure Info: The Remaining Sites Verification Package (RSVP-2009-047) has documented that the 116-H-9, 117-H Seal Pit Crib waste site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999).

Remedial action began on October 28, 2008, and continued through February 3, 2009, to a depth of approximately 4.6 m (15 ft). Verification sampling was performed in July 2009, to collect data to determine if the site met remedial action goals. The contaminants of potential concern for verification sampling included carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, radium-226, thorium-228, thorium-232, tritium, plutonium-238, plutonium-239/240, strontium-90, uranium-238, silver, cadmium, chromium (total), hexavalent chromium, mercury, lead, selenium, and polychlorinated biphenyls (PCBs).

The lateral extent of the excavation was determined based on the September 2008 geophysical survey that clearly defined a distinct boundary. Approximately 2,430 bank cubic meters (3,180 bank cubic yards) of soil and debris was removed for disposal at the Environmental Restoration Disposal Facility (ERDF). The material was direct loaded, and no staging pile was created for this site. In addition, during remediation, no stained soil or radiological or chemical contamination was identified.

Verification sampling was performed on July 16, 2009 (DOE/RL-96-22, Rev. 5), to support a determination that residual contaminant concentrations at this site met the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The verification sample results were provided within the 95% upper confidence limit (UCL) calculation in Appendix A of the RSVP and indicated that the remedial action achieved compliance with the RAOs for the site. Also, the laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System.

The results of the verification sampling showed that residual contaminant concentrations do not

preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6-m [15-ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code:	126-H-2	Classification:	Accepted
Names:	126-H-2; 183-H Clearwells/Disposal Pit	Reclassification:	None
Type:	Dumping Area	Start Date:	1/1/1975
Status:	Inactive	End Date:	
Description:	The clearwells were used as a disposal facility for demolition waste from the 183-H Basins. A portion of the backfilled clearwells is posted with Soil Contamination signs.		
Location:	The site is located approximately 220 meters (721.8 feet) north of the 105-H Reactor Building and just south of the demolished 183-H Solar Evaporation Basins.		
Process Description:	Presently, the site is being used as a landfill for the disposal of nonhazardous and nonradioactive demolition and inert waste. Allowable rubble was/is concrete, composition roof materials, wood, metal ducts, piping, floor tile (as long as it does not contain asbestos), and other non-salvage material normally found in buildings. Unallowable materials were/are radioactive waste, hazardous waste, garbage, organic waste, explosives, chemical waste, sludge, liquid waste, dispersible waste easily windblown, asbestos (friable or non-friable), and creosoted poles or railroad ties. Part of the clearwell is posted as a soil contamination area. The rubble material remaining from the demolition of the 183-H Solar Evaporation Basins (116-H-6) was added to the clearwell (in the belief that all requirements for radiological release had been met). The concrete was scabbled to remove the outer layer of surface contamination (approximately 6 millimeters [0.25 inches]). This material was disposed of as radioactive material. The remainder of the concrete and debris was sent to the clearwell on October 23, 1995. The site consisted of two below grade, reinforced concrete basins, having a capacity of approximately 3.8E+07 liters (1E+07 gallons). Each clearwell had a reinforced concrete roof, supported by 132 concrete columns. The roof was located at grade level and still remains over the west clearwell. The clearwells were separated in the center by a pump room. The pump room was reinforced concrete and largely below grade. The above ground portion of the pump room has been demolished, and the below ground portion has been filled with pump room rubble and backfill material. The east clearwell basin contains demolition debris and other nonradioactive nonhazardous solid waste. The west clearwell remains intact. Originally, the clearwells held clean, uncontaminated water. The site was part of the 183-H Water Treatment Facility.		
Related Sites/Structures:	The clearwells were associated with the 183-H Water Treatment Facility. A number of the drawings that are referenced are related to the 183-H Water Treatment Facility and have been included to provide context information.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The suspected contaminated waste is concrete and debris from the demolition of the 183-H Solar Evaporation Basins (116-H-6). The area is posted as a soil contamination area. After removal of the surface of the concrete, prior to demolition, all surfaces were surveyed with field instrumentation. The survey results for all surfaces were less than 1,000 disintegrations per minute per 100 square centimeters (15.5 square inches) smearable (loose) contamination and less than 5,000 disintegrations per minute per 100 square centimeters (15.5 square inches) total contamination.		

On October 23, 1995, 2,666.5 cubic meters (3,487.6 cubic yards) of concrete (90%), iron

(10%), including superstructure, walls, catwalks, pillars, rebar from 100-H/183-H Solar Basins were disposed of in the 183-H Clearwell.

Waste Type: Demolition and Inert Waste

Waste Description: The unit now contains nonhazardous and nonradioactive demolition and inert waste from demolished facilities. This waste includes rubble from such facilities as 190-H, 151-H, 1701-D and the 183-H Solar Evaporation Basins. The following materials were taken to the 183-H Clearwell:

- On (date unknown), 0.78 cubic meters (27.7 cubic feet) of transite from the 1717;
- On 11/10/1986, 125.4 cubic meters (164 cubic yards) of insulators from the Hanford power line cleanup;
- On (date unknown), 0.89 cubic meters (31.5 cubic feet) of transite from the 190 Annex;
- On 9/25/1987, 44.3 cubic meters (58 cubic yards) of non-excessible building equipment from the 1713-H Storage Facility;
- On 3/3/1987, (volume unknown) of galvanized posts and concrete from the perimeter fence;
- On 11/17/1987, 45.9 cubic meters (60 cubic yards) of decommissioned utility fixtures and cross arms;
- On 1/14/1988, 72.6 cubic meters (95 cubic yards) of decommissioned utility guy wires, rebar, and gravel;
- On 1/15/1988, 22.9 cubic meters (30 cubic yards) of decommissioned utility guy wires and concrete;
- On 10/10/1988, 880 used wooden pallets (1.07 by 1.07 meters [3.5 by 3.5 feet]) from the 183-H Basin;
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #1 for 8/30/1990); (radiological release record included);
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #2 for 8/30/1990); (radiological release record included);
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #3 for 8/30/1990); (radiological release record included);
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #4 for 8/30/1990); (radiological release record included);
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #5 for 8/30/1990); (radiological release record included);
- On 8/30/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #6 for 8/30/1990); (radiological release record included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #1 for 8/31/1990); (radiological release record included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #2 for 8/31/1990); (radiological release record included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (60%), wood (30%), insulation (5%), pipe (5%) from 1701-D; (record #3 for 8/31/1990); (radiological release record included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (90%), rebar (5%), pipe/conduit (5%) from 1701-D; (record #4 for 8/31/1990); (radiological release record included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (90%), rebar (5%), pipe/conduit (5%) from 1701-D; (record #5 for 8/31/1990); (radiological release record included);

- included);
- On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (90%), rebar (5%), pipe/conduit (5%) from 1701-D; (record #6 for 8/31/1990); (radiological release record included);
 - On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (90%), rebar (5%), pipe/conduit (5%) from 1701-D; (record #7 for 8/31/1990); (radiological release record included);
 - On 8/31/1990, 11.5 cubic meters (15 cubic yards) of cement block (90%), rebar (5%), pipe/conduit (5%) from 1701-D; (record #8 for 8/31/1990); (radiological release record included);
 - On 9/7/1990, 9.6 cubic meters (12.5 cubic yards) of roofing asphalt (80%), pipe metal (5%), toilet wood (5%), windows (10%) from 2719-W;
 - On 4/26/1991, 245 pallets, 2 cable spools, 53.6 meters (176 feet) of 2 by 6 (9.23 cubic meters [326 cubic feet]) of wood from 100-H;
 - On 9/11/1993, 332.6 cubic meters (435 cubic yards) of wood (85%), metal (5%), concrete (10%) from 1722-D and 1713-D; (radiological release record included);
 - On 9/12/1993, 137.6 cubic meters (180 cubic yards) of wood (60%), metal (10%), concrete (30%) from 1722-D; (radiological release record included);
 - On 11/30/1993, 11.5 cubic meters (15 cubic yards) of material not identified on form from 100-H;
 - On 2/22/1994, 1.36 cubic meters (48 cubic feet) of metal (70%), wood (20%), cardboard (10%) from 105-D;
 - On 8/10/1994, 0.28 cubic meters (10 cubic feet) of crushed vent ducting (100%) from 105-H; (radiological release survey included);
 - On 2/16/1995, 45.9 cubic meters (60 cubic yards) of wood (40%), concrete (40%), steel (40%) from laydown yard, east of the carpenter shop, outside 100-N double fence;
 - On 2/16/1995, 45.9 cubic meters (60 cubic yards) of wood (40%), concrete (40%), steel (40%) from laydown yard, east of the carpenter shop, outside 100-N double fence; (record #2 for 2/16/1995);
 - On 4/10/1995, 30.6 cubic meters (40 cubic yards) of roofing material, including tar and gravel (asphalt), fiberboard, metal flashing and wood debris from 105-D roof replacement; (radiological release statement included);
 - On 4/11/1995, 30.6 cubic meters (40 cubic yards) of roofing material, including tar and gravel (asphalt), fiberboard, metal flashing and wood debris from 105-D roof replacement; (radiological release statement included);
 - On 10/23/1995, 2,666.5 cubic meters (3,487.6 cubic yards) of concrete (90%), iron (10%), including superstructure, walls, catwalks, pillars, rebar from 100-H/183-H Solar Basins; (See second waste record);
 - On 12/14/1995, 11.5 cubic meters (15 cubic yards) of wood (50%), plastic (40%), metal (10%) from 100-N, N Reactor Deactivation;
 - On 10/11/1995, 38.2 cubic meters (50 cubic yards) of wood (99%), soil/metal (1%) from 100-D/190-D demolition;
 - On 10/11/1995, 7.6 cubic meters (10 cubic yards) of asphalt/concrete from 100-N waterline upgrade;
 - On 10/23/1995, 0.8 cubic meters (1.0 cubic yard) of scrap electrical wire from 100-N potable waterline upgrade;
 - On 11/10/1995, 122.3 cubic meters (160 cubic yards) of metal (75%), concrete (10%), wood (10%), conduit (5%) from 100-N, Buildings 1100 and 1101;
 - On 2/20/1996, 22.9 cubic meters (30 cubic yards) of asphalt (80%), dirt (20%) from 100-N/Field Deactivation;
 - On 3/4/1996, 0.4 cubic meters (0.5 cubic yards) of plastic (100%) from 100-HR-3 Pump and Treat;
 - On 5/9/1996, 12.2 cubic meters (16 cubic yards) of iron (5%), tar-rock (95%) from 100-H;
 - On 5/11/1996, 12.2 cubic meters (16 cubic yards) of tar (40%), iron (30%), wood (20%), tin (10%) from 100-H;

- On 5/12/1996, 12.2 cubic meters (16 cubic yards) of galvanized metal (60%), wood (40%) from 100-H; (truck #1);
- On 5/12/1996, 12.2 cubic meters (16 cubic yards) of galvanized metal (40%), wood (60%) from 100-H; (truck #2);
- On 5/17/1996, 12.2 cubic meters (16 cubic yards) of tar (95%), iron (5%) from 100-H;
- On 5/18/1996, 12.2 cubic meters (16 cubic yards) of tar (100%) from 100-H; (truck #1)
- On 5/18/1996, 12.2 cubic meters (16 cubic yards) of tar (85%), steel (15%) from 100-H; (truck #2);
- On 5/18/1996, 12.2 cubic meters (16 cubic yards) of tar (100%) from 100-H; (truck #2);
- On 5/19/1996, 12.2 cubic meters (16 cubic yards) of tar-rock (95%), iron (5%) from 100-H;
- On 8/18/1996, 24.5 cubic meters (32 cubic yards) of concrete (80%), iron (20%) from 100-DR;
- On 8/19/1996, 24.5 cubic meters (32 cubic yards) of concrete (80%), iron (20%) from 100-DR;
- On 2/12/1997, 84.1 cubic meters (110 cubic yards) of asphalt (95%), rock (4%), metal (1%) from 100-H/183-H;
- On 4/11/1997, 34.4 cubic meters (45 cubic yards) of old asphalt from 200 West Area, 200-ZP-1 Phase III;
- On 7/16/1997, 15.3 cubic meters (20 cubic yards) of fiberglass insulation from the exterior of the 1715-N Diesel Tanks;
- On 7/15/1997, 22.9 cubic meters (30 cubic yards) of fiberglass insulation from demolition from 163-N roofing;
- On 7/18/1997, 11.5 cubic meters (15 cubic yards) of fiberglass insulation from the exterior of the 1715-N Diesel Tanks;
- On 7/18/1997, 1.5 cubic meters (2 cubic yards) of hatch lid, metal on wood construction from 163-N Roof;
- On 8/7/1997, 7.6 cubic meters (10 cubic yards) of broken asphalt pieces from pipeline road crossings from 100-HR-3 Project;
- On 8/26/1997, 160.6 cubic meters (210 cubic yards) of concrete (80%), rebar (20%) from 100-N/105-NC;
- On 9/25/1997, 107.0 cubic meters (140 cubic yards) of concrete, rebar, metal roofing and miscellaneous steel from 100-N/1734-N;
- On 10/11/1997, 11.5 cubic meters (15 cubic yards) of concrete (90%), wood (10%) from 2614 E2, W2, W4, W5.

Code: 132-H-1	Classification: Accepted
Names: 132-H-1; 116-H Reactor Exhaust Stack Burial Site	Reclassification: Interim Closed Out (6/26/2007)
Type: Burial Ground	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1965
Description:	The site consisted of an excavated trench that contained demolition rubble of the Reactor Exhaust stack and foundation. The stack was originally part of the 105-H Reactor Gas and Exhaust Air system.
Location:	The stack was located on the south side (southwest corner) of the 118-H-6 (105-H Reactor Building). The stack burial trench was excavated in a south-by-southwesterly direction from the base of the stack, between the 132-H-2 (117-H Filter Building) and the 132-H-3 (1608-H Lift Station Building.)
Process Description:	Before demolition the 116-H exhaust stack was part of the reactor building ventilation system, which was designed to provide clean air to the various work sites within the 105-H reactor building. The clean air entered the noncontaminated portions of the reactor building and then moved through zones with increasing levels of contamination before its discharge into the atmosphere. After the 1960 installation of the 117-H Filter Building, the air passed through

HEPA (high-efficiency particulate air) filters and halogen (activated charcoal) filters prior to its atmospheric release. Following completion of the confinement project in 1960, the air was diverted from the 118-H-6 (105-H Reactor) site via underground reinforced concrete ducts to the 132-H-2 (117-H Filter Building). After flowing through the filters, the air went through below-grade and above-grade concrete ducts and into the exhaust stack. Prior to demolition the stack was 61 meters (200 feet) tall and had a diameter of 5.1 meters (16.58 feet) at its base. The stack was toppled into a 60.96 meter (200 feet) long by 9.14 meter (30 feet) wide by 5.49 meters (18 feet) deep trench.

Related Sites/ Structures: The stack was part of the 118-H-6 (105-H Reactor Gas and Exhaust Air system) and the 132-H-2 (117-H Filter Building).

Waste Type: Demolition and Inert Waste

Waste Description: Air moving from the least contaminated zones through increasingly contaminated zones was discharged to the stack unfiltered. At the time of demolition low-level smearable alpha contamination was present measuring up to 30 disintegrations/minute per 100 square centimeters (190 disintegrations/minute per 100 square inches). Smearable beta contamination ranged from 100 to 5,000 disintegrations/minute per 100 square centimeters (650 to 32,000 disintegrations/minute per 100 square inches).

Closure Info: The Remaining Sites Verification Package (RSVP) 2006-053 has documented that current site conditions have met the remedial action goals (RAGs) and remedial action objectives (RAOs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU--2, 100-IU-6, and 200-CW-3 Operable Units.

As part of decommissioning activities in 1983, extensive radiological surveying and sampling activities were performed to characterize residual radiological contamination of the exhaust stack. Characterization results indicated that the contamination was confined to a 0.01-meter (0.4-inches) surface layer of concrete on the interior wall of the stack. The 1983 sampling results were also used to support the reclassification. Using the maximum radiological activities from the pre-demolition characterization data to represent residual contamination levels over the entire mass of concrete of the former stack, RESidual RADioactivity (RESRAD) modeling was performed in 2006 to support the previous decision to demolish and bury the stack in place.

The RESRAD modeling was performed only for the contaminated rubble which was buried in the shallow zone. An evaluation of the concrete foundation that extended greater than 4.5 meters (15 feet) was not required because the foundation was not contaminated. The condensate drain embedded in the stack foundation was located in the shallow zone. The RESRAD modeling accounted for radioactive decay from 1983 (year of sampling) to 2006 and predicted that the site achieved the dose limits and risk objectives for rural-residential land use, groundwater protection, and river protection.

A portion of the vertical 15-centimeter (6-inch) condensate drain pipe remained embedded in the center of the buried stack base. No deep zone evaluation was necessary because the embedded condensate drain did not extend into the deep zone. The pipe was a free draining condensate line that fed into the 1608-H effluent pumping station. The potential contamination remaining within the drain was considered to pose little risk to human health and the environment, such that further sampling activities were not required. Residual contamination that could remain in the floor drain pipe would be analogous to residual contamination in the buried 132-D-4 (105-D Reactor Exhaust Stack) and 132-F-4:2 (105-D Reactor Exhaust Stack) embedded stack condensate drain lines. Although the condensate drain lines were not sampled, these sites were reclassified as "interim closed out" and "no action," respectively.

The horizontal condensate drain line running from the stack base to the 1608-H effluent pumping station was removed during previous remedial actions associated with the 100-H-21 Reactor Effluent Pipelines. Based on excavation boundaries of the demolition activities required to place the 105-H Reactor into interim safe storage, the remaining portion of the horizontal condensate drain line external to the 105-H Reactor Safe Storage Enclosure has been removed. The drain line and underlying soils were not sampled; however, it was believed that contamination related to the drain line, as well as to the embedded drain remaining in the stack, was bounded by the waste profile for the 100-H-21 Reactor Effluent Pipelines.

The site residual contaminant levels which were based on reviews of the historical data and RESRAD modeling results were protective of direct exposure, groundwater, and the Columbia River. Using conservative inputs (e.g., highest activity sample results and assuming uniform contamination levels on the entire mass of residual concrete), the RESRAD outputs indicated that residual contamination levels do not present an unacceptable risk to the maximally exposed individual. The RESRAD evaluation and historical data supported a reclassification of the site to interim closed out. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Code:	132-H-3	Classification:	Accepted
Names:	132-H-3; 1608-H Effluent Pumping Station Site; 1608-H Waste Water Pumping Station Site; 116-H-8	Reclassification:	None
Type:	Pump Station	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1965
Description:	The unit was constructed of concrete block walls above ground and reinforced concrete for the remainder. It was 3.7 meters (12 feet) above grade and 9.8 meters (32 feet) below grade. The unit included a wastewater collection pit. The building has been demolished in-situ.		
Location:	The unit is located on the east side of the 105-H Reactor Building.		
Waste Type:	Process Effluent		
Waste Description:	This site received water from reactor building drains and irradiated fuel storage drains containing trace amounts of low-level radionuclides and decontamination chemicals, primarily Turco (a commercial chemical compound with a proprietary composition). Radionuclides were primarily activation and fission products. Other decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid.		

Code:	1607-H2	Classification:	Accepted
Names:	1607-H2; 1607-H2 Sanitary Sewer System; 1607-H2 Septic Tank; 1607-H2 Septic Tank and Associated Drain Field; Septic System; 124-H-2	Reclassification:	Interim Closed Out (2/5/2001)
Type:	Septic Tank	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1965
Description:	The unit includes a septic tank, tile field, and associated piping (about 140 meters (460 feet) from the tank to the intersection with the Water Treatment Plant pipelines). The site has been remediated, and a Closeout Verification Package (CVP) has been approved. It is no longer marked or posted in the field.		
Location:	The septic system was located north of the 105-H Reactor Building, north of the 182-H Reservoir and northeast of the 183-H (116-H-6) Solar Basins.		
Related Sites/	The site received sanitary waste from the 182-H, 183-H, 190-H, and other 100 H Area office		

- Structures:** and maintenance buildings.
- Waste Type:** Sanitary Sewage
- Waste Description:** This unit received unknown amounts of sanitary sewage from 182-H, 183-H, 190-H, and all office and maintenance service buildings with "1700" designations. Based on measured sludge levels, the volume was estimated to be 28,500 liters (7,500 gallons).
- Closure Info:** The site has been remediated and was closed out on February 5, 2001.

Remedial action objectives and goals for the 1607-H2 site were established by the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology), in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17). The selected remedial action for the 1607-H2 site included (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site, and (3) backfilling the site with clean soil to average adjacent grade elevation. Excavation was driven by remedial action objectives (RAOs) for direct exposure, protection of groundwater, and protection of the Columbia River.

Waste site Contaminants of Concern (COCs) and Contaminants of Potential Concern (COPCs) for the 1607-H2 site were identified during site remediation through process knowledge, analogous site information, field investigation, past orchard land-use knowledge, and excavated waste sample analyses and consist of the following: cobalt-60, strontium-90, uranium-233/234, uranium-235, uranium-238, semi-volatile organic compounds, arsenic, lead, mercury, chromium (total), polychlorinated biphenyls (PCBs), cesium-137, and hexavalent chromium.

The radionuclide COPCs cobalt-60, strontium-90, and uranium-235 were not detected in cleanup verification samples and were not addressed further in the CVP. Of the approximately 64 semi-volatile organic analytes that the analytical method (EPA SW-836 Method 8270) analyzed for, none were detected in cleanup verification samples at concentrations greater than the analytical method practical quantitation limit and were therefore not addressed further. The COPC arsenic was not detected in cleanup verification samples at concentrations above Washington State background of 20 mg/kg (Washington Administrative Code 173-340), and was therefore not addressed further. Arsenic sample results (maximum detected value of 7.0 mg/kg) are listed in Appendix A of the CVP. Several of the COPCs (lead, total chromium, and mercury) were detected in cleanup verification samples at concentrations above Hanford Site background and were therefore added to the final list of COCs for the site. Of the PCBs, only Aroclor-1254 was detected in cleanup verification samples and was therefore added to the final COC list.

At the completion of the remedial action, the total excavation was approximately 5,054 square meters (54,405 square feet) in area with a maximum depth of approximately 5.6 meters (18.4 feet) for the septic tank/piping excavation and 1.5 meters (4.9 feet) for the drainfield excavation. Approximately 12,207 metric tons (13,456 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

Results of the sampling, laboratory analyses, and data evaluations for the 1607-H2 site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met.

The CVP demonstrated that remedial action at the 1607-H2 site has achieved the Remedial

Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) established in the interim action Record of Decision (ROD) and Remedial Design Report/Remedial Action Work Plan (RDR/RAWP). The remaining soils, including overburden, have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 1607-H2 site that contain COCs at concentrations exceeding the RAGs have been excavated and disposed of at the ERDF, and that residual COC concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual COC concentrations throughout the site and overburden do not pose an unacceptable threat to groundwater or the Columbia River.

The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required.

The 1607-H2 site is verified to be remediated in accordance with the interim action ROD and may be backfilled. The overburden is verified as suitable for use as backfill in accordance with the ROD.

Code:	1607-H3	Classification:	Accepted
Names:	1607-H3; 1607-H3 Sanitary Sewer System; 1607-H3 Septic Tank; 1607-H3 Septic Tank and Associated Drain Field; 124-H-3	Reclassification:	Interim Closed Out (2/1/2011)
Type:	Septic Tank	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1968
Description:	The site was a septic tank and drain field. The tank is constructed of concrete and measures 5.6 by 2.1 by 4.0 meters (18.5 by 7 by 13 feet) deep. The tank had a 100-person capacity with an average detention period of 24 hours. The drain field was constructed of 10-centimeter (4-inch) vitrified pipe. It measured 15 by 30 meters (50 by 100 feet). It was oriented in-line with, and approximately 24 meters (80 feet) from the septic tank. A row of eight vent pipes were visible, running perpendicular to the entrance road.		
Location:	The 1607-H3 septic tank and drain field were located along H Avenue northeast of the 1701-H Badge House.		
Process Description:	The 1607-H3 septic system received sanitary sewage from the 1701-H Badge House, the 1709-H Fire Station, and the 1720-H Security Patrol Change Room. In addition to the sanitary sewage, liquids from the 1701-H Badge House darkroom (used for film badge processing) were disposed to the 1607-H3 septic system.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received unknown amounts of sanitary sewage from the 1701-H Badge House (security checkpoint), the 1720-H Security Patrol Change Room, offices, and the 1709-H Fire Station. The sewage per capita is 130 liters (35 gallons) plus 20% for sludge.		
Closure Info:	All of the facilities associated with the septic system have been removed to grade. Remedial action at the 1607-H3 waste site was performed between October 13 and November 10, 2009, and encompassed the removal of the below-grade septic tank and the drainage field pipelines. The site was excavated to depths ranging from approximately 1.6 meters (5.3 feet) at the drain field to 4 meters (13 feet) at the septic tank location, resulting in approximately 3,763 bank cubic meters (BCM) (4,922 bank cubic yards [BCY]) of soil and piping/debris being removed for disposal at the Environmental Restoration Disposal Facility (ERDF). In addition, approximately 235 meters (771 feet) of vitrified clay pipe were removed. The soil was sorted within the excavation and direct loaded for disposal at ERDF. Approximately 1,729 BCM		

(2,261 BCY) of overburden soil was removed from above the drain field piping and stockpiled for evaluation for use as clean backfill.

The debris removed from the 1607-H3 waste site was consistent with that of a sewage system and in agreement with the pre-excavation geophysical survey findings. Some six and eight inch diameter piping was excavated that had soldered joints. These pipe segments were segregated for macro-encapsulation as a lead contaminate prior to disposal at ERDF. Small portions of lateral pipelines associated with the 100-H-51:4, 100-H Main Gate Storm Drain waste site were removed during the 1607-H3 waste site remediation.

Code:	1607-H4	Classification:	Accepted
Names:	1607-H4; 1607-H4 Sanitary Sewer System; 1607-H4 Septic Tank; 1607-H4 Septic Tank and Associated Drain Field; 124-H-4	Reclassification:	Interim Closed Out (2/26/2001)
Type:	Septic Tank	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1965
Description:	This site has been remediated and closed out. The unit included a septic tank, tile field, and associated piping. The system had a six-person capacity and an average detention period of 24 hours. The tile field was constructed of 10-centimeter (4-inch) pipe, 2.4 meters (8 feet) in length.		
Location:	The site was located on a bluff above the Columbia River, southeast of the 181-H Building and south of the 181-H access road.		
Related Sites/ Structures:	The septic system was associated with the 181-H River Pumphouse.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received an unknown amount of sanitary sewage from the 181-H River Pumphouse. The sewage per capita is 130 liters (35 gallons) plus 20% for sludge.		
Closure Info:	The cleanup verification package (CVP-2000-00025) for 1607-H4 has documented that the remedial action goals and objectives have been met as established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.		

Remedial excavation at the 1607-H4 site began on November 5, 1999 and completed July 24, 2000. The elevation of the bottom of the excavation was at 120.4 meters (394.9 feet) upon completion. The excavation was approximately 161 square meters (1,732 square feet) in area with a maximum depth of approximately 3.6 meters (11.8 feet). Approximately 2,078 metric tons (2,286 tons) of material from the site were disposed at the ERDF.

The contaminants of potential concern (COPCs) included: cobalt-60, strontium-90, uranium-233/234, uranium-235, uranium-238, cesium-137, arsenic, lead, mercury, chromium (total), hexavalent chromium, polychlorinated biphenyls (PCBs), fluoranthene, pyrene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, both the CVP/reclassification forms and WIDS had indicated that IC restrictions were needed. However, these sites were remediated only with the more restrictive shallow zone criteria; deep zone criteria were not used. Therefore, no institutional

controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 m [15 feet]) are required.

Names: 100-H-37; 100-H Mud Dauber Contamination Area	Reclassification: Interim Closed Out (8/5/2010)
Type: Contamination Migration	Start Date: 1/1/2002
Status: Inactive	End Date: 1/1/2003
Description:	The site consist of a set of radiologically dispersed contamination areas caused by mud dauber wasp nesting activity. During cleanup of the 105-H Fuel Storage Basin (FSB) while removing and processing dirt and sediment from the lower 38 cm (15 in) of the FSB, elevated airborne radioactivity levels that exceeded posting criteria were created. One of the corrective actions was to maintain at least 5.1 cm (2 in) of water on the basin floor. The mud daubers utilized the large source of mud on the 105-H Fuel Storage Basin (FSB) for construction of their tube nests. The mud daubers transported the contaminated mud from the FSB into the areas surrounding the reactor. The site contained 43 areas where contaminated nests were located. The majority of the areas contained more than one nest, some were greater than ten nests.
Location:	The nests are estimated to cover approximately 10.1 hectares (25 acres) throughout 100-H Area.
Release Description:	On December 11, 2002, while removing and processing dirt and sediment from the floor of the 105-H Fuel Storage Basin (FSB), elevated airborne radioactivity levels were generated and later observed on the air sample filter removed for the air sampler located on excavation equipment. A preliminary analysis of the filter indicated radioactivity greater than the threshold for posting an Airborne Radioactivity Area (ARA). The FSB was posted as a Radiation Area/Contaminated Area (RA/CA) at the time of the work. It was posted ARA and no one else entered the area. Work in the 105-H FSB was to proceed using a manned track-hoe excavator to remove basin fill from the lower 38 cm (15 in) between the basin floor stem walls. A contamination survey of the excavator bucket showed removable contamination levels that were higher than expected for both alpha and beta-gamma contamination. Based on the elevated bucket contamination levels, the entire FSB was re-posted as a High Contamination Area (HCA). Analysis at the Radiological Counting Facility (RCF) indicated the presence of americium and plutonium. Based on the analysis, the FSB was posted and controlled as an Airborne Radioactivity Area (ARA). The probable source of the airborne radioactivity was the contamination entrained in the cement dust released from the basin floor and stem walls during the excavation process. The 105-H FSB was approximately 6.1 m (20 ft) deep. The fill consisted of approximately 5.2 m (17 ft) of clean fill over a 76.2 cm (30 in) layer of sludge, debris and potential fuel fragments.
Related Sites/ Structures:	Some contaminated nests were deferred to 100-H-41 and 100-H-58. Other mud dauber sites in 100-H Area were remediated with these sites, 126-H-2, 116-H-5, 118-H-6:4, 118-H-3, 118-H-5, and 118-H-1.
Waste Type:	Soil
Waste Description:	The waste is contaminated mud dauber nests and other materials depending on the where the nest(s) were placed, including electrical utility poles, manholes, and other structures. The mud dauber contamination limits: removable - beta-gamma 1000 dpm/100cm ² ; alpha 20 dpm/100cm ² . Total - beta-gamma 5000 dpm/100cm ² ; alpha 100 dpm/100cm ² .
	The contaminants of potential concern include beta-gamma emitting isotopes C-14, Ni-63, H-3, Co-60, Sr-90, Cs-137, Eu-152, Eu-154. The alpha emitting isotopes would be Pu-239/240, and Am-241. RCF samples 11261, 11262, 11263, 11259, 11260 were used to determine the radioactive isotopes for the site.
Closure Info:	The site was included in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, for remediation, treatment, and disposal. The excavation took place between July 14 and August 21, 2008. Two additional mud dauber areas were excavated in December 2009. This second event only took one day to complete. A total of 19,153 BCM were removed and disposed at ERDF

The analyte list included gross alpha/beta, GEA, tritium, hex chromium, ICP metals and mercury for the mud dauber sites. Additional COPC's may be evaluated during preparation of the final RSVP/CVP. The contaminated areas were remediated by removing radiologically contaminated materials to ensure remedial action goals (RAGs) were achieved.

On July 7, 2009, Ecology concurred that the data collected for this study indicated that radiological field instruments are reliable to ensure RAGs are achieved. Remedial action began with the excavation of individual nests with a backhoe, due to the difficulty in hand digging and the sloughing of excavation material. Areas containing numerous and individual nests were removed. The number of nests in an area and the vegetative cover were considered in decisions to excavate individual nests or scrape an entire area. In addition to 40 small, dispersed excavations, 3 large areas of the waste site were excavated. These large scrapes ensured remediation of locations with many nests and protection of field radiological instrumentation that could be damaged by taking readings in areas with dense rabbit brush and other vegetation. After excavation, Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed on these 3 large areas and handheld radiological surveys verified that the 40 smaller excavations were no longer contaminated. Several of the areas which appeared on the original overall site location map were remediated with other waste sites at the 100-H Area, including 126-H-2, 116-H-5, 118-H-6:4, 118-H-3, 118-H-5, and 118-H-1.

Several of the mud dauber areas were located on active power lines that serve facilities in the 100-H Area. The power poles are located along H Avenue, Herron Avenue, and from the west of the 105-H Reactor Building to the warehouse. These locations have been deferred to the 100-H-58 waste site.

Additionally, during confirmatory sampling activities at waste site 100-H-41, it was found that the radiological contamination was the result of contaminated mud dauber nests located on the pipe of concern. The pipe and mud dauber contamination were removed to the Environmental Restoration Disposal Facility as part of 100-H-37 remediation activities. Additional information and sample results for 100-H-41 can be found in the RSVP for 100-H-41.

Code: 100-H-38	Classification: Accepted
Names: 100-H-38; Trenches and Pit Southwest of 105-H	Reclassification: None
Type: Burial Ground	Start Date:
Status: Inactive	End Date:
Description: The site consists of an area approximately 3 acres in size and is marked by ground scars resembling trenches and pits. The site is situated along a natural depression on the western boundary of the H Area perimeter fence.	

Code: 100-H-40	Classification: Accepted
Names: 100-H-40; Disposal Pit	Reclassification: No Action (5/20/2010)
Type: Trench	Start Date:
Status: Inactive	End Date:
Description: The site consists of a pit used for the disposal of maintenance shop waste.	
Location: The location was described by a former employee as being "west of central access road" (DC-0227). The interviewee sketched the approximate location on a map. The sketch showed the location south-southeast of the 118-H-1 burial ground and northwest of building 1709-H. The boundary of the waste site presented in photo 1 is intended to incorporate this area while allowing for the inherent inaccuracy of the sketch.	

Process Description: The 100-H area was constructed between March 1948 and October 1949. The disposal of solid wastes during construction was documented in the Design and Construction History, Project C-165-A, Pile Area "H" (HW24800-2). The report indicated that a burning pit (128-H-1) was "established at the northwest corner of the area for disposing of the trash and rubbish plus the usual odds and ends of waste construction material". The construction of 100-H area also included the creation of a solid waste burial ground (118-H-1). The burial ground was used for the disposal of solid dry wastes (HW-27337). Other burial grounds were created during the facility operations for the purpose of disposing reactor hardware. Documentation of solid waste disposal during the reactor operations (1949 through 1965) was limited to the facility's radioactive wastes. The disposition of nonradioactive solid waste is not otherwise documented but presumed to have disposed of at the 118-H-1 and 128-H-1 waste sites, with one notable exception.

Related Sites/ Structures: The site was associated with 1700-H buildings, including 1709-H, 1716-H, 1717-H and 1720-H (DC-0227).

Waste Type: Soil

Waste Description: Contaminants of potential concern may include lead, ICP metals, TPH, PAH, PCBs.

This site may contain maintenance shop waste, e.g. paint cans and auto repair waste (Denton, L interview 1990).

Closure Info: The Remaining Sites Verification Package, (RSVP-2009-065), demonstrates that the 100-H-40, 100-H Disposal Pit waste site meets the objectives for No Action as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (EPA 1999).

The COPCs for the site were identified based on the assumption that the site contained maintenance shop waste, including paint cans and auto repair waste. They included the expanded list of inductively coupled plasma metals, mercury, polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCBs), and total petroleum hydrocarbons. Radiological surveys were performed during sampling activities by a radiological control technician using instruments capable of detecting alpha, beta, and gamma radiation to identify potential radiologically contaminated materials, and no radiation was detected above background levels; therefore, radionuclides were not added to the list of COPCs.

Confirmatory sampling activities at the site were performed from October 27 to 29, 2009, in accordance with the Work Instruction for Confirmatory Sampling of the 100-H-40, 100-H Disposal Pit (WCH 0100H-WI-G0028). The eight locations with indications of geophysical anomalies were excavated to investigate for potential buried maintenance shop debris. Excavations unearthed small pieces of metallic surface debris and transite siding, then native soil, or small volumes of debris at shallow depths, with the exception of test pit 7. At test pit 7, materials observed within the excavation were consistent with the burial of a demolished building.

The complete laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to submitting to the Hanford Environmental Information System (HEIS) for archiving and were provided in Appendix B of the RSVP.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the

Columbia River. Site contamination did not extend into the deep zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	100-H-58	Classification:	Accepted
Names:	100-H-58; Mud Dauber Nests On Active Powerlines In 100H Area	Reclassification:	None
Type:	Contamination Migration	Start Date:	
Status:	Active	End Date:	
Description:	The site consists of contaminated mud dauber (wasps) nests in the 100-H Area.		
Location:	The nests were identified along H Avenue, Herron Avenue, and from the west of the 105-H Reactor Building to the warehouse.		
Process Description:	During cleanup of the 105-H Fuel Storage Basin (FSB), dirt and sediment were removed from the lower 38 cm (15 in.) of the basin, which was 6.1 m (20 ft) below ground surface. Some dust became airborne during the scraping of the basin floor and stem walls, and airborne radiological posting criteria were exceeded. Consequently, one of the corrective actions was to maintain at least 5.1 cm (2 in.) of water on the basin floor to reduce airborne dirt and sediment, which created mud. The mud dauber wasps transported mud from the FSB floor to other sediment and debris areas surrounding the 105-H Reactor Building using the mud for construction of their tube nests. These mud dauber areas became the 100-H-37 waste site. However, during remediation of 100-H-37, multiple mud dauber nests were discovered on power lines that could not be remediated because the lines were in use. These lines are along H Avenue, Herron Avenue, and from the west of the 105-H Reactor Building to the warehouse. The nests are primarily within crevices in the wooden poles, and 35 nests have been counted. It is possible that more nests could be present, as characterization did not occur at heights above 7 ft. A mud dauber characterization strategy was developed and approved by the U.S. Department of Energy and Washington State Department of Ecology (Ecology) to guide remediation activities and provide closure documentation for the 100-H-37 waste site. The strategy included an initial characterization approach to verify the accuracy of radiological field instruments to be used in the place of soil sampling for verification and closeout purposes. On July 7, 2009, Ecology concurred that the data collected for this study indicated that radiological field instruments are reliable to ensure RAGs are achieved for the mud dauber waste site.		
Related Sites/ Structures:	Other mud dauber contamination sites were 100-H-37 and 100-H-41.		

Code:	118-H-1	Classification:	Accepted
Names:	118-H-1; 100-H Burial Ground No. 1; 100-H-1	Reclassification:	Interim Closed Out (10/12/2011)
Type:	Burial Ground	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1965
Description:	The waste site was a mixed solid waste burial ground. The overall site runs east and west. There are numerous trenches of various dimensions, generally running north and south. The boundaries are permanently marked with concrete posts numbered H-65-1 through H-65-23. The site has been divided into two subsites; 118-H-1:1 100-H-Burial Ground Trenches and Sorting Cells and 118-H-1:2 Anomaly Staging Area and Fuel Bunker.		
Location:	The site is located about 396 m (1,300 ft) southwest of the 105-H Building.		
Release	On October 4, 1960, a controlled fire was set at the north end of the burial site to reduce the		

Description: volume of contaminated material. Control over the fire was lost when two large explosions and several small explosions occurred from underlying drums containing residual combustible materials.

Process Description: This is the primary solid waste burial ground for the 100-H Area. The wastes disposed of in it include process tubing, contaminated lead bricks, dummy fuel elements, and miscellaneous hardware.

Waste Type: Misc. Trash and Debris

Waste Description: The site received activated components and miscellaneous solid wastes (surface contaminated).

Typical examples of activated components are aluminum dummies and process tubing, steel gun barrels and step plugs, thermocouple wires and balls from the 3X safety system. Portions of several horizontal control rods were buried in slit trenches near the southwest corner of the site. Typical examples of surface contaminated materials are hand tools, rags and sweeping compound, light bulbs, sheets of plastic and paper. This type of material was usually sealed in cardboard boxes and placed in separate trenches from the activated components.

This Site has the Following SubSites:

Code: 118-H-1:1

Names: 118-H-1:1; 100-H-1 Burial Ground trenches

Code: 118-H-1:2

Names: 118-H-1:2; Anomaly Staging Areas and Fuel Storage Bunker

Code: 118-H-1:1

Classification: Accepted

Names: 118-H-1:1; 100-H-1 Burial Ground trenches

Reclassification: Interim Closed Out (7/29/2011)

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The 118-H-1:1 subsite consists of the original burial ground (trenches A-F) and sorting cells (1-3). In general, all trenches and sorting cells are angled from north to south.

The trenches (A-F) were the primary solid waste burial ground for the 100-H Area. Mixed solid waste such as lead bricks, process tubing, oil drums, and miscellaneous reactor hardware were disposed in the trenches between 1949 and 1965. The trenches were backfilled to grade with 6 feet of soil cover. The sorting cells were created during remediation of the burial ground in 2008 and were used to determine the presence of suspect spent nuclear fuel and anomalies.

The burial ground trenches received activated components and miscellaneous solid wastes (surface contaminated). Typical examples of activated components are aluminum dummies and process tubing, steel gun barrels and step plugs, thermocouple wires and balls from the 3X safety system. Portions of several horizontal control rods were buried in slit trenches near the southwest corner of the site. Typical examples of surface contaminated materials are hand tools, rags and sweeping compound, light bulbs, sheets of plastic and paper. This type of material was usually sealed in cardboard boxes and placed in separate trenches from the activated components.

Location: The site is located about 396 m (1,300 ft) southwest of the 105-H Building.

Closure Info: Remedial action began on July 22, 2008, and continued through June 29, 2009. Six trenches (A, B, C, D, E, and F) were excavated with approximately 8,160 bank cubic meters (BCM) (10,673 bank cubic yards [BCY]) of overburden soil stockpiled for use as clean fill. Approximately 34,496 BCM (45,119 BCY) of soil and debris were removed for disposal at ERDF. No spent

nuclear fuel or thimbles were discovered at the site. Field observations during excavation indicated the presence of concrete, piping, lead bricks, perforated tubes, and control rods among the types of debris removed from the burial ground excavation. There were not any patterns of waste found from one trench to another; there was a random assortment of waste throughout the burial ground. Burial Ground anomalies included a breached pipe with a white solid inside, a forklift battery, suspect hydraulic oil, a damaged drum containing liquid, gray waxy material, oil stained soil, and a deteriorated drum.

The SubSite is Part Of:

Code: 118-H-1

Names: 118-H-1; 100-H Burial Ground No. 1; 100-H-1

Code: 118-H-1:2

Classification: Accepted

Names: 118-H-1:2; Anomaly Staging Areas and Fuel Storage Bunker

Reclassification: Interim Closed Out (10/12/2011)

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The 118-H-1:2 subsite consisted of the two anomaly staging areas and a fuel bunker. The areas were delineated using yellow and magenta rope with radiological postings.

All anomalous items found in the 118-H-1:1 Burial Ground were staged in the 118-H-1:2 anomaly staging area. The anomalies stored there included concrete, piping, lead bricks, process tubing, oil drums, and miscellaneous reactor hardware. The fuel bunker was constructed to store pieces of reactor fuel prior to characterization and dismantling. The staging area has been remediated.

118-H-1:1 anomalies include a breached pipe with a white solid inside, a forklift battery, suspect hydraulic oil, a damaged drum containing liquid, grey waxy material, oil stained soil, and a deteriorated drum. No spent nuclear fuel was discovered at the 118-H-1:1 Burial Ground.

Location: The fuel bunker was located approximately 400 m southwest of the 105-H Building and north of the 118-H-1:1 Trench E. The two anomaly staging areas were just west of 118-H-1:1 (one was north of Trench F and one was south).

Closure Info: On February 18, 2011, the SSNF was transferred from the 118-H-1:2 bunker area to the 100-D, 118-D-3:2 south bunker area. The fuel was shipped from 100-D Area to the 100-K Basins on April 27 and May 3, 2011.

Following the removal of the fuel and the concrete bunkers, and the characterization and processing of staged anomalies, a 0.3-m (1-ft) scrape of the staging area, characterization area, and SSNF bunker area was conducted. The soil was scraped from these areas to ensure that any potential contamination that may exist as a result of the anomaly characterization and processing has been removed. Approximately 272 bank cubic meters (BCM) (356 bank cubic yards [BCY]) of soil was direct loaded for disposal at the ERDF. An additional 80 BCM (105 BCY) was removed on June 8, 2011 to remove residual contamination identified after verification sampling was conducted.

The SubSite is Part Of:

Code: 118-H-1

Names: 118-H-1; 100-H Burial Ground No. 1; 100-H-1

Code: 118-H-2

Classification: Accepted

Names:	118-H-2; H-1 Loop Burial Ground; P-13 Test Loop; 100-H Burial Ground No. 2	Reclassification:	Interim Closed Out (11/15/2010)
Type:	Burial Ground	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1965
Description:	The site runs east and west and contains two in-line concrete vaults. Both vaults were covered to grade with approximately 3.7 meters (12 feet) of soil. The site boundaries are permanently marked with concrete posts numbered H-65-24 through H-65-29.		
Location:	The site is located approximately 457 meters (1,500 feet) west of the 105-H Reactor Building.		
Waste Type:	Equipment		
Waste Description:	The east vault received one stainless steel double tube removed from the reactor in 1955 after several years of irradiation. Within the same area there are also solutions which were used to clean the tube, and miscellaneous capsule components. The west vault was constructed in 1958 and used during deactivation of the 105-H Reactor Building for disposal of a small amount of contaminated pipe.		
Closure Info:	The cleanup verification package (CVP-2010-00002) documents that the 118-H-2 site has met the remedial action objectives (RAOs) and the remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, rev. 6) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (100 Area Burial Grounds ROD) (EPA, 2000).		

Remedial action began on April 20, 2009, and continued through June 3, 2009, with the removal of 4,366 bank cubic meters (BCM) (5,711 bank cubic yards [BCY]) of soil and debris. An initial Global Positioning Environmental Radiological Survey (GPERS) identified elevated residual radioactivity in the eastern end of the excavated area within the waste site. Additional soil was excavated from that area on June 16, 2009, and a second radiological survey was conducted to verify that the contamination was removed.

Waste encountered during excavation consisted of concrete rubble produced from demolition of the two concrete vaults and some metal piping of varying sizes. One pipe had a 20 R/hr radiological contact dose rate, which distinguished it from the other metal debris. All metal and piping was size-reduced as necessary and disposed at ERDF along with contaminated soil. No spent nuclear fuel or other anomalous material (e.g., containers or stained soils) or indications of previous spills or releases were discovered at the waste site.

The COCs/COPCs were based on site history, process knowledge, available characterization data, and visual observations during excavation. The initial list of COC/COPCs was identified in 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (100 Area Burial Grounds SAP) (DOE-RL 2001a) and included cobalt-60 and nickel-63. Carbon-14, plutonium-239/240, strontium-90, tritium, uranium-234, uranium-235, and uranium-238 were also included as COPCs based on the type of waste encountered at the site. Although not COPCs, inductively coupled plasma (ICP) metals analytical list was requested. Hexavalent chromium analysis was performed due to a site-wide effort to identify sources of hexavalent chromium contamination in the groundwater.

Verification sampling was performed January 26 and 27, 2010, to collect data to determine if the RAGs/RAOs had been met. The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and were presented as part of the 95% UCL calculation in Appendix B of the CVP.

The results of verification sampling show that residual contaminant concentrations did not

preclude any future uses (as bounded by the rural-residential scenario) and allows for unrestricted use of shallow zone soil (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code: 118-H-3	Classification: Accepted
Names: 118-H-3; Construction Burial Ground	Reclassification: Interim Closed Out (6/27/2011)
Type: Burial Ground	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1957

Description: The site's shape is an uneven polygon with sides measuring approximately 30 by 114 by 95 by 122 meters (100 by 375 by 313 by 400 feet). It runs in a northeast to southwest direction and is permanently marked with concrete posts numbered H-81-1 through H-81-13. The trenches have been covered to grade with 1.8 meters (6 feet) of soil.

Location: The site is located southeast of the 105-H Building.

Process Description: The burial ground received components and hardware from reactor modification programs.

The site operated from 1953 to 1957 to receive approximately 3,000 cubic meters (3,924 cubic yards) of reactor components and hardware, including contaminated 41-cm (16-inch) diameter pipes that were used as chutes for the removal of reactor vertical safety rod thimbles and other components from reactor modification programs. Originally, two northern trenches were used mostly for the disposal of the chute pipes. A third trench, south of the original two trenches, was developed later as a disposal site for large reactor components and hardware.

Waste Type: Equipment

Waste Description: The site contains sections of contaminated 41-centimeter (16-inch) diameter pipe used as chutes for removal of thimbles from the 105-H Building during outages, reactor hardware, and components from reactor modification programs.

The COCs identified through process knowledge are listed in the 100 Area Remedial Action Sampling and Analysis Plan and are: cobalt-60, cesium-137, europium-152, europium-154, strontium-90, uranium-233/234, and uranium-238.

Closure Info: Remedial action at the 118-H-3, Construction Burial Ground waste site began on March 4, 2009. The excavation of the waste site continued through April 22, 2009, to a depth of approximately 4.6 to 5.5 m (15 to 18 ft), resulting in a total 6,384 bank cubic meters (BCM) (8,350 bank cubic yards [BCY]) of debris and soil removed for disposal at the ERDF. All material removed from within the trenches was taken to sorting cells for surveying and unloading. Large metal and reactor hardware components excavated from trench A were stockpiled in a waste staging area on the east side of the trench. These metal sections were staged for size reduction prior to shipment for disposal. After size reduction was completed on May 18, 2009; the metal debris and an additional 0.3-m (1-ft) layer of underlying soil (approximately 60 BCM [75 BCY]) within the waste staging area footprint was removed.

The debris from the 118-H-3, Construction Burial Ground consisted mostly of metal components and very large pieces of reactor hardware (pipes, elbows, etc.). Trench C also contained aluminum tubing. No areas of stained soil or anomalous soil material were identified during the excavation. The waste removed from the trenches was consistent with the types of material expected to be present in this burial ground site.

On March 17, 2009, a suspected flammable gas cylinder, believed to be propane, was discovered. This cylinder, approximately 1.2 m (4 ft) tall and 51 cm (20 in.) in diameter, was

located in the southeastern part of trench A (Washington State Plane coordinates N 152204.8, E 577837.2) and had no observable leakage nor was the surrounding soil discolored. This cylinder appeared rusted with blue/gray oxidation on the outlet female valve and the circular valve handle. On May 19, 2009, the cylinder was inspected and found to be empty. Following inspection, the cylinder was reduced in size and shipped to ERDF. No other anomalous material was discovered during the excavation.

Code:	118-H-4	Classification:	Accepted
Names:	118-H-4; Ball 3X Burial Ground	Reclassification:	Interim Closed Out (12/29/2010)
Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1953
Description:	The site consists of one trench running north-south. Concrete markers mark the north and south ends. The trench was covered to grade with approximately 1.5 meters (5 feet) of soil.		
Location:	The site is located directly west of the 105-H Building, within the 105-H exclusion area fence.		
Process Description:	This site received solid waste from the Ball 3X Project in 1953. The 118-H-4 Burial Ground was a solid waste site that operated in 1953 to receive thimbles, guides, and radioactive materials removed from the 105-H Reactor during installation of the 105-H Ball 3X System. The Ball 3X project replaced the original liquid boron system for emergency reactor shutdown with a system using solid, nickel-plated, boron-steel, and carbon-steel balls.		
Waste Type:	Equipment		
Waste Description:	The site contains thimbles, guides, and radioactive materials removed from the 100-H Reactor in 1953.		
Closure Info:	The Cleanup Verification Package (CVP-2010-00003) documents that the 118-H-4, Ball 3X Burial Ground waste site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, (Burial Grounds ROD) (EPA 2000). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils.		

Remedial action began on November 4, 2008, and continued through April 14, 2009 to an approximate depth of 4.5 m (14.8 ft), resulting in approximately 1,600 bank cubic meters (BCM) (2,100 bank cubic yards [BCY]) of soil and debris that were removed for disposal at ERDF.

Additional material was removed on May 4, 2010, because verification sample results indicated residual contamination exceeding direct exposure RAGs was present at two statistical sample locations. A total of approximately 48 BCM (63 BCY) were removed from the SZ-9 and SZ-10 sample locations and disposed at ERDF. Figure 3 shows the approximate locations where the additional soil was removed. Following the additional remediation, replacement samples were collected.

The contaminants of concern (COCs) for the site specified in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (Burial Grounds SAP) (DOE/RL-2001-35), were identified as cobalt-60 and nickel-63. Europium-152, europium-154, carbon-14, tritium, plutonium-238, plutonium-239/240, boron, cadmium, and lead are considered contaminants of potential concern (COPCs) based on process knowledge associated with the disposal of Ball 3X project wastes to the site. Gross alpha and gross beta analyses were performed to evaluate if

other radionuclides associated with miscellaneous reactor waste were present at detectable levels. Gross beta was detected at greater than 23 pCi/g; therefore strontium-90 was requested.

Although not considered COPCs, antimony, arsenic, barium, beryllium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were evaluated by performing the expanded inductively coupled plasma (ICP) metals list. Mercury was not considered a COPC; however was analyzed for and subsequently included in the analytical results package. Hexavalent chromium was included as a COPC in support of the site-wide evaluation of chromium contamination in the 100-H Area groundwater.

For verification sampling the site was divided into two decision units: the burial ground excavation and the waste staging area footprints. Two methods for selecting the sampling locations were utilized: statistical sampling design and focused sampling. The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and are presented as part of the 95% UCL calculation in Appendix B of the CVP.

Contamination did not extend into the deep zone above direct exposure limits; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	118-H-5	Classification:	Accepted
Names:	118-H-5; 105-H Thimble Pit	Reclassification:	Interim Closed Out (1/5/2010)
Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1960
Description:	The 118-H-5, 105-H Thimble Pit, was a mixed solid waste burial ground that operated in 1953 to receive a single experimental thimble assembly and was reopened in 1960 to receive contaminated soil from the original 105-H Pluto Crib Site (116-H-4 waste site). The 105-H Pluto Crib received contaminated cooling water from reactor process tubes containing ruptured fuel elements.		
Location:	The site is located south of the 105-H Building, within the 105-H exclusion area fence.		
Process Description:	This site received a single experimental thimble assembly in 1953 and contaminated soil from the 105-H pluto crib in 1960.		
Waste Type:	Equipment		
Waste Description:	The site contains a thimble assembly from the B Experimental Hole, 105-H X-level, buried in 1953. In 1960, the 105 Pluto Crib (116-H-4) was excavated due to the construction of the 105-H Confinement System and placed in this site.		
Closure Info:	The Cleanup Verification Package, CVP-2009-00009, documents that the 118-H-5 waste site has met the remedial action objectives (RAOs) and remedial action goals (RAGs) for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds),(Burial Grounds ROD).		

Remedial action at the 118-H-5, 105-H Thimble Pit waste site began on September 11, 2008, to excavate and expose the single thimble and any other waste buried at the site. Remedial action at the site involved removing contaminated soil and a single thimble for disposal to ERDF. The excavated material was maintained within the waste site footprint; therefore, no staging piles were generated outside of the remediation footprint. After the thimble was located, all material

was returned to the excavation until load out began on November 10, 2008. The excavation of the waste site continued through November 12, 2008, to a depth of approximately 3.5 m (11.5 ft), resulting in approximately 400 bank cubic meters (BCM) (523 bank cubic yards [BCY]) of contaminated soil and debris removed for disposal to the ERDF.

The COCs for the 118-H-5, 105-H Thimble Pit, specified in the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (Burial Grounds SAP), were identified as cobalt-60, nickel-63, strontium-90, cesium-137, europium-152, europium-154, uranium-238, plutonium-238, plutonium-239/240, chromium (total), lead, and mercury. The Burial Grounds SAP also includes carbon-14 as a COPC for metallic waste such as thimbles; therefore, carbon-14 was added. In addition to the SAP COCs, americium-241, uranium-233/234, and hexavalent chromium were added, as they were included as COCs for pluto crib waste sites. Although not considered COCs/COPCs, antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, magnesium, molybdenum, nickel, silver, selenium, vanadium, and zinc were evaluated by performing analyses for the constituents of the expanded inductively coupled plasma metals lists.

The laboratory-reported data results from the verification sampling were used in the statistical calculations. The primary statistical calculation to evaluate compliance with cleanup standards is the 95% UCL on the arithmetic mean of the data. The 95% UCL values for each COC/COPC are computed for the 118-H-5 excavation decision unit as specified by the 100 Area RDR/RAWP. The laboratory-reported data results for all constituents are stored in the WCH Environmental Restoration (ENRE) project-specific database prior to archival in the Hanford Environmental Information System (HEIS) and are presented as part of the 95% UCL calculation in Appendix B of the CVP.

The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soil (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The site does not have a deep zone or other conditions that would warrant institutional controls.

Code:	128-H-1	Classification:	Accepted
Names:	128-H-1; 100-H Burning Pit; 100-H Burning Pit No. 1	Reclassification:	None
Type:	Burn Pit	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1965
Description:	The site is in a large depression or pit that appears to have been a borrow area. The western half of the site is posted with signs reading "Warning, Do Not Deposit Salvable (sic) Material." A berm runs north-south near the east end of the site. In the area surrounded by the signs, there is some scattered surface debris including: wood, glass, metal, wire, cable, and clay pipe. There are also fragments of charred material throughout this area. In the space between the area delineated by signs and the berm, visible surface debris includes scattered concrete and metal. Fragments of charred material are also found throughout this area. The majority of the surface debris is found between the berm and the eastern edge of the site. In this area, the debris includes: wood, metal, chunks of concrete, what appear to be solvent and spray paint cans, transite and large pieces of metal on wooden pallets. There are also fragments of charred material in this part of the site as well as soil gas tubes. At the eastern end of the site, debris is found on the hillside south of the depression. Also on the hillside is what appears to be an earthen ramp and a pit filled with tumbleweeds. Debris is visible through the tumbleweeds and includes cans, concrete and pails or small drums.		

The Contaminates of Potential Concern (COPCs), identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP), include: polychlorinated biphenyls (PCBs), pesticides, semivolatile organic compounds, volatile organic compounds, total petroleum hydrocarbons, asbestos, silver, cadmium, barium, chromium (total), hexavalent chromium, mercury, lead, and selenium. Although not COPCs, antimony, arsenic, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, vanadium, and zinc were evaluated by performing the expanded inductively coupled plasma metals analytical list. Ecological risk screening levels were exceeded for arsenic, boron, cobalt, lead, manganese, vanadium, zinc, and TPH at the waste site.

Confirmatory sampling was conducted on October 27, 2008. Five test pits were excavated to evaluate the subsurface soil for evidence of burning activities. Lead was detected at a concentration (94.1 mg/kg) above both the groundwater (10.2 mg/kg) and river protection (10.1 mg/kg) lookup values.

The use of pesticides on the orchard was a likely explanation for the elevated lead concentrations found. An evaluation of the distribution coefficient (Kd) for lead (30 mL/g), using RESidual RADioactivity (RESRAD) modeling (BHI 2005), predicts that lead will not migrate to groundwater or the river within the next 1,000 years. Therefore, it is concluded the contaminant concentrations at the 128-H-3 waste site meet the RAOs established in the RDR/RAWP. Beyond a few pieces of surface trash consisting of a piece of heavy wire and the lid from a metal can, no debris was found, and no evidence of use as a burning ground was found at either site.

No physical evidence of burning or debris consistent with burning grounds was found at the waste site. An evaluation of historical photographs, field observations of surface area features, geophysical data, historical research, and the confirmatory sampling data concluded that the site was a borrow area and not a burning ground.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code: 128-H-3	Classification: Accepted
Names: 128-H-3; 100-H Burning Ground #3	Reclassification: No Action (1/25/2010)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description: This site is a pit that resembles a trench. There is little evidence of burning with the exception that some of the rocks are charred and show signs of exposure to fire. The pit was almost completely filled with tumbleweeds.	
Location: The site is located west of 118-H-1 and north of 128-H-2. The pit is located on a rise above a cobble field.	
Waste Type: Ash	
Waste Description:	
Closure Info: 128-H-2 and 128-H-3 were addressed as a group. The information below documents information for the group of sites.	

In accordance with the Remaining Sites Verification Package, RSVP-2009-008 and 2009-009, the confirmatory sampling results support a reclassification of the 128-H-2 and 128-H-3 sites to No Action. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Historical photographs show that this site was in the southeast corner of what appears to be an orchard. A cultural resource inspection, performed in 2007, concluded that the trench associated with the 128-H-3 waste site was part of a pre-Hanford Site farm irrigation system and not a burn pit as identified in WIDS. As such, confirmatory sampling performed within the original WIDS boundaries surrounding the cobble field and not within the trench per agreement with the Washington State Department of Ecology (Ecology) and the U.S. Department of Energy, Richland Operations Office (RL). The Technical Baseline Report (BHI-00127) stated that it was a suspect waste site, while also stating, "Past (Hanford) employees were unable to verify that this site (128-H-3) was used as a burn pit". The site has limited access, deterring its selection as a burn pit site. No debris or waste consistent with burning pits has been found at the site.

The Contaminates of Potential Concern (COPCs), identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP), include: polychlorinated biphenyls (PCBs), pesticides, semivolatile organic compounds, volatile organic compounds, total petroleum hydrocarbons, asbestos, silver, cadmium, barium, chromium (total), hexavalent chromium, mercury, lead, and selenium. Although not COPCs, antimony, arsenic, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, vanadium, and zinc were evaluated by performing the expanded inductively coupled plasma metals analytical list. Ecological risk screening levels were exceeded for arsenic, boron, cobalt, lead, manganese, vanadium, zinc, and TPH at the waste site.

Confirmatory sampling was conducted on October 27, 2008. Five test pits were excavated to evaluate the subsurface soil for evidence of burning activities. Lead was detected at a concentration (94.1 mg/kg) above both the groundwater (10.2 mg/kg) and river protection (10.1 mg/kg) lookup values.

The use of pesticides on the orchard was a likely explanation for the elevated lead concentrations found. An evaluation of the distribution coefficient (Kd) for lead (30 mL/g), using RESidual RADioactivity (RESRAD) modeling (BHI 2005), predicts that lead will not migrate to groundwater or the river within the next 1,000 years. Therefore, it is concluded the contaminant concentrations at the 128-H-3 waste site meet the RAOs established in the RDR/RAWP. Beyond a few pieces of surface trash consisting of a piece of heavy wire and the lid from a metal can, no debris was found, and no evidence of use as a burning ground was found at either site.

No physical evidence of burning or debris consistent with burning grounds was found at the waste site. An evaluation of historical photographs, field observations of surface area features, geophysical data, historical research, and the confirmatory sampling data concluded that the site was a borrow area and not a burning ground.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River.

Code:	132-H-2	Classification:	Accepted
Names:	132-H-2; 117-H Filter Building Site	Reclassification:	Interim Closed Out (8/1/2006)
Type:	Burial Ground	Start Date:	1/1/1961
Status:	Inactive	End Date:	1/1/1965
Description:	The site has been remediated and interim closed. The structure had been demolished in-situ in 1984. The site now resembles a gravel parking lot.		
Location:	The site was located southwest of the 118-H-6 (105-H Reactor Building).		
Process Description:	The site consisted of a building that housed the filters for the 118-H-6 (105-H Reactor). The building received exhaust fan discharge through an inlet duct from 118-H-6 and discharged the filtered air through a discharge duct and out the 132-H-1 (116-H Stack). The building was a reinforced concrete structure, 10.7 meters (35 feet) high and 90% below grade. The maximum thickness of the walls and floors was 0.6 meter (2 feet), with the majority being 38 centimeters (15 inches) thick. The ducts were made of reinforced concrete with a maximum wall thickness of 46 centimeters (18 inches). The inlet duct was 23.2 meters (76 feet) long and the exhaust duct was 30.8 meters (101 feet) long.		
Related Sites/ Structures:	The building filtered exhaust air from 118-H-6 (105-H Reactor Building) to the 132-H-1 (116-H Reactor Exhaust Stack).		
Waste Type:	Demolition and Inert Waste		
Waste Description:	Total radionuclide inventory in the 117-H Building was estimated to be 0.41 millicuries. The radionuclides comprising this figure are tritium, carbon-14, cobalt-60, cesium-137, strontium-90, europium-154, europium-152, and plutonium-239/240. Of these radionuclides, strontium-90 is the most restrictive in the Allowable Residual Contamination Level (ARCL) calculations.		
Closure Info:	As part of decommissioning activities, extensive radiological surveying and sampling activities were performed to characterize residual radiological contamination on the accessible internal surface areas of the 117-H Filter Building. Characterization results indicated that residual contamination was confined to the 1 millimeter (0.04 inch) vinyl paint layer. An evaluation of the concrete beneath the paint showed that the contamination did not penetrate the paint or absorb into the concrete.		

The site was released for unrestricted use based on the ARCL Calculations for Decommissioning the 117-H Filter Building. The allowable residual contamination level (ARCL) calculation indicated that the demolished facility would contribute less than 1 millirem/year dose to a hypothetical, maximally-exposed site resident if the site was released for unrestricted use after the demolition and burial in situ of the facility. Consequently, demolition and site grading were performed in 1984 using conventional heavy equipment. The rubble was buried under at least 1 meter (3.3 feet) of clean fill, and the site was graded to blend with the natural terrain.

Using the maximum radiological activities from the pre-demolition characterization data to represent residual contamination levels over 100% of the paint and concrete surface of the former building, RESidual RADioactivity (RESRAD) modeling was performed in 2006 to support the previous decision to demolish and bury the building in place. The RESRAD modeling accounts for radioactive decay from 1984 (year of sampling) to 2006 and predicts that the site achieves the dose limits and risk objectives for rural residential land use with institutional controls, groundwater protection, and river protection.

In accordance with this evaluation documented in the Remaining Sites Verification Package for 132-H-2, 117-H Filter Building (RSVP-2006-049), the 1984 sampling results support a

reclassification of the site to interim closed out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) (EPA 1999).

These results show that the site and contaminant levels remaining in the soil will be protective of direct exposure, groundwater, and the Columbia River. However, the acceptability of unrestricted direct exposure to below-grade structure surfaces in the deep zone has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 1607-H1	Classification: Accepted
Names: 1607-H1; 1607-H1 Sanitary Sewer System; 1607-H1 Septic Tank; 1607-H1 Septic Tank and Associated Drain Field; 124-H-1	Reclassification: Interim Closed Out (9/1/2011)
Type: Septic Tank	Start Date: 1/1/1948
Status: Active	End Date:

Description: The 1607-H1 septic tank system was a nonhazardous, nonradioactive liquid waste site that began operation in 1948, and received sanitary sewage from the 105-H Reactor Building and the 151-H Primary Substation. The sanitary wastes from these buildings were conveyed to the 1607-H1 septic tank system via buried vitrified clay pipes (VCPs). These pipes are planned for remediation as the 100-H-28:4, 1607-H1 Sanitary Sewers waste site. The 1607-H1 drain field measured 17.1 by 15.2 m (56 by 50 ft) and was oriented on a northeast-southwest line from the tank. The at-grade portion of the septic tank was a concrete pad with two manhole covers and a third manhole cover located adjacent to the tank, which was clearly visible at the site in a photograph taken on September 30, 2009

In 1985, the 1607-H1 septic system was reactivated to be used by service trailers supporting deactivation and decommissioning (D&D) project personnel. At that time, the tank was discovered to have been backfilled with fly ash. The ash was vacuumed out of the septic tank and disposed to the ground surface prior to the successful reactivation of the septic system. No other records were located documenting the backfilling of the septic tank.

During an interview with a former employee it was stated that it was common practice for showers and sinks in the 100-H Area change rooms to be used for personnel decontamination, and these drains lead to the sanitary sewers not the process sewers.

In January 2007, the 1607-H1 waste site was assigned to remove, treat, and dispose in the interoffice memorandum "1607-H1 Remaining Site for Remedial Action".

This waste site has been remediated. The septic tank has a 50-person capacity, is constructed of concrete and measures 4.6 by 1.7 by 4.4 meter (15 by 5.5 by 14.5 feet).

Location: The 1607-H1 waste site is located southwest of the 105-H Reactor Building and the 151-H Primary Substation, near the 118-H-2 Burial Ground, in the 100-HR-2 Operable Unit.

Related Sites/ Structures: The septic system is associated with the 105-H Reactor and the 151-H substation.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from 151-H and 105-H Buildings. The flow rate to this unit

was estimated to be 503 liters/day (140 gallons/day).

Waste Type: Not Specified

Waste Description: The waste included carbon steel pipes and drainage tiles/pipe from the area of the septic tank inlet, from the drain field, and concrete/brick from the septic tank and adjacent manhole structure, including all soils excavated from below the drain field piping.

Closure Info: Remedial action at the 1607-H1 waste site was performed between September 24 and November 2, 2009, and included the removal of the below-grade septic tank and the manhole cover surface features. Excavation continued until all debris and contamination associated with the septic tank, drain field pipes, and connecting pipeline structure had been removed. The site was excavated to a depth of approximately 3.2 m (10.5 ft), removing the drain and tile field pipes at approximately 2.5 m (8.2 ft) below surface grade, and to a depth of approximately 4 m (13 ft) at the septic tank and adjacent manhole structure. A total of approximately 1,166 bank cubic meters (BCM) (1,525 bank cubic yards [BCY]) of soil and debris were removed and directly loaded for disposal at the Environmental Restoration Disposal Facility, including all soils excavated from below the drain field piping. This debris included carbon steel pipes and drainage tiles/pipe from the area of the septic tank inlet and the drain field, and concrete/brick from the septic tank and adjacent manhole structure.

An additional 528 BCM (691 BCY) of soil was removed from outside of the septic tank and overlying the drain field to form the overburden pile for the 1607-H1 waste site. The 1607-H1 remediation design identified the separation of overburden soil from the 1607-H1 drain field into two separate soil stockpiles. This overburden soil was intended to be used as backfill after it had been sampled, analyzed, and determined to meet cleanup criteria.

Code: 600-151

Classification: Accepted

Names: 600-151; Dumping Areas 50 Yards and 200 Yards Downstream of River Mile 14; Military Installation NW of 100H Area

Reclassification: Interim Closed Out (10/27/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated. It was the debris remaining from a military installation that was located northwest of the 100H Area. A paved road entered the site from the southwest.

The 600-151 waste site consisted of scattered debris from U.S. Army Base Camp 130 (BC-130), a military camp covering approximately 162,000 square meters (40 acres) near the Columbia River, which was occupied from approximately 1950 to 1954. Debris found throughout the area in 1996 included a partially buried washtub, tin cans, a stove pipe, empty fuel and solvent cans painted "army green", broken concrete and transite, an old stove, wire fencing material, and a large pile of steel fence posts (screw in type for barbed wire fencing). There was evidence of ground disturbance at the site including three pits. A vertical culvert was observed at grade level extending into the ground. The culvert interior was obscured due to the presence of tumbleweeds. Several areas of stressed vegetation were also observed in the area. The 600-151 waste site is located within this historic-archaeological site and contains the remnants of a farmstead intentionally demolished by Hanford-related activities. In 2009, prior to field remediation, were some domestic military debris, several pits (some with wood lining), and shallow trenches (where communication lines were thought to be located) were documented.

Location: The site was located northwest of 105-H Reactor and begins 0.3 kilometers (0.2 miles) downstream of river mile post 14. The site has dirt and paved roads which form its boundary. A paved road enters the site from the southwest.

Waste Type: Equipment

Waste Description:

Waste Type: Soil

Waste Description: Several areas of stressed vegetation were found at the site.

Waste Type: Demolition and Inert Waste

Waste Description: A large pile of broken concrete, electrical wiring, piping and pieces of wood was observed at the site.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: One 208 liter (55 gallon) drum, several 19 liter (5 gallon) cans, and several 0.95 liter (1 quart) cans were noted at the site. The 19 liter (5 gallon) containers appeared to be the type that would hold fuel such as gasoline or kerosene. Empty paint cans that contained "army green" paint are also present.

Closure Info: Prior to use by the Hanford Site Manhattan Project, the 600-151 waste site location was part of an historic agricultural site occupying some 202,000 square meters (50 acres) consisting of five tracts of land used circa 1938 to 1943. During the growing season, orchards were sprayed with lead arsenate from the time the trees bloomed until they were harvested. During remediation, a pattern of circular shaped, stained soil areas was noted beyond the areas identified for remediation in the remedial design. Field personnel suspected that these areas might be associated with historic agricultural pesticide applications and were not from Hanford waste disposal activities. In-process soil samples, collected to support waste characterization, identified high concentrations of arsenic (up to 229 mg/kg) and lead (up to 1,750 mg/kg) suspected to be associated with historic agriculture lead arsenate pesticide use.

Remediation of the 600-151 waste site consisted of mechanical excavation of concentrated debris and manually removing scattered debris from the ground surface as identified in the remediation design drawings. Areas of stained soil and stressed vegetation were scraped and removed to a minimum depth of 0.31 meters (1 ft). In addition, two water valves and a water box associated with the former septic system (the 600-152 waste site) were also removed.

Code: 600-152

Classification: Accepted

Names: 600-152; Military Septic Tanks

Reclassification: Interim Closed Out (4/1/2010)

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: The waste site consisted of an underground septic tank and several surface features, including three in-line concrete covers and two manholes, which allowed access to the septic tank. Underground piping connected the surface features and the septic tank.

Location: The site is located northwest of 105-H Reactor and begins 0.2 miles downstream of river mile post 14. The site has dirt and paved roads which form a boundary surrounding the site. A paved road enters the site from the southwest.

Process Description: The site was constructed to support a military base camp that was created as part of Camp Hanford, which supported the established air defense systems at the camp. Base Camp 130 was located in the vicinity of the 600-151 dumping areas waste site and was abandoned by 1954. In October 2001, liquid in the septic tank was sampled. Results from the sample, described as rainwater, showed elevated gross beta results. No other radionuclides were detected in the analyses. Based on this result, the site was posted with Underground Radioactive Material signs.

Waste Type: Sanitary Sewage

Waste Description: radioactive here because sampling showed gross beta at 72 pCi/liter (see field work discussion for comparisons with Hanford Site background). The site was posted with Underground Radioactive Material signs.

Closure Info: The Remaining Sites Verification Package (RSVP-2009-019) for 600-152 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (ROD). These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario.

Remedial action at the 600-152 waste site was performed between October 13 and November 10, 2008, and encompassed the removal of the below-grade septic tank, the surface features (three concrete covers and two manholes), and associated soils. The concrete piping that linked the septic tank to these surface features was also removed. A section of cast iron pipe containing seals made of lead was removed from the waste site. The lead-containing material was containerized after removal from the excavation. The site was excavated up to 5 m (16 ft) below grade, resulting in the removal of approximately 287 BCM (375 BCY) of material for disposal at the Environmental Restoration Disposal Facility, including approximately 140 m (460 ft) of pipe. Approximately 1,584 BCM (2,070 BCY) of soil (overburden) was removed and stockpiled for evaluation as clean backfill.

The waste site contaminants of potential concern (COPCs) were described in the verification work instruction as lead, pesticides, and polycyclic aromatic hydrocarbons. Although not COPCs, arsenic, antimony, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were evaluated by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals list. Although not a COPC, mercury analysis was performed for the verification samples, and the results were compared against the RAGs for completeness. Analytical results were discussed in the Data Evaluation portion of the RSVP.

There is no process history to suggest that radiological contamination was present in the 600-152 septic tank. The in-process sample results from the tank contents (J17R76) did not detect radiological contamination; however, an elevated gross beta result from a water sample collected within the tank was reported in 2001. The beta emitter that is of most concern associated with this detection is strontium-90; therefore, strontium-90 was added as a COPC.

To determine if the remedial action goals had been met, verification sampling was performed on May 13, 2009. One focused sample was taken for strontium-90 analysis in accordance with an elevated radiological reading indicated by the GPERs survey. A summary of the cleanup evaluation for the soil results against the applicable criteria was presented in Table ES-1 of the RSVP. The results of the verification sampling were used to make reclassification decisions for the site in accordance with the Tri-Party Agreement Handbook Management Procedure, TPA-MP-14 procedure.

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System, and were presented in Attachment 1 of the 95% UCL calculations (Appendix D of the RSVP).

The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining

in the soil were protective of groundwater and the Columbia River. Site contamination extended slightly into the deep zone soils, however, the remediation footprint was evaluated against the more restrictive shallow zone criteria. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep-zone are not required.

100-IU-1

Code: 600-44 **Classification:** Accepted

Names: 600-44; 600-68; Enyert Well Empty Pesticide Container Dump; Herbicide/Pesticide Empty Container Pile **Reclassification:** Deleted From NPL (7/8/1998)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: During the Riverland Expedited Response Action, a visual inspection of the area found several empty aldrin and dieldrin herbicide/pesticide containers lying on the surface. The containers were rusty five gallon and one gallon cans covering an area of approximately 20.90 meters squared (225 square feet). The condition of the containers suggested that they were placed there after Hanford operations began. However, the site is located on an old abandoned homestead about 150 meters (500 feet) east of the commercial vineyard on the west side of the cold Creek Road.

Location: The site was located approximately 150 meters (500 feet) east of the commercial vineyard on the west side of Cold Creek Road. The site is on relatively flat ground located within an abandoned homestead site. There is a perimeter access road located approximately 50 feet west of the site. (at NW 1/4 of NW 1/4 of NW 1/4 of Section 26, T13N R24E)

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The site waste includes empty pesticide and herbicide containers, and debris piles from the homestead.

Closure Info: The containers were removed from the area and properly disposed of as part of the Riverland Expedited Response Action. One surface soil sample (BO1939) and two splits of that sample (BO1940 and H92078) were analyzed for aldrin/ dieldrin and 4,4-DDE. Maximum values of 27,000 parts per billion of aldrin, 38,000 parts per billion of dieldrin and 57 parts per billion of DDE were identified before cleanup, and 0.45 ppb aldrin, and 3.6 ppb dieldrin, and 6.7 ppb 4, 4-DDE in the soil after cleanup. In addition, six old batteries north and east of the excavation were removed, the underlying soil showed only zinc was detected (Heiden 1992).

Code: 600-101 **Classification:** Accepted

Names: 600-101; Riverland Railroad Car Wash Pit; RRCWP **Reclassification:** Deleted From NPL (7/8/1998)

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1963

Description: During the Expedited Response Action cleanup activities, the site resembled a concrete trench. Excavations were made to uncover the pits for sampling. The rail road car cleaning pits were about 1 meter (3 feet) deep and 2 meters (6 feet) wide. Following remediation activities, the pits were backfilled to grade.

Location: The site is approximately 0.8 kilometers (0.5 miles) west of State Highway 240 and 0.5 kilometers (0.3 miles) southwest of the Vernita Bridge .

Process Description: The Riverland Rail Yard Maintenance Facility (Building 6718) steam cleaned and decontaminated railroad cars of grease and radioactive contamination in two pits prior to service and maintenance activities. The decontamination removed grease and oil from the undercarriage, wheels, axles and brakes. Diesel locomotives had their engine compartment, radiators and fans cleaned. Low levels of radioactive contamination was removed. Radioactively contaminated pads, gloves and other wastes were sent to the 200 Area for

disposal. Periodically, the pit floor and walls were cleaned with a broom soaked in diesel fuel, then rinsed with water. Decontamination solutions drained into floor drains which then drained to an open ditch on the north side. The facility operated from 1943 until 1956. The facility was decontaminated in 1963 and the facility structures were sold to the public.

Waste Type: Water

Waste Description: The site was used as a steam cleaning and low-level decontamination station for locomotive engines and cars used at Hanford.

Closure Info: In 1992 and 1993, the Riverland Expedited Response Action characterized and cleaned up the site (DOE/RL-1995; Heiden 1992, 1993, 1994). About 260 cubic meters (340 cubic yards) of concrete and fill material was removed from the wash pits and recycled through a concrete recycling plant. In the 100-B/C Area, and 330 cubic meters (430 cubic yards) of diesel contaminated soil were sent off site for bioremediation DOE/RL-1995.

Radiological surveys did not identify any levels above background. Small quantities of man-made radionuclides were observed in pre-remediation sampling. (A maximum of 19.6 pico curie per gram of cesium-137.) However, based on the levels observed the operable unit was considered nonradioactive. The cleanup level for diesel fuel residue was 200 parts per million (ppm); the confirmatory sample results showed less than 2 ppm remaining. The confirmatory samples also showed all man-made radionuclides were below 1 pico Curie per gram.

About 330 cubic meters (430 cubic yards) of vitrified clay drain pipe fragments and contaminated soil were removed and bioremediated by "land farming" in the 100-C Area, and declared completed in 1996. The pits were backfilled with clean material from onsite. No further action was required for this site following the ERA (DOE/RL 1995) and subsequent ROD (EPA, 1996). On July 8, 1998 the site was deleted from the NPL (DOE/RL-2002).

Code: 600-102	Classification: Accepted
Names: 600-102; 600 AMBS; 600 Area Army Munitions Burial Site	Reclassification: Deleted From NPL (7/8/1998)
Type: Burial Ground	Start Date: 1/1/1971
Status: Inactive	End Date: 1/1/1976
Description: The site consisted of a shallow excavation area that contained a wooden crate used to bury emergency supplies of explosives and munitions used during the 1970's for military exercises (Smith & Stanley, 1993). The excavated area was approximately 0.61 meters (2 feet) wide by 0.91 meters (3 feet) long. The explosives were removed in 1986. The excavation was backfilled in 1993.	
Location: The site is located northwest of 200 West area, approximately 100 meters west of Gate 12, near the McGee Ranch.	
Waste Type: Ordnance	
Waste Description: The unit received military explosives as follows: 6 gun blast simulators, Model 110, dated October 1953; 78 boxes (packed 5 to a box) of fuse ignitors; Model M60, Lot KYC-1, dated May 1960; one trip flare, Model M49; one can containing 50 nonelectrical blasting caps, marked "ARMY"; 43 electrical blasting caps; ~500 ft of time fuse; ~200 ft of detonating cord; and remnants of one grenade or artillery simulator.	
Closure Info: One non intrusive soil sample was collected (sample B01937, with split sample B01938) (Heiden, 1992). The results showed 32.9 ppm nitrate/nitrite (DOE/RL 1993, 1995; Weston 1992) No other contamination was identified. The excavation was backfilled.	

Code: 600-274	Classification: Accepted
Names: 600-274; Riverland; 2,4-D Can Site at McGee Ranch	Reclassification: Deleted From NPL (7/8/1998)
Type: Dumping Area	Start Date:
Status: Inactive	End Date: 1/1/1994
Description:	The 2,4-D can site is surrounded by old-growth sagebrush with a cheatgrass understory. As it is near the far western border of the Hanford Site, there are no Hanford facilities nearby. Eleven 5-gallon cans were found here, nine of which were buried upright and adjacent to each other, with only their tops showing. Two other cans were on top of the ground nearby. The cans were removed and the soil sampled in 1994 as part of the closeout of the 100-IU-1 Operable Unit. In addition, while the original site was being located with the GPS coordinates in 2001, three other 5-gallon cans were found due north of the site about 100 meters (100 yards), also in sagebrush. This site was also GPS'd and flagged with white tape. All cans have been removed.
Location:	The site is about 300 meters (300 yards) north of Highway 24, and 3.2 kilometers (2 miles) west of the Yakima Barricade.
Process Description:	The material in the eleven cans removed in 1994 was 2,4-D, an herbicide. The three cans discovered in 2001 were empty and unmarked.
Related Sites/ Structures:	It is not apparent who placed the cans at this site, or if they were associated with Hanford operations or a nearby farm.
Waste Type:	Barrels/Drums/Buckets/Cans
Waste Description:	The site was 11 old herbicide cans (2,4-D) that had some soil and liquid (in one can) remaining.
Closure Info:	The original eleven cans were removed in 1994. Two composite samples were taken from the soil within the cans and one liquid (with one duplicate) sample. The liquid samples used up all the remaining liquid in the drum. After the cans were dug out of the hole, samples of the remaining soil immediately below the cans, and at 1, 2 and 3 foot depths were taken in three locations (see Field Work section for details and results). Jon Lucas, one of the samplers on the site in 1994, was interviewed in 2001. He said that based on standard operating procedure, any soil from within the cans would have been placed in the 55-gallon drums, especially if there was an odor of herbicide (as the logbook reports). He also said that the excavation would not have been filled back in, but kept open pending receipt of the sampling results. If the results had indicated a problem, they could have gone back to excavate further and re-sample. Since the reports concluded there was no problem with the levels remaining at the site (even if phrased very poorly), they would not have gone back to the site. Thus, he thinks the site may still be visible as a depression. The three remaining drums located about 100 meters north of the original eleven were removed and disposed of in December 2002. Site personnel determined that these drums were empty and not of RCRA concern. Due to the remote location of the site it is considered a "Category 1" radioactive area which allows for landfill disposal.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the direct contact hazard quotient and relative percent difference calculation in Appendix C of the RSVP.

This site does not extend into the deep zone. No institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are required.

Code: 600-52 **Classification:** Accepted

Names: 600-52; White Bluffs Surface Basin **Reclassification:** No Action (11/20/2003)

Type: Drain/Tile Field **Start Date:**

Status: Inactive **End Date:**

Description: The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification. The site was a depression.

Location: The site was located south of Federal Avenue and west of Route 2 North. It was southeast of the White Bluffs Pickling Acid Cribs (600-106), on the opposite side of a powerline road.

Process Description: A 1948 aerial photograph showed a ditch leading from the ice house waste water drain field to the 600-52 basin. It appeared that the southeast corner of the Pickling Acid Crib (600-106) washed out onto this basin. Three soil samples from this unit were collected during the White Bluffs Pickling Acid Cribs Environmental Risk Assessment (ERA) characterization conducted November and December 1992. Sample data may be found in the source document DOE/RL-93-48.

Related Sites/ Structures: 600-106 Pickling Acid Crib

Waste Type: Process Effluent

Waste Description: Nitric and hydrofluoric acids were discharged to the nearby Pickling Acid cribs. Sampling indicated slightly elevated levels of chrome and chloride when compared to background samples. Generally, the acid was neutralized prior to disposal, but may not have been completely neutralized prior to disposal.

Closure Info: This site was assumed to be associated with the Pickling Acid Cribs (sitecode 600-106). The Pickling Acid Cribs were characterized in 1992. Samples were also collected at three locations in the surface basin in 1992. A field walkdown done in April 2003 revealed no debris or anomalies. It was determined that no additional samples would be required.

Reclassification to "No Action" is supported by a preponderance of information (e.g., site history, previous sample results, field walkdown). The 600-52 White Bluffs Surface Basin site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2002) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.5 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-98 **Classification:** Accepted

Names: 600-98; East White Bluffs City Landfills; East White Bluffs Dump and East White Bluffs Dump **Reclassification:** No Action (8/17/2004)

#2; East White Bluffs Landfill; EWBCL

Type: Sanitary Landfill **Start Date:**
Status: Inactive **End Date:** 1/1/1943

Description: This site consisted of two unlined, pre-Hanford landfills. A small amount of scattered surface debris (cans, glass and wood) was visible at dump #1. Dump area #2 was an area of gravel ridges and surface scars. The Technical Baseline Report stated that this area was a dumping area that had been bulldozed.

Location: The East White Bluffs Dump was located approximately 150 meters (492 feet) north of the White Bluffs Ferry Landing. The East White Bluffs Dump #2 was located approximately 275 meters (902 feet) west of the White Bluffs Ferry Landing and north of Federal Avenue.

Process Description: The East White Bluffs Dump reportedly operated from 1850 to 1943. The East White Bluffs Dump #2 operated from 1900 to 1943.

Related Sites/ Structures: upr--100-d-4

Waste Type: Misc. Trash and Debris

Waste Description: Both sites were used to dispose of industrial and domestic wastes common to the time that it was being used. Surface debris found around the East White Bluffs Dump included cans, glass and wood. Surface debris found the East White Bluffs Dump #2 included wood, metallic, domestic (pots, bowls, and glassware), and industrial debris (cables and plywood sheets). The sites contain no known radioactive constituents.

Closure Info: The evaluation of site history reviews, field observations, and geophysical surveys, provided the basis for reclassification of the site to no action. The site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev. 5, Draft B) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). The results of the evaluation have demonstrated that the site was a pre-Hanford dumping area and borrow pit. The site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario, and no institutional controls are required.

The 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL-96-22, Rev. 4, Draft B) identified contaminants of potential concern (COPCs) for dumping areas. The SAP categorically assumed COPCs associated with disposal of hazardous debris. However, further evaluation of the debris observed at the site during the confirmatory sampling walkdown, indicated the debris to be non-hazardous and disposed of prior to Hanford Operations. Therefore, no further evaluation or confirmatory sampling was necessary for this site.

The waste site evaluation and supporting documentation has demonstrated that the site meets the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev. 5, Draft B) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). The evaluation showed that there are no hazardous/dangerous materials present at the site and, accordingly, no residual contamination in the soil. Therefore, the site is protective of human health, groundwater, and the Columbia River.

Code: 600-99 **Classification:** Accepted

Names: 600-99; J. A. Jones #2; JA Jones 2; JA JONES2 **Reclassification:** No Action (9/12/2003)
Type: Burial Ground **Start Date:** 1/1/1948
Status: Inactive **End Date:** 1/1/1955
Description: The site has been reclassified and does not require remediation.
Location: The site was located northwest of the White Bluffs Townsite, north of H Avenue and east of Route 2.
Waste Type: Construction Debris
Waste Description: This site contained minor construction equipment used by the J. A. Jones Construction Company, including wood scraps, concrete, and some metallic waste. However, the excavation records indicate that the site contents were removed to the 200 Areas Burial Grounds in 1971 because of radioactive contamination in the landfill.
Closure Info: The site has been reclassified to "No Action" following evaluation with ground penetrating radar (GPR) and test pits to confirm that it does not require remediation and meets the remedial action objectives (RAOs) and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17) , implemented from the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999). Results of the test pit evaluations and residual soil concentrations for the 600-99 site support unrestricted future use of shallow zone soil (i.e., surface to 15 feet) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

A geophysics survey was done to verify locations of buried material and to dig a test pit to verify that no hazardous material were present in the debris. During the survey, no areas of debris/anomalies requiring removal and/or sampling were located.

Based on the site history, walkdown, and GPR evaluation, test pits were dug at the locations of three identified subsurface anomalies on May 20, 2003. These three anomalies were just outside the previously identified boundaries of 600-99, but close enough to be of concern as possible debris left behind from the previous excavation and removal project. Any debris encountered was to be evaluated by the sampler and certified waste shipper and samples taken to support waste designation. The results of the field activities demonstrate that there are no materials remaining at the 600-99 site that would exceed the RAGS.

Code: 600-100 **Classification:** Accepted
Names: 600-100; 600-119; WBL; White Bluffs City Dump; White Bluffs City Landfill; White Bluffs Landfill **Reclassification:** Interim Closed Out (1/18/2011)
Type: Sanitary Landfill **Start Date:**
Status: Inactive **End Date:** 1/1/1943
Description: The site is an unlined excavation that received industrial, commercial, domestic and farm wastes.
Location: The site is located west of Route 2 North and south of Federal Avenue. It is east of the White Bluffs Pickling Acid Cribs (600-106), approximately 540 meters (1,772 feet) south of the intersection of Route 2 North and Federal Avenue.
Waste Type: Misc. Trash and Debris
Waste Description: The site was used for normal commercial and domestic wastes at the time. It contains no known radioactive constituents. Per BHI-00049, the site was used for disposal of industrial,

commercial, and domestic wastes, cans, bottles, and farm debris.

Closure Info: Attached to the reclassification form for the site were supporting documentation, site evaluations and verification sampling results. They document that this site meets the remedial action objectives (RAOs) and remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD) (EPA 1999).

For consideration of potentially sensitive archaeological materials at the site, the trench material was brought up in 0.3-m (1-ft) lifts and sifted through by field personnel. No archaeologically sensitive materials were discovered during remediation. Due to a lack of anomalous material or evidence of subsurface waste disposal, no material from the trenches was disposed to the Environmental Restoration Disposal Facility (ERDF), no samples were collected from the trenches, and all six trenches were backfilled with the material removed from the trenches.

Remediation occurred from January 4 to 18, 2010. The results of an archaeological investigation in December 2009 indicated there was no underlying debris or anomalous material. The site was excavated only to a depth of 15 cm (6 in.) to remove debris and anomalous material.

One anomaly was found while blading the road during remediation. On January 4, 2010, a 208-L (55-gal) stainless steel container was found unbreached, but partially crushed. A waste management representative evaluated the drum and it was found empty and disposed at ERDF.

Following remediation, verification sampling was conducted in July 2010. The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the 95% UCL calculation in Appendix C of the attachment. The results of the verification sampling were used to make reclassification decisions for the site in accordance with the TPA-MP-14 procedure.

The exact duration of use was not confirmed. Study of the artifacts (e.g., ceramic fragments, tin cans) on the ground surface at the waste site suggests that the site dates back to at least the early 1900s. It has since been determined that the waste site was more likely used for opportunistic dumping rather than as a large scale landfill, and that this debris was buried during Hanford-era operations.

The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The 600-100 waste site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code: 600-120	Classification: Accepted
Names: 600-120; Spare Parts Burn Pit; White Bluffs Spare Parts Burn Pit	Reclassification: Interim Closed Out (3/16/2011)
Type: Burn Pit	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1948
Description: The site was a burn pit that was used for industrial and commercial wastes. The site appears to have been backfilled with coal ash.	

Location:	The site was located west of Route 2 North and south of Federal Avenue, under a set of BPA lines. It is north of the exhumed White Bluffs Pickling Acid Cribs (sitecode 600-106).
Process Description:	White Bluffs Spare Parts Burn Pit waste site appears to have been a burn pit that was used for disposal of industrial and commercial wastes, including flammable wastes, solvents, and waste soils.
Related Sites/ Structures:	600-120 is associated with 600-297 because they were co-located and remediated at the same time.
Waste Type:	Chemicals
Waste Description:	The waste was solvents, waste oils, and flammable wastes. The site may have been used to dispose of other solid wastes. The site appears to have been backfilled with coal ash.
Closure Info:	Based on historical information, results of the geophysical survey and site walkdown observations, the 600-120 waste site was divided into three areas for confirmatory sampling. Confirmatory sampling was conducted in March 2004. It was determined that remedial action was necessary in Areas 1 and 3. Area 2 was determined not to need remediation.

Area 1 was a large depression that appeared to be an abandoned burn pit, backfilled with coal ash. Two test trenches were excavated for confirmatory sampling in Area 1. Evidence of vitrified clay pipe, rubber, burned wood, and coal were found. Confirmatory samples collected from the coal ash and native soil locations in Area 1 found that direct exposure remedial action goals (RAGs) were exceeded for benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene, indicating that site remediation was required. Barium, copper, and selenium were also present in concentrations exceeding soil cleanup criteria for groundwater or river protection.

Area 3 was identified during the geophysical survey as a depression northeast of Area 1 where buried debris was suspected to be present. One test trench was excavated in Area 3 for confirmatory sampling. Concrete walls, debris, coal ash, apparent rust, and oil stained soil were all observed in this test trench. Confirmatory samples of stained soils showed lead and silver concentrations in excess of direct exposure cleanup RAGs. Herbicides, pesticides, and polychlorinated biphenyls (PCBs) were also present in concentrations exceeding soil cleanup criteria for groundwater or river protection.

The COPCs for the 600-120 were preliminarily identified in the 100 Area RDR/RAWP as PCBs, pesticides, SVOCs, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), asbestos, silver, cadmium, barium, chromium (total), hexavalent chromium, mercury, lead, selenium, and sulfate. Asbestos-containing material was not encountered during remedial activities and was therefore eliminated as a COPC.

Remediation occurred from January 7 to March 15, 2010. Materials that were excavated as a part of this remediation included coal ash. A concrete structure determined to be from the co-located 600-297 White Bluffs Imhoff Tank waste site. The concrete was fully removed and the bottom of the structure was at approximately 8 meters (28 feet) below ground surface. Groundwater was encountered at this location after the 600-297 waste site tank was removed. Cleanup verification sampling of the 600-120 waste site also included samples from the 600-297 waste site.

Following remediation, verification sampling was conducted in September 2010. The results indicated that the waste removal action achieved compliance with the remedial action objectives (RAOs) and RAGs for the 600-120 and 600-297 waste sites. The results of the verification sampling are used to make reclassification decisions for the 600-120 and 600-297 waste sites in accordance with the TPA-MP-14 procedure. The verification sampling results support a

reclassification of this site to Interim Closed Out.

The 600-120, White Bluffs Spare Parts Burn Pit waste site verification sampling data, site evaluations, and supporting documentation demonstrate that this site and the 600-297 waste site meet the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington Remaining Sites ROD. These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 feet]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. These sites do not have a deep zone. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the sites are not required.

Code: 600-124	Classification: Accepted
Names: 600-124; Burn Site and Paint Disposal Area; White Bluffs Burn Site and Paint Disposal Area	Reclassification: Interim Closed Out (1/27/2011)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:

Description: The site is a burn area where there is evidence of surface burning and paint disposal. The entire area is littered with burned wood, partly burned roofing materials, glass, nails, metallic debris, transite and isolated paint cans. There is evidence of surface disposal of paint materials in dried paint chips and deposits. There is also a large area with decaying timbers laying in many parallel rows. It appears to be some type of floor structure.

Location: The site is located south of Federal Avenue and just west of the railroad tracks on the west side of Route 2 North. It is approximately 640 meters (2100 feet) southeast of the intersection of Route 2 North and Federal Avenue.

Waste Type: Chemicals

Waste Description: The waste is the remains from paint disposal.

Closure Info: The remaining sites verification package for 600-124, RSVP-2010-094, has documented that the site verification sampling data, site evaluations, and supporting documentation support a reclassification to Interim Closed Out. The site has met the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units,(Remaining Sites ROD) (EPA 1999).

Remediation occurred from January 11 to 18, 2010. The excavation extended to a depth of approximately 1 m (3 ft) bgs, while the vadose zone beneath the excavation was approximately 8.3 m (27.2 ft) thick. Approximately 1 m (3 ft) of material was scraped from the surface and disposed at the Environmental Restoration Disposal Facility. Several paint cans containing various colors of paint were encountered during remedial activities.

Verification sampling was conducted in September 2010 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. Twenty-four statistical verification soil samples were collected on a grid that included the excavated area and the staging pile area footprint.

Verification samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The 95% upper confidence limits (UCLs) on the true population means for residual concentrations of COPCs were calculated for the excavation and staging pile area decision units as specified by the RDR/RAWP.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the 95% UCL calculation in Appendix B of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not extend into the deep zone. Institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code: 600-125	Classification: Accepted
Names: 600-125; Waste Disposal Trenches; White Bluffs Waste Disposal Trench 1	Reclassification: Interim Closed Out (2/1/2011)
Type: Trench	Start Date:
Status: Inactive	End Date:
Description:	The site currently looks like a sandy depression with wood, ceramic and metal debris on the surface.
Location:	The site is located west of Route 2 North and south of Federal Avenue. It is approximately 1020 meters (3347 feet) south of the intersection of Route 2 North and Federal Avenue. The site is on the west side of a powerline road.
Waste Type:	Misc. Trash and Debris
Waste Description:	The waste includes metal shavings, steel piping, plumbing fixtures, paint cans and automotive parts; as well as other metallic and wooden debris. In the same area there are several piles of used railroad ties, broken vitrified clay pipe, concrete pipe, 30.5-centimeter (12-inch) diameter, 6.1-meter (20-foot) long spiral welded pipe, plumbing fixtures, and degraded asbestos insulation.
Closure Info:	The remaining sites verification package for 600-125, RSVP-2010-088, has documented that the site verification sampling data, site evaluations, and supporting documentation support a reclassification to Interim Closed Out. The site has met the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units,(Remaining Sites ROD) (EPA 1999).

Remediation occurred from February 11 to 17, 2010. The excavated area measured approximately 35 m (115 ft) across in an irregular shape, and was 0.8 m (2 ft) deep. The vadose beneath the excavation is approximately 10.6 m (34.8 ft) thick. The waste material, which included several 12 m (40 ft) of 12 in. diameter pipes, was staged in an area located southeast of the excavated area prior to being sent to the Environmental Restoration Disposal Facility. On March 1, 2010, two in-process samples were collected from the excavated area. These samples, J19L23 and J19L24, were comprised of random aliquots of soil collected from across the

surface of the waste site. The in-process sample data was provided in Appendix B of the RSVP.

Verification sampling was conducted in August 2010 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and are presented as an attachment to the direct contact hazard quotient and relative percent difference calculation in Appendix C of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site does not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code:	600-127	Classification:	Accepted
Names:	600-127; Fuel Storage Area; White Bluffs Loading Docks and Fuel Storage Area	Reclassification:	Interim Closed Out (4/26/2011)
Type:	Storage	Start Date:	
Status:	Inactive	End Date:	
Description:	The site is two loading docks and a rectangular area surrounded by a low soil berm 0.5 meters (1.6 feet) high. The ground within the berm is covered by a layer of coal ash. Inside the bermed area are several wooden beams, the tops of which are flush with the ground surface. On the top of these beams are wooden shims placed so as to suggest that they once supported large round horizontal tanks associated with fuel storage. It appears that there were four or five of these large tanks located at the site. Other small debris piles are located nearby that consist of broken vitrified clay piping, plumbing fixtures, and concrete piping. On the north side just outside the berm, there appears to have been a smaller fuel tank site. The two loading docks located adjacent to the fuel storage area are described as the north loading dock and a south loading dock. Each loading dock was approximately 20 meters (66 feet) long by 12 meters (39 feet) wide. These two loading docks appear to have been a convenient location to offload heavy equipment.		
Location:	The site is located west of Route 2 North and south of Federal Avenue. It is approximately 1,100 meters (3609 feet) southeast of the intersection of Route 2 north and Federal Avenue. The north loading dock is visible from Route 2 North.		
Release Description:	Removal of small areas of the ash ground cover reveals soil discoloration and evidence of petroleum product contamination. The soil around the fuel tank site on the north side of the berm is also discolored and appears to be contaminated with a petroleum product, probably gasoline. Adjacent to and on the south side of the berm there appears to have bulk dumping of heavy oils or other petroleum products. The soil contamination in this area extends to the south from the berm for about 4 meters (13 feet). Just west of the north loading dock is a 1.5-meter (4.9-foot) chemical spill spot that appears to consist of a petroleum product.		
Waste Type:	Oil		
Waste Description:	The waste is petroleum product contaminated soil.		
Description:	During remedial activities as documented in RSVP-2004-064, it was observed that the inside of the berm contained coal ash and several wooden beams and shims thought to have once		

supported large tanks associated with fuel storage. To the west of the north loading dock was a chemical spill spot approximately 1.5 m (5 ft) in diameter, which appeared to consist of a petroleum product (BHI 1995). In addition to these areas, several small debris piles were located in the vicinity, and contained broken vitrified clay piping, plumbing fixtures, and concrete piping. Bulk dumping of petroleum products appeared to have occurred at the waste site.

Closure Info: The 600-127 waste site was identified in the Remaining Sites ROD (EPA 1999) as a candidate site for confirmatory sampling. Eight test pits and trenches were excavated based on a locations identified during a geophysical survey and site walkdown. Five of the test pits showed no signs of hazardous debris or discolored soil, so no samples were collected. Confirmatory sampling at the other three locations had elevated levels of barium, cadmium, copper, lead, zinc, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and 4,4-DDE and required remediation.

Remedial action at the 600-127 waste site began on January 19, 2010, and was completed on June 7, 2010. The main excavation which encompassed two of the test pit areas was excavated to groundwater (approximately 8.5 m [28 ft] below ground surface [bgs]) while chasing a diesel or petroleum-product odor. The north loading dock and adjacent chemical spill spot was excavated to approximately 1 m (3 ft) bgs with an adjacent area scraped to 15 cm (6 in.) bgs. Soil and debris were staged in two stages piles prior to disposal at the Environmental Restoration Disposal Facility (ERDF).

Code: 600-128	Classification: Accepted
Names: 600-128; Oil and Oil Filter Dump Site; White Bluffs Oil and Oil Filter Dump Site	Reclassification: Interim Closed Out (9/16/2003)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The site had been an oil dump area that included several canister-type oil filters. Surface debris was removed in the spring of 2003.
Location:	The site was located west of Route 2 North and south of Federal Avenue. It was approximately 730 meters (2395 feet) south of the intersection of Route 2 North and Federal Avenue.
Process Description:	Several Hanford site construction shops and warehouse facilities were located in this area.
Related Sites/ Structures:	The site was associated with the White Bluffs Automotive Repair Shop, site code 600-139.
Waste Type: Oil	
Waste Description:	The waste is oil contaminated soil, oil cans and filters. There are also several small areas with broken glass, cans, and other metal debris.
Closure Info:	A remedial action activity was implemented to remove contaminated soil and associated debris identified during the April 2003 site walkdown. The material was removed to a depth of 25 centimeters (10 inches), sampled to support waste designation, collected and packaged in accordance with waste management plans, and removed from the site for subsequent disposal at the Environmental Restoration Disposal Facility or other approved facilities.

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. The cleanup verification sample results are stored in the Hanford Environmental Information System.

The Waste Site Evaluation for 600-128 (BHI 2003) demonstrated that the site meets the remedial action objectives established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA, 1999). The remaining soils at these sites have been sampled and analyzed. The results of the evaluation demonstrated that the materials remaining at the 600-128 site do not exceed the remedial action goals (RAGs). These results also show that residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.5 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-129 **Classification:** Accepted

Names: 600-129; Pre-MED White Bluffs Community Dump Site (Oil Can Site); White Bluffs Pre-MED Community Dump Site 1 **Reclassification:** Interim Closed Out (3/2/2005)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site has been remediated and interim closed out.

Location: The site was located west of Route 2 North, south of Federal Avenue, on the east side of a north/south dirt road. It was approximately 1.7 kilometers (1.1 miles) south-southeast of the intersection of Route 2 North and Federal Avenue.

Related Sites/ Structures: The site was co-located with 600-191.

Waste Type: Misc. Trash and Debris

Waste Description: The main part of the site is littered with cans, bottles, oil cans, glass, wire, rope, toys, and automotive bodies and parts. On the southern edge industrial wastes include insulators, fuse boxes, conduit, and six 208-liter (55-gallon) drums, one of which is labeled "Carbon Tet". Because of the large number of oil cans, it is believed that the site was used by both Manhattan Engineering District (MED) and White Bluffs residents for the disposal of domestic type waste (Carpenter, 1994). Three glass vials containing an unknown white powder were found on a site walkdown in 1999. Dry cell batteries were also observed on April 22, 1999.

Closure Info: 600-129 and 600-191 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2004-136) for the 600-129 and 600-191 White Bluffs Pre-Manhattan Engineering District (MED) Community Dump Sites 1 and 2, has demonstrated that the remedial action objectives established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) for interim closure of the site have been met.

The site was 305 meters (1,001 feet) long by 80 meters (262 feet) wide with an irregular shape. The total area was 23,768 meters squared (77,979 square feet).

The site was an area littered with miscellaneous trash and debris. It appeared that it was used by both MED and White Bluffs residents for the disposal of domestic waste materials. The debris was concentrated in a swath along the west side of a dirt road. Areas devoid of vegetation were also observed; most were natural (e.g., clay, insects) and occurred due to a physical disturbance that does not recover for lack of moisture. This site was not originally identified as a remaining site, but was included in the removal action due to similarity in debris

items and its location in the vicinity of the 600-129 site.

In May and June 2004, a site walkdown was conducted of the two sites and revealed debris and no evidence of burning. The site walkdown conducted in June 2004 included an EPA representative, who identified hazardous material to be removed. During the walkdown, it was also confirmed that a site-specific sampling plan would not be required. Then on July 28, 2004, a walkdown was conducted to identify, locate, and flag areas of hazardous material (mainly dry cell batteries) requiring removal.

The flagged items were removed in October 2004 by an Environmental Restoration Contractor (ERC) subcontractor. The waste included dry and wet cell batteries, battery cases, asbestos-containing material, and paint materials. The waste was collected, characterized, and packaged in accordance with the waste management plan, and removed from the site for subsequent disposal at the Environmental Restoration Disposal Facility (ERDF) or other approved facility.

The field investigation results indicated that there was no remaining hazardous material at the site and, accordingly, no residual contamination of the soil. The residual surface material at the site was inert debris and was protective of the groundwater and the Columbia River; therefore, no deep zone institutional controls are required.

Code: 600-131	Classification: Accepted
Names: 600-131; Special Fabrication Shop and Warehouse; White Bluffs Water Station and Special Fabrication Shops and Warehouse	Reclassification: Interim Closed Out (9/12/2003)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and closed out. The site included the remnants of the Special Fabrication Shop and Warehouse, boiler house, warehouse, loading dock/well and a water station.	
Location: The site was located approximately 1.3 kilometers (0.8 mile) northwest of the intersection of Route 2 North and Federal Avenue.	
Waste Type: Misc. Trash and Debris	
Waste Description: The waste was miscellaneous trash and debris, including concrete, transite, asphalt shingles, glass, and metallic debris. Transite contains asbestos, which was a hazardous substance. Asbestos was a CERCLA hazardous substance that may require action to mitigate a potential environmental impact. Asbestos wastes are excluded from the Dangerous Waste Regulations (WAC 173-303-071).	
Closure Info: A remedial action activity was implemented, after an April 2003 field walkdown, to remove identified waste material and debris from the site for subsequent disposal at the Environmental Restoration Disposal Facility. The maximum detected results and a composite sample of underlying soil at the location suspected of having the greatest potential for residual contamination, were used to support site reclassification.	

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances. The cleanup verification sample results are stored in the Hanford Environmental Information System.

The Waste Site Evaluation for 600-131 Fabrication Shops (BHI 2003) demonstrated that the site meets the remedial action objectives established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA,1999). The remaining soils at this site has been sampled and analyzed. The result of this evaluation demonstrated that the materials remaining at the 600-131 site do not exceed the remedial action goals (RAGs). These results also show that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.5 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-132	Classification: Accepted
Names: 600-132; Construction Contractor Shop Landfill; White Bluffs Construction Contractor Shop Landfill	Reclassification: Interim Closed Out (9/12/2003)
Type: Depression/Pit (nonspecific)	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The site was a large open borrow pit. The floor was mostly gravel and cobble with rabbitbrush and grasses. It contained scattered debris, such as broken concrete and pieces of metal, similar to the surrounding area. Surface debris was removed in 2003.
Location:	The site was located east of Route 2 North and north of Federal Avenue, approximately 1000 meters (3,281 feet) northwest of the intersection of Route 2 North and Federal Avenue.
Related Sites/ Structures:	The nearby fabrication shops are site 600-131.
Waste Type:	Misc. Trash and Debris
Waste Description:	If this site was actually the Construction Contractor Shop Landfill and not a borrow pit, the wastes that may have been disposed there could include oils, solvents, and cleaning agents (for example, carbon tetrachloride), typical of shop wastes. There may also be radioactive wastes, if this was not a mis-identified site (also see site 600-99). Carpenter (1995) identified two locations along the northwest boundary of the site with spots of oil (1.5-meter [4.9-foot] diameter for both spots).
	The waste that was visible in 1999 was surface debris, common to the entire 100-IU-2 Operable Unit, such as rusted metal cans, concrete rubble, a few pieces of transite, and wire. Two small piles of aluminum shavings are at the site, one on the floor of the pit and one at ground level, near the first pile. A small mound of dirt on the southwest corner, at the surrounding surface elevation, has partially buried pieces of yellow bricks and thick metal. A field walkdown done in April 2003 determined the site was a gravel borrow area and not a landfill.
Closure Info:	After an April 2003 field walkdown a remedial action activity was implemented to remove identified waste material and debris from the site for subsequent disposal at the Environmental Restoration Disposal Facility (ERDF). The maximum detected results from one grab sample and two composite samples of the underlying soil at locations suspected of having the greatest potential for residual contamination were used to support site reclassification.
	The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling

and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances. All analytical data were found to be acceptable for decision-making purposes. The cleanup verification sample results are stored in the Hanford Environmental Information System.

The Waste Site Evaluation for the 600-132 White Bluffs Construction Contractor Shop Landfill (BHI 2003) demonstrates that the site meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE RL 2002), implemented for the Interim Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (surface to 15 feet) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-139	Classification: Accepted
Names: 600-139; Automotive Repair Shop; White Bluffs Automotive Repair Shop and Associated Waste Sites	Reclassification: Interim Closed Out (9/12/2003)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The site was an area thought to be associated with an automotive repair shop. Surface debris included numerous battery caps, engine gaskets, dumped waste oils, and fragments of tail light lenses. The surface debris was removed in May 2003.
Location:	The site was located west of Route 2 North and north of Federal Avenue. It was approximately 700 meters (2297 feet) southwest of the intersection of Route 2 North and Federal Avenue.
Waste Type:	Oil
Waste Description:	The waste included battery caps, engine gaskets, fragments of tail light lenses, and dumped waste oils.
Closure Info:	In April 2003, a field walkdown was conducted to finalize contaminants of potential concern, identify sample locations, and identify sample types for development of a sampling design. Subsequently, remedial action activity was implemented to remove identified waste material and debris from the site for disposal at the Environmental Restoration Disposal Facility. The maximum detected results and a composite sample of underlying soil at the location, suspected of having the greatest potential for residual contamination, were used to support site reclassification.

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances. The cleanup verification sample results are stored in the Hanford Environmental Information System and are summarized in the data summary tables

In accordance with this evaluation, the cleanup verification results from samples of underlying soil support the interim closure of the 600-139 site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the

Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17), implemented for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-176 **Classification:** Accepted

Names: 600-176; White Bluffs Paint Disposal Area **Reclassification:** Interim Closed Out (5/2/2011)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a dumping area where it appears that excess paint materials were disposed of by pouring them on the ground. The ground has dried paint chips on the surface. The paint spills and chips are scattered over a large area.

Location: The site is located approximately 570 meters (1870 feet) west of the intersection of Commercial Avenue and Federal Avenue within the warehouse storage area.

Related Sites/ Structures: Co-located with the 600-295 White Bluffs Paint Shop.

Waste Type: Construction Debris

Waste Description: Paint chips are on the surface of the ground.

Closure Info: Remedial activities took place from December 7, 2009 to February 10, 2010. During remediation, visible surface paint was placed in 208-L (55-gal) drums prior to excavation. Due to the presence of paint in the subsurface soil, the excavation continued to a depth of approximately 1.5 m (5 ft). Additionally, the remedial design for the 600-176 waste site overlapped the 600-295 waste site; therefore, remediation of the 600-176 waste site resulted in the concurrent remediation of the 600-295 Paint Shop waste site.

On December 17, 2009, an empty 10-in.-diameter vitrified clay pipe (VCP) was encountered during excavation and followed to the northeastern corner of the excavation, where it ended in a possible concrete septic tank that was approximately 1.5 m (5 ft) long with unknown depth and width. This VCP was believed to be part of the sewer lines associated with the 600-295 paint shop as shown in drawing H-11-3909 (Atkinson-Jones 1948). The VCP was removed with the material excavated during the 600-176 remediation. This septic system and tank have been identified as part of the 600-301 waste site.

During remediation, green soil was encountered and removed to an additional 1 m (3 ft) below the base of the excavation, until the associated solvent odor was no longer present. Although the material had a strong solvent-type odor, nothing was detected with the photo ionization detector (0.0 ppm readings) and soil samples did not reveal the chemical responsible for the odor. Additionally, coal ash was encountered on the southern side of the excavation that was as much as 46 cm (18 in.) thick in some areas and thinned out across the extent of the excavation. This material was removed and included in the stockpile to the southeast of the excavation. Wood debris was also encountered and stockpiled. The final excavation depth was 1.5 m (5 ft) bgs.

Code: 600-181 **Classification:** Accepted

Names: 600-181; White Bluffs Oil Dump **Reclassification:** Interim Closed Out (9/12/2003)

Type: Dumping Area **Start Date:**

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out. The site was an oil dumping area. The surface was near asphalt-like in appearance as a result of the large quantities of oil that had been dumped.

Location: The site was located west of Route 2 North and south of Federal Avenue. It was approximately 740 meters (2,428 feet) southeast of the intersection of Route 2 North and Federal Avenue. The site was on the west side of an old powerline access road.

Waste Type: Oil

Waste Description: The waste was oil contaminated soil. The top of the soil had formed into an asphalt-like surface.

Closure Info: In April 2003, a field walkdown was conducted to finalize contaminants of potential concern, identify sample locations, and identify sample types for development of a sampling design. Subsequently, a remedial action activity was implemented to remove identified waste material and debris from the site for disposal at the Environmental Restoration Disposal Facility (ERDF). The maximum detected results for a composite sample of underlying soil at the location suspected of having the greatest potential for residual contamination were used to support site reclassification.

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances. The cleanup verification sample results are stored in the Hanford Environmental Information System.

In accordance with the evaluation, the cleanup verification results from samples of underlying soil support the interim closure of the site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) DOE/RL-96-17), implemented for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil [surface to 4.6 meter(15 feet)] and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-182

Classification: Accepted

Names: 600-182; White Bluffs Asbestos Pipe Lagging and Excess Piping

Reclassification: Interim Closed Out (1/4/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is excess piping materials and an area of highly degraded piping insulation that appears to be made of asbestos or a similar material. Several 6.1-meter (20-foot) sections of 30.5-centimeter (12-inch) spiral welded steel pipe are nearby. Other small debris piles are located very nearby that consist of broken vitrified clay piping, plumbing fixtures, and concrete piping.

Location: The site is located west of Route 2 North and south of Federal Avenue. It is approximately 1050 meters (3445 feet) south of the intersection of Route 2 North and Federal Avenue and west of a power line road.

Waste Type: Asbestos (friable)
Waste Description: The waste is piping insulation material that appears to be made of asbestos or a similar material.

Closure Info: The Remaining Sites Verification Package (RSVP-2010-089) for 600-182 waste site has documented that verification sampling data, site evaluations, and supporting documentation have demonstrated that this site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

Remedial action was performed on February 10, 2010. All excess piping material and debris, as well as potential ACM was removed. An overburden pile was created from the topsoil at the main excavation area. In addition to this excavation, two small areas were scraped where asbestos pipe lagging and vitrified clay pipe were found. A waste staging pile area was created to the side of these scraped areas. All scraped areas were excavated to approximately 8 cm (3 in.) below ground surface. The vadose zone beneath the excavation is approximately 5.1 m (16.7 ft) thick. No in-process samples were collected after remediation. The largest excavation has an area of approximately 1,000 m² (10,700 ft²). The scraped area with asbestos lagging is less than 100 m² (1,000 ft²). The scraped area with VCP is approximately 11 m² (118 ft²). The waste staging pile area is approximately 4 m² (43 ft²). The overburden pile is approximately 90 m² (970 ft²). Photographs of these areas were provided in Appendix A of the RSVP.

The contaminants of potential concern (COPCs) were identified based on professional knowledge and waste characterization sampling results. Lead and zinc were included as COPCs due to detection above remedial action goals (RAGs) during waste characterization sampling; therefore, they were included as site COPCs for all decision units. Total petroleum hydrocarbons (TPH) were included as COPCs because of burned material and ash observed at the site. Asbestos was included as a COPC only at the location where asbestos lagging was found. Although not considered COPCs, analyses for the constituents of the inductively coupled plasma (ICP) metals list also included antimony, arsenic, barium, beryllium, boron, cadmium, chromium (total), cobalt, copper, manganese, molybdenum, nickel, selenium, silver, and vanadium. Pesticides, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and polychlorinated biphenyls (PCBs) were not detected during waste characterization sampling, and were not included in the analyses for verification sampling at the 600-182 waste site. Mercury was not detected above background levels and was also excluded as a COPC for verification sampling.

Verification sampling was conducted in August 2010 to support a determination that residual contaminant concentrations met the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The verification sample results were provided in Appendix C of RSVP-2010-089.

The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS).

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not extend into the deep zone. Institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not

required.

Code: 600-188 **Classification:** Accepted
Names: 600-188; White Bluffs Waste Disposal Trench 2 **Reclassification:** Interim Closed Out (3/16/2011)
Type: Trench **Start Date:**
Status: Inactive **End Date:**

Description: The site is an open trench with industrial wastes filling about one-third of the site. There is evidence of chemical or oil dumping and burning along the east side of the trench. The White Bluffs Technical Baseline Report (BHI-00448) states the evidence includes discolored soils and empty 208-liter (55-gallon) drums that are bulging, as if its contents had been burned within the drums. During the April 1999 visit, three empty 208-liter (55-gallon) drums were observed. Only one of them appeared to be bulging. The drums are concentrated near the eastern edge of the site. The chemical or oil dumping and burning appears to have been confined to the area around these drums.

Location: The site is located west of Route 2 North and south of Federal Avenue. It is approximately 1000 meters (3,281 feet) southeast of the intersection of Route 2 North and Federal Avenue. The site is on the east side, and adjacent to, a powerline road.

Waste Type: Misc. Trash and Debris

Waste Description: The waste consists of industrial wastes of wooden and metallic debris. There has been chemical or oil dumping and burning. There are also empty 208-liter (55-gallon) drums.

Closure Info: The 600-188 waste site was remediated on February 10 and 11, 2010. Debris and soil to a depth no more than 1 m (3 ft) below the existing borrow pit surface were removed from the waste site. The excavation surface was 2.5 m (8 ft) below grade at the deepest area. Material removed from the perimeter around the excavation was placed into an overburden pile to be used as backfill material. Waste material was placed in a staging pile area, which was then loaded out to the Environmental Restoration Disposal Facility.

On March 3, 20 10, three in-process soil samples (J119L34, J119L35, and J119L36), one duplicate sample (J19L37), and one equipment blank (J19L3 8) were collected to evaluate the adequacy of remediation. The footprint of the excavation was divided into three sample areas, and a sample was collected from multiple aliquots of soil across the top of each area (Appendix A). No contaminant concentrations of in-process soil samples exceeded direct exposure RAGs. Concentrations of several metals exceeded soil cleanup levels for protection of groundwater and/or the Columbia River but no organic chemicals exceeded soil RAGs.

Code: 600-190 **Classification:** Accepted
Names: 600-190; White Bluffs Warehouse Tar and/or Paint Disposal Area **Reclassification:** Interim Closed Out (9/16/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and interim closed out. The site was an area where tar and/or paints appeared to have been dumped.

Location: The site was located east of Route 2 North and north of Federal Avenue. It was approximately 1000 meters (3,281 feet) northwest of the intersection of Route 2 North and Federal Avenue, by the southwest corner of 600-132, White Bluffs Construction Contractor Shop Landfill.

Process Description: It was assumed that the surface chips of paint on the ground were the result of crews dumping partially full cans of paint onto the ground before disposing of the cans.

Waste Type: Chemicals

Waste Description: The waste site consisted of tar and/or paint that had been dumped on the ground.

Closure Info: In April 2003, a field walkdown was conducted to finalize contaminants of potential concern, identify sample locations, and identify sample types for development of a sampling design. Subsequently, a remedial action activity was implemented to remove identified waste material and debris from the site for disposal at the Environmental Restoration Disposal Facility. The maximum detected results and a composite sample of underlying soil at the location suspected of having the greatest potential for residual contamination were used to support site reclassification.

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances, all analytical data were found to be acceptable for decision-making purposes (Tech Law 2003a, 2003b, 2003c, and 2003d). The cleanup verification sample results are stored in the Hanford Environmental Information System.

In accordance with this evaluation, the cleanup verification results from samples of underlying soil support the interim closure of the 600-190 site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17), implemented for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-191

Classification: Accepted

Names: 600-191; White Bluffs Pre-MED Community Dump Site 2

Reclassification: Interim Closed Out (3/2/2005)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed-out.

Location: The site was located west of Route 2 North and south of Federal Avenue. It was approximately 1.3 kilometers (0.8 miles) southeast of the intersection of Route 2 North and Federal Avenue. This site was north of 600-129, White Bluffs Pre-MED Community Dump Site 1, on the west side of a north/south dirt road.

Related Sites/Structures: The site was co-located with 600-129.

Waste Type: Misc. Trash and Debris

Waste Description: The waste is miscellaneous trash and debris, including oil cans, cans, glass, domestic debris, car parts, and a few full 19-liter (5-gallon) cans of grease.

During the April 1999 visit, the cans of grease described in the Technical Baseline Report could

not be found. However, in addition to the debris already mentioned above, antifreeze containers and dry cell batteries were observed.

Closure Info: 600-129 and 600-191 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2004-136) for the 600-129 and 600-191 White Bluffs Pre-Manhattan Engineering District (MED) Community Dump Sites 1 and 2, has demonstrated that the remedial action objectives established in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD) for interim closure of the site have been met.

The site was 305 meters (1,001 feet) long by 80 meters (262 feet) wide with an irregular shape. The total area was 23,768 meters squared (77,979 square feet).

The site was an area littered with miscellaneous trash and debris. It appeared that it was used by both MED and White Bluffs residents for the disposal of domestic waste materials. The debris was concentrated in a swath along the west side of a dirt road. Areas devoid of vegetation were also observed; most were natural (e.g., clay, insects) and occurred due to a physical disturbance that does not recover for lack of moisture. This site was not originally identified as a remaining site, but was included in the removal action due to similarity in debris items and its location in the vicinity of the 600-129 site.

In May and June 2004, a site walkdown was conducted of the two sites and revealed debris and no evidence of burning. The site walkdown conducted in June 2004 included an EPA representative, who identified hazardous material to be removed. During the walkdown, it was also confirmed that a site-specific sampling plan would not be required. Then on July 28, 2004, a walkdown was conducted to identify, locate, and flag areas of hazardous material (mainly dry cell batteries) requiring removal.

The flagged items were removed in October 2004 by an Environmental Restoration Contractor (ERC) subcontractor. The waste included dry and wet cell batteries, battery cases, asbestos-containing material, and paint materials. The waste was collected, characterized, and packaged in accordance with the waste management plan, and removed from the site for subsequent disposal at the Environmental Restoration Disposal Facility (ERDF) or other approved facility.

The field investigation results indicated that there was no remaining hazardous material at the site and, accordingly, no residual contamination of the soil. The residual surface material at the site was inert debris and was protective of the groundwater and the Columbia River; therefore, no deep zone institutional controls are required.

Code: 600-201	Classification: Accepted
Names: 600-201; White Bluffs Paint and Solid Waste Disposal Site	Reclassification: No Action (9/12/2003)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The site has been evaluated to confirm that it does not require remediation. The site has been reclassified to "No Action".	
Location: The site was located east of Route 2 North and north of Federal Avenue. It was approximately 925 meters (3,035 feet) northwest of the intersection of Route 2 North and Federal Avenue and just south of 600-132, White Bluffs Construction Contractor Shop Landfill.	

Waste Type: Misc. Trash and Debris
Waste Description: The waste was red paint and other debris including, glass, metal shavings, metal parts, and army-green canvas material.

Closure Info: The site has been evaluated with ground penetrating radar and a test pit to confirm that it does not require remediation and meets the remedial action objectives (RAOs) from the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999), and the remedial action goals (RAGs) from the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17). Results of the test pit evaluations for the 600-201 site demonstrate that all RAOs and RAGs for direct exposure, protection of groundwater, and protection of the Columbia River have been met. The site meets cleanup standards and has been reclassified as “no action” in accordance with the Hanford Federal Facility Agreement and Consent Order (Ecology et al. 1998) and the Waste Site Reclassification Guideline TPA-MP-14 (RL-TPA-90-0001) (DOE/RL 1998).

In May 2003, a test pit was dug at an area of anomaly found with GPR. The test pit revealed a flattened steel bucket and some decaying wood. Field screening was done on all debris removed from the pit to determine if a sample needed to be collected. No hazardous material was found. No samples were collected from the pit. The debris was put back into the excavation. The test pit was backfilled the same day it was dug. A single sample of hardened paint was collected.

The calculation brief (BHI 2003) demonstrated that the site met the RAOs established in the Remaining Sites ROD. The results of this evaluation demonstrate that the site does not exceed the RAGs. These results indicate that residual soil concentration support unrestricted future use of shallow zone soil [surface to 4.6 meters (15 feet)] and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-279 **Classification:** Accepted
Names: 600-279; Vegetation Free Area Between White Bluffs and 100F **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is a large area of white ash surrounded by dried grass.
Location: The area is located northwest of the 105-F facility. It is on the west side of the 100 F Area western perimeter road, near the northwest corner of the 100-F Area.
Process Description: The site is apparently related to an old orchard. It is suspected that the site is the remains of a burned storage shed. The yellow material has a sulfur odor. Sulfur was used in orchards to control mold on fruit. The burned metal pieces could be pieces of farm equipment.

Code: 600-293 **Classification:** Accepted
Names: 600-293; White Bluffs Service Station #1 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1944
Status: Inactive **End Date:**
Description: The service station supported the White Bluffs Central Shops. This site may include underground storage tank (s), associated piping and the underlying soil.

Location: The site was located in the White Bluffs area, east of Route 2 North and north of Federal Avenue. It is south of Sand Bar Road and is located on the west side of 600-132. It was approximately 1000 meters (3,281 feet) northwest of the intersection of Route 2 North and Federal Avenue.

Process Description: This facility was used for dispensing of fuel for automotive use.

Waste Type: Oil

Waste Description: The waste is contaminated soil, tanks and associated piping. Contaminants of potential concern may include petroleum products, TPH, PAH and ICP metals.

Code: 600-294

Classification: Accepted

Names: 600-294; White Bluffs Service Station #2

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Unknown

End Date:

Description: The site was the location of a service station with the potential for an underground storage tank (s), associated piping and underlying soils.

Location: The site is located in the White Bluffs area west of the railroad tracks, north of Federal Avenue and near the southeast corner of the equipment lot.

Process Description: The service station dispensing of fuel for automotive use. It had a lube rack and a steam cleaning pad.

Waste Type: Oil

Waste Description: The waste includes petroleum product contaminated soil, underground storage tanks and associated piping. Contaminants of potential concern may include petroleum products (TPH, PAH) and possibly ICP metals.

Code: 600-295

Classification: Accepted

Names: 600-295; White Bluffs Paint Shop

Reclassification: Interim Closed Out (4/13/2011)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of surface and underlying soils associated with the former Paint Shop that was used to support the White Bluffs Central Shops. The footprint of the building is easily recognizable due to a lack of vegetation.

Location: The site is located northwest of Federal Avenue and southeast of Route 2N. The paint shop was located north of Federal Avenue and east of Gasoline Alley. This site is located approximately 17 meters (56 feet) northeast of 600-176 (White Bluffs Paint Disposal Area).

Process Description: Paint shop supported the White Bluffs shops operations.

Related Sites/Structures: The paint shop is associated with the 600-176 dump site.

Waste Type: Soil

Waste Description: Contaminants of potential concern would include VOA, semi-VOA, ICP metals with mercury in the soil.

Code: 600-296 **Classification:** Accepted
Names: 600-296; White Bluffs Fire Department Septic System **Reclassification:** No Action (4/26/2011)
Type: Sanitary Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The site consisted of the septic system for the White Bluffs Fire Department. It is a 1 by 1.5 meter (3.3 by 5 feet) sump with lid, a soil filled 1.5 by 2 meter (5 by 6.5 feet) concrete below grade box, a potential septic drain field with associated piping and the underlying soil. A 15 centimeter (6 inch) drain line extends from the fire house to the septic tank and onto a drain field. These features are all suspected of being the components of the former Hanford Works Fire Station septic system at White Bluffs.

Location: The site is located near the intersection of White Bluffs road and Route 2N. The fire house was located at the corner of Federal Avenue and First Street. The septic system is located northeast of the fire station.

Process Description: The site is a septic system that was used to support the White Bluffs Fire Station.

Waste Type: Sanitary Sewage
Waste Description: The site includes the septic tank, drain field, associated piping and surrounding soils. Contaminants of potential concern include ICP metals and possibly other hazardous substances.

Closure Info: Confirmatory sampling indicated that environmental contamination was not present at this waste site. The analytical results indicate that the residual concentrations of COPCs at this site meet the RAGs and corresponding remedial action objectives for direct exposure, groundwater protection, and river protection. In accordance with this evaluation, the verification sampling results support a reclassification of the 600-296 waste site to No Action.

Code: 600-297 **Classification:** Accepted
Names: 600-297; White Bluffs Imhoff Tank **Reclassification:** Interim Closed Out (3/16/2011)
Type: Settling Tank **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of an Imhoff tank (separations tank) and its underlying soils.

Location: The site is located southwest of Route 2 North and south of Federal Avenue, under a set of BPA lines. The Imhoff Tank is located south of Federal Avenue, west of the Chicago Milwaukee Railroad and approximately 47 meters (154 feet) east of waste site 600-120.

Process Description: The Imhoff tank was originally believed to have supported the septic system for the White Bluffs facility complex. Further investigation found it facilitated separation of solids from the influent going to the 600-106 Pickling Acid Cribs (as shown on H-11-3709), located approximately 170 meters (558 feet) southwest of the tank. 600-106 was also used to dispose of spent pickling acid that was utilized to pickle galvanized piping. Generally, the hydrofluoric and nitric acid used for pickling was neutralized prior to disposal, but may not have been completely neutralized prior to disposal.

Related Sites/Structures: The tank is associated with the White Bluffs facility complex and Pickling Acid crib (sitecode 600-106). 600-297 was remediated with the White Bluffs Spare Parts Burn Pit (sitecode 600-120).

Waste Type: Soil

Waste Description:	Contaminants associated with the effluent to the tank from the White Bluffs facility complex have not been evaluated, so they are presently unknown.
Closure Info:	The 600-297 White Bluffs Imhoff Tank was located adjacent to the northeast corner of the 600-120 White Bluffs Spare Parts Burn Pit. The two waste sites were sampled and remediated at the same time.

The 600-297, White Bluffs Imhoff Tank waste site, was believed to have been a septic tank associated with the White Bluffs sanitary sewer system. During remediation, this tank was determined to resemble an old boiler. Further investigation found it facilitated separation of solids from the influent going to the 600-106 Pickling Acid Cribs (as shown on H-11-3709), located approximately 170 meters (558 feet) southwest of the tank.

The Contaminants of Potential Concern for the 600-120 and 600-297 were preliminarily identified in the 100 Area RDR/RAWP as PCBs, pesticides, SVOCs, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), asbestos, silver, cadmium, barium, chromium (total), hexavalent chromium, mercury, lead, selenium, and sulfate. Asbestos-containing material was not encountered during remedial activities and was therefore eliminated as a COPC.

Remediation of 600-120 and 600-297 occurred from January 7 to March 15, 2010. On January 7, 2010, several concrete structures associated with the Imhoff Tank were encountered during initial remediation. A 10 centimeter (4 inch) diameter vitrified clay pipe was found protruding from each of the concrete structures. During demolition of the concrete structures, a 114 liter (30gallon) tank was encountered on January 11, 2010. This tank resembled an old boiler and contained a small amount of black, non-oily, non-viscous liquid. A sample (J19WT1) was taken of this liquid on April 14, 2010. The concrete structure was fully removed. The bottom of the structure was at approximately 8 meters (28 feet) below ground surface. The materials that were excavated as a part of this remediation included coal ash and a concrete structure determined to be from the co-located 600-297 White Bluffs Imhoff Tank waste site. The concrete was fully removed and the bottom of the structure was at approximately 8 meters (28 feet) below ground surface. Groundwater was encountered at this location after the 600-297 waste site tank was removed. Cleanup verification sampling of the 600-120 waste site also included samples from the 600-297 waste site.

Following remediation, verification sampling was conducted in September 2010. The results indicated that the waste removal action achieved compliance with the remedial action objectives (RAOs) and RAGs for both the 600-120 and 600-297 waste sites. The results of the verification sampling are used to make reclassification decisions for the 600-120 and 600-297 waste sites in accordance with the TPA-MP-14 procedure. The verification sampling results support a reclassification of this site to Interim Closed Out.

The verification sampling data, site evaluations, and supporting documentation demonstrate that the 600-297 waste site meets the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington Remaining Sites ROD. The results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 feet]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. 600-297 does not have a deep zone. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site is not required.

Code: 600-298 **Classification:** Accepted
Names: 600-298; Surface Debris and Stained Soil in 100-IU-2 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site is eight areas of surface debris and stained soil identified during the 100-IU-2 Operable Unit Orphan Sites Evaluation walkdown. (See subsites)

Location: The area of investigation is south of 100-H Area and east of 100-F Area. Approximately eight areas were observed during the Orphan Sites Evaluation of this area.

Process Description: Surface debris, presently in the form of stained soil, was released to ground during the construction, operating, and decontamination and decommissioning (D&D) activities within the 100-IU-2 Operable Unit (OU). The field walkdown was completed using 30 meter by 30 meter grids covering the operable unit. A global positioning system (GPS) was used to navigate each grid and to record the location of field observations. A digital camera was used to photograph each observation as recorded in a field logbook with the GPS record number. The GPS files with coordinates and attributes were downloaded daily to a GIS database for plotting on a map and for maintaining the coordinates and observations electronically. The digital camera files were downloaded daily to a dated folder on a share drive for coordination of photos with GPS data and the field logbook entries. The field walkdown of the Operable Unit did not include known waste sites or posted areas. The field walkdown was limited to observations. No sampling was conducted. Areas potentially containing CERCLA hazardous substances are found scattered throughout the operable unit at the documented coordinates. Observations of potential physical hazards, cultural artifacts, and nonhazardous, non-dangerous solid waste were recorded in logbook EL-1617.

This Site has the Following SubSites:

Code: 600-298:1
Names: 600-298:1; Stained Soil/Surface Debris Area 1

Code: 600-298:2
Names: 600-298:2; Stained Soil/Surface Debris Area 2

Code: 600-298:3
Names: 600-298:3; Stained Soil/Surface Debris Area 3

Code: 600-298:4
Names: 600-298:4; Stained Soil/Surface Debris Area 4

Code: 600-298:5
Names: 600-298:5; Stained Soil/Surface Debris Area 5

Code: 600-298:6
Names: 600-298:6; Stained Soil/Surface Debris Area 6

Code: 600-298:7
Names: 600-298:7; Stained Soil/Surface Debris Area 7

Code: 600-298:8
Names: 600-298:8; Stained Soil/Surface Debris Area 8

Code: 600-298:1 **Classification:** Accepted
Names: 600-298:1; Stained Soil/Surface Debris Area 1 **Reclassification:** None

soil approximately 5 m by 15 m (16 ft by 49 ft).

Location: The site is located approximately 107 m (351 ft) west of Federal Avenue and 616 m (0.4 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-298

Names: 600-298; Surface Debris and Stained Soil in 100-IU-2

Code: 600-298:5

Classification: Accepted

Names: 600-298:5; Stained Soil/Surface Debris Area 5

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 4 by 12 m (13 by 39 ft) area of three small yellow stains and no vegetation. There is also some wood and metal debris.

Location: The site is located approximately 91 m (299 ft) west of Federal Avenue and 155 m (509 ft) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-298

Names: 600-298; Surface Debris and Stained Soil in 100-IU-2

Code: 600-298:6

Classification: Accepted

Names: 600-298:6; Stained Soil/Surface Debris Area 6

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of discolored soil, suspect asbestos containing material (ACM), white porcelain fragments, wood fragments, and two small depressions within the disturbed area. One of the depressions is 0.3 m (12 in) deep by 0.2 m (8 in) in diameter. There is also a 7.6 cm (3 in) steel pipe, a welded flat iron, and possible subsurface debris.

Location: The site is located approximately 121 m (397 ft) east of Federal Avenue and 461 m (0.3 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-298

Names: 600-298; Surface Debris and Stained Soil in 100-IU-2

Code: 600-298:7

Classification: Accepted

Names: 600-298:7; Stained Soil/Surface Debris Area 7

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a wooden floor like structure of approximately 1 by 2 m (3 by 6 ft) with remnants of a thin stained layer of material. The site lacks vegetation.

Location: The site is located approximately 683 m (0.4 miles) east of Federal Avenue and 706 m (0.4 miles) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

The SubSite is Part Of:**Code:** 600-298**Names:** 600-298; Surface Debris and Stained Soil in 100-IU-2**Code:** 600-298:8**Classification:** Accepted**Names:** 600-298:8; Stained Soil/Surface Debris Area 8**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The subsite consists of a wooden floor like structure of approximately 1 by 2 m (3 by 6 ft) with remnants of a thin stained layer of material. The site lacks vegetation.**Location:** The site is located approximately 811 m (0.5 miles) east of Federal Avenue and 877 m (0.5 miles) north of Route 2 North in the former White Bluffs Community area.**The SubSite is Part Of:****Code:** 600-298**Names:** 600-298; Surface Debris and Stained Soil in 100-IU-2**Code:** 600-299**Classification:** Accepted**Names:** 600-299; Surface Debris and Batteries**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The site consists of areas of scattered surface debris including batteries.**Location:** The site is located southwest of Route 2 North and south of Federal Avenue, adjacent to a powerline road.**Process Description:** From November 2006 to February 2007 a field walk-down of the 100-IU-2 Operable Unit was conducted as a final closure screening activity. The surface debris, which was identified as potentially containing CERCLA hazardous substances, was precisely located and recorded using Global Positioning Satellite (GPS) technology, digital photography, and field logbook EL-1617. The field walk-down was completed in 30 meter by 30 meter grids that covered the Operable Unit. A hand-held global positioning system (GPS) was used to navigate each grid and to record the location of field observations. A digital camera was used to photograph each observation as recorded in a field logbook with the GPS record number. The GPS files with coordinates and attributes were downloaded daily to a database for plotting on a map and for maintaining the coordinates and observations electronically. The field walk-down of 100-IU-2 did not include known waste sites or posted areas. The field walk-down was limited to observations. No sampling was conducted. Potential CERCLA hazardous substances was found scattered throughout the Operable Unit at the coordinates provided. Observations of potential physical hazards, cultural artifacts, and nonhazardous, non-dangerous solid waste were also recorded.**Waste Type:** Batteries**Waste Description:** A dry cell battery is typically composed of zinc, ammonium chloride, zinc chloride, carbon and manganese (IV) oxide (http://en.wikipedia.org/wiki/Dry_cell). A wet cell battery may include lead and sulfuric acid as contaminants of potential concern.**This Site has the Following SubSites:**

Code: 600-299:1
Names: 600-299:1; Surface Debris and Batteries Area 1

Code: 600-299:2
Names: 600-299:2; Surface Debris/Batteries Area 2

Code: 600-299:3
Names: 600-299:3; Surface Debris/Batteries Area 3

Code: 600-299:4
Names: 600-299:4; Surface Debris/Batteries Area 4

Code: 600-299:5
Names: 600-299:5; Surface Debris/Batteries Area 5

Code: 600-299:1 **Classification:** Accepted

Names: 600-299:1; Surface Debris and Batteries Area 1 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The subsite consists of scattered remnants of batteries that are located through out the area. Most have been removed with the exception of what appear to be thousands of wet cell battery caps. Yellow staining of the soil is found in some places.

Location: The site is located approximately 724 m (0.4 miles) west of Federal Avenue and 599 m (0.4 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-299

Names: 600-299; Surface Debris and Batteries

Code: 600-299:2 **Classification:** Accepted

Names: 600-299:2; Surface Debris/Batteries Area 2 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The subsite consists of a 6 volt wet cell car battery in a small dump site.

Location: The site is located approximately 452 m (0.3 miles) east of Federal Avenue and 2.5 Km (1.6 miles) north of Route 2 North. It is north of the 100-F Area.

The SubSite is Part Of:

Code: 600-299

Names: 600-299; Surface Debris and Batteries

Code: 600-299:3 **Classification:** Accepted

Names: 600-299:3; Surface Debris/Batteries Area 3 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The subsite consists of a pile of old dry cell batteries in a degraded condition covering an area approximately 1 m (3 ft) in diameter.

Location: The site is located approximately 199 m (653 ft) south of Federal Avenue and 2.2 Km (1.4 miles) west of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-299

Names: 600-299; Surface Debris and Batteries

Code: 600-299:4

Classification: Accepted

Names: 600-299:4; Surface Debris/Batteries Area 4

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a few scattered batteries in an area less than 1 m (3 ft) in diameter amongst scattered debris (e.g. metal cans, containers and broken glass) from a pre-Hanford agricultural dump site.

Location: The site is located approximately 239 m (784 ft) south of Federal Avenue and 2.2 Km (1.4 miles) west of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-299

Names: 600-299; Surface Debris and Batteries

Code: 600-299:5

Classification: Accepted

Names: 600-299:5; Surface Debris/Batteries Area 5

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a concentration of degraded dry cell batteries in a 1 m (3 ft) diameter area.

Location: The site is located approximately 82 m (269 ft) south of Federal Avenue and 2.0 Km (1.2 miles) west of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-299

Names: 600-299; Surface Debris and Batteries

Code: 600-300

Classification: Accepted

Names: 600-300; Miscellaneous Surface Debris Sites

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of twelve areas containing miscellaneous scattered debris.

Process Description: Various sizes and forms of CERCLA surface debris were created during the construction, operating, and decontamination and decommissioning (D&D) activities within the 100-IU-2 Operable Unit (OU). From November 2006 to February 2007 a field walk-down of the OU was conducted as a final closure screening activity. Surface debris, which was identified as potentially containing CERCLA hazardous substances, was precisely located and recorded using a hand-held Global Positioning Satellite (GPS) unit, digital photography, and documented

in field logbook EL-1617. The field walk-down was completed in 30 meter by 30 meter grids that covered the Operable Unit. A hand-held global positioning unit (GPS) was used to navigate each grid and record the location of field observations. A digital camera was used to photograph each observation as recorded in a field logbook with the GPS record number. The GPS files with coordinates and attributes were downloaded daily for post-processing and data correction and for maintaining the coordinates and observations electronically. The digital camera files were downloaded daily to a dated folder on a share drive for coordination of photos with GPS data and the field logbook entries into EL-1617.

This Site has the Following SubSites:

Code: 600-300:1
Names: 600-300:1; Miscellaneous Surface Debris Area 1

Code: 600-300:2
Names: 600-300:2; Miscellaneous Surface Debris Area 2

Code: 600-300:3
Names: 600-300:3; Miscellaneous Surface Debris Area 3

Code: 600-300:4
Names: 600-300:4; Miscellaneous Surface Debris Area 4

Code: 600-300:5
Names: 600-300:5; Miscellaneous Surface Debris Area 5

Code: 600-300:6
Names: 600-300:6; Miscellaneous Surface Debris Area 6

Code: 600-300:7
Names: 600-300:7; Miscellaneous Surface Debris Area 7

Code: 600-300:8
Names: 600-300:8; Miscellaneous Surface Debris Area 8

Code: 600-300:9
Names: 600-300:9; Miscellaneous Surface Debris Area 9

Code: 600-300:10
Names: 600-300:10; Miscellaneous Surface Debris Area 10

Code: 600-300:11
Names: 600-300:11; Miscellaneous Surface Debris Area 11

Code: 600-300:12
Names: 600-300:12; Miscellaneous Surface Debris Area 12

Code: 600-300:1	Classification: Accepted
Names: 600-300:1; Miscellaneous Surface Debris Area 1	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:

Description: The subsite consists of a single 208 liter (55 gallon) drum with the lid missing and tar inside. The drum is approximately 50% full. The site is located approximately 112 m (367 ft) west of Federal Avenue and 1.2 Km (0.75 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-300

Names: 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:2

Classification: Accepted

Names: 600-300:2; Miscellaneous Surface Debris Area 2

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 2 by 2 m (6.6 by 6.6 ft) area with dried, bright yellow paint chips. The site is located approximately 61 m (200 ft) west of Federal Avenue and 858 m (0.5 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-300

Names: 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:3

Classification: Accepted

Names: 600-300:3; Miscellaneous Surface Debris Area 3

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 7.6 L (2 gal) bucket that is approximately two-thirds full of what appears to be paint. The site is located approximately 1.2 Km (0.75 miles) east of Federal Avenue and 790 m (0.5 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-300

Names: 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:4

Classification: Accepted

Names: 600-300:4; Miscellaneous Surface Debris Area 4

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of an enclosed container, approximately 19 L (5 gal)). It appears to be mostly empty but field personnel were not sure. This container may have been used for desiccant or other dry materials. The site is located approximately 792 m (0.5 miles) east of Federal Avenue and 260 m (853 feet) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-300

Names: 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:5

Classification: Accepted

Names: 600-300:5; Miscellaneous Surface Debris Area 5

Reclassification: None

Type: Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of various size containers from 2 to 9 L (0.5 to 5 gallons). Some are empty while others are partially full of suspect petroleum product. There are approximately ten containers in a 3 by 3 m (10 by 10 ft) area. The site is located approximately 1 Km (0.6 miles) west of Route 2 North and 1.4 Km (0.9 miles) north of Route 1 in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:6**Classification:** Accepted**Names:** 600-300:6; Miscellaneous Surface Debris Area 6**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of an unknown white solid substance spilling out of a ruptured rusty metal can that is approximately 1 L (0.26 gal) in size. The site is located approximately 16 m (52 ft) east of Federal Avenue and 256 m (840 ft) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:7**Classification:** Accepted**Names:** 600-300:7; Miscellaneous Surface Debris Area 7**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of an unknown white solid substance spilling out of a ruptured rusty metal can that is approximately 1 L (0.26 gal) in size. The site is located approximately 65 m (213 ft) east of Federal Avenue and 303 m (994 ft) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites

Code: 600-300:8**Classification:** Accepted**Names:** 600-300:8; Miscellaneous Surface Debris Area 8**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of an unknown white solid substance spilling out of a ruptured rusty metal can that is approximately 1 L (0.26 gal) in size. The site is located approximately 154 m (505 ft) east of Federal Avenue and 365 m (0.2 miles) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites**Code:** 600-300:9**Classification:** Accepted**Names:** 600-300:9; Miscellaneous Surface Debris Area 9**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of an intact rusted 113 liter (30 gallon) drum. There is no way to determine whether or not the drum is empty. The site is located approximately 562 m (0.3 miles) east of Federal Avenue and 854 m (0.5 miles) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites**Code:** 600-300:10**Classification:** Accepted**Names:** 600-300:10; Miscellaneous Surface Debris Area 10**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of a single 208 L (55 gal) drum partially buried and mangled. It is not possible to determine if the drum is empty. The site is located approximately 620 m (0.4 miles) east of Federal Avenue and 837 m (0.5 miles) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites**Code:** 600-300:11**Classification:** Accepted**Names:** 600-300:11; Miscellaneous Surface Debris Area 11**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The subsite consists of a single 208 L (55 gal) drum partially buried and mangled. It is not possible to determine if the drum is empty. The site is located approximately 798 m (0.5 miles) west of Federal Avenue and 1.9 Km (1.2 miles) north of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-300**Names:** 600-300; Miscellaneous Surface Debris Sites**Code:** 600-300:12**Classification:** Accepted

Names: 600-300:12; Miscellaneous Surface Debris Area **Reclassification:** None
12

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of concentrated debris of rusted metal including metal turnings, wood and one dry cell battery. There is no vegetation in about a 1 m (3 ft) diameter area. The site is located just outside the 100-F Area approximately 914 m (0.6 miles) east of Federal Avenue and 2.1 Km (1.3 miles) north of Route 2 North.

The SubSite is Part Of:

Code: 600-300

Names: 600-300; Miscellaneous Surface Debris Sites

Code: 600-301

Classification: Accepted

Names: 600-301; White Bluffs Sanitary Sewer Pipelines

Reclassification: None

Type: Sanitary Sewer

Start Date:

Status: Inactive

End Date:

Description: The site consists of the sewer pipelines in the White Bluffs area. It has five components consisting of the historical sewer system and underlying soils documented on construction drawing H-11-3709 and four other suspected related features discovered during the Orphan Site Evaluation (OSE) field investigation.

Location: The sewer system is located throughout the White Bluffs area.

Process Description: The sanitary sewer system is a network of pipelines connect to multiple facilities all discharging to a Imhoff Tank prior to being released to the filter and leaching bed, as shown in White Bluffs drawing plot plan H-11-3709. Septic system transfer piping connecting to the septic tank. Little is known about the sanitary sewer service piping. The pipeline size, depth and construction material are all unknown.

Related Sites/ Structures: Eleven facilities are shown on H-11-3709, that connect to the sanitary sewer system from the south side of town. Site 600-176

Code: 600-302

Classification: Accepted

Names: 600-302; French Drain with Vent Pipe

Reclassification: No Action (2/9/2011)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site consists of a french drain, and underlying soil, with a vent pipe located approximately 2 meters (6 feet) northeast. The drain is about 1 meter (3 feet) in diameter, both have covers.

Location: The site is located approximately 361 meters NNE of the intersection of Route 2 North and Sand Bar Road.

Closure Info: The remaining sites verification package, (RSVP-2010-095), has documented that the confirmatory sampling data, site evaluations, and supporting documentation support a reclassification to No Action. The current site conditions have achieved the remedial action objectives and remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-

FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Results of confirmatory sampling performed in October 2010 concluded that remediation was not necessary.

During confirmatory sampling, it was observed that the french drain extended to approximately 1 m (3 ft) below ground surface. The vent pipe was a 1 in (3 ft) section of pipe that was attached to nothing. The linear features identified on the geophysical survey were determined to be 1 in. diameter, 0.5 in. diameter, and 6 in. diameter stainless steel sewer and vent lines leading directly to the french drain. Material for sampling was not present in these pipelines.

No radiological activity or volatile organic compounds (VOCs) were detected during confirmatory sampling. Additionally, no anomalous or stained soil was observed. Confirmatory sampling indicated that environmental contamination was not present at this waste site. Based on confirmatory sampling, remedial action was determined to be unnecessary.

The contaminants of potential concern (COPCs) were determined based on consideration of possible discharges from an industrial area. Because historical drawings indicated that this is the site of previous White Bluffs office buildings, contamination due to industrial processes was not anticipated, but a worst-case scenario was assumed. Polychlorinated biphenyls (PCBs), sulfate, chloride, semivolatile organic compounds (SVOCs), mercury, and the expanded list of inductively coupled plasma (ICP) metals were identified as COPCs.

The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and are presented as an attachment to the direct contact hazard quotient and relative percent different (RPD) calculation in Appendix B of the RSVP.

Code: 600-303	Classification: Accepted
Names: 600-303; Vertical Pipes	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: This feature consists of a 3 by 3 meter (9.8 by 9.8 foot) area with 4 vertical pipes, 2.5 to 3.8 centimeter (1 to 1 1/2 inch) in diameter, sticking out of the ground.	
Location: The site is approximately 361 meters (1185 feet) north/northeast of the intersection of Route 2 North and Sand Bar Road. It is approximately 20 meters (65 feet) S of 600-189. The feature is located approximately 4 meters from the SE corner of the footprint of the former office building.	
Process Description: The purpose of these pipes is unknown.	

Code: 600-305	Classification: Accepted
Names: 600-305; Suspect Asbestos Containing Material Sites	Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: Site consists of areas of scattered suspect asbestos debris. There are 5 sites that contain surface suspect asbestos debris. The sites are vegetated with native grasses and rabbit brush.

Location: Locations of the debris are as follows: E577632.80, N147948.61, E577696.82, N147936.53, E578195.65, N147168.34, E578293.84, N147397.84, E578926.03, N147948.43

Process Description: The debris appears to have been excess construction materials randomly disposed of.

Waste Type: Asbestos (friable)

Waste Description: These sites contain suspect asbestos containing materials (ACM).

This Site has the Following SubSites:

Code: 600-305:1

Names: 600-305:1; Suspect ACM Sites Area 1

Code: 600-305:2

Names: 600-305:2; Suspect ACM Sites Area 2

Code: 600-305:3

Names: 600-305:3; Suspect ACM Sites Area 3

Code: 600-305:4

Names: 600-305:4; Suspect ACM Sites Area 4

Code: 600-305:5

Names: 600-305:5; Suspect ACM Sites Area 5

Code: 600-305:1

Classification: Accepted

Names: 600-305:1; Suspect ACM Sites Area 1

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a roll of roofing product that is potential asbestos containing material (ACM). The site is located approximately 365 m (0.2 miles) west of Federal Avenue and 442 m (0.3 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:

Code: 600-305

Names: 600-305; Suspect Asbestos Containing Material Sites

Code: 600-305:2

Classification: Accepted

Names: 600-305:2; Suspect ACM Sites Area 2

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 3 by 3 m (10 by 10 ft) area of insulating material that is potential asbestos containing material (ACM). The site is located approximately 290 m (0.2 miles) west of Federal Avenue and 399 m (0.25 miles) south of Route 2 North in the former White Bluffs Community area.

The SubSite is Part Of:**Code:** 600-305**Names:** 600-305; Suspect Asbestos Containing Material Sites**Code:** 600-305:3**Classification:** Accepted**Names:** 600-305:3; Suspect ACM Sites Area 3**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The subsite consists of fabric-like material that is potential asbestos containing material (ACM). The site is located approximately 1.2 Km (0.75 miles) east of Federal Avenue and 759 m (0.5 miles) south of Route 2 North in the former White Bluffs Community area.**The SubSite is Part Of:****Code:** 600-305**Names:** 600-305; Suspect Asbestos Containing Material Sites**Code:** 600-305:4**Classification:** Accepted**Names:** 600-305:4; Suspect ACM Sites Area 4**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The subsite consists of a 2 by 2 m (6 by 6 ft) area with potential asbestos containing material (ACM) insulation that might also be fiberglass. The site is located approximately 944 m (0.6 miles) east of Federal Avenue and 395 m (0.25 miles) south of Route 2 North in the former White Bluffs Community area.**The SubSite is Part Of:****Code:** 600-305**Names:** 600-305; Suspect Asbestos Containing Material Sites**Code:** 600-305:5**Classification:** Accepted**Names:** 600-305:5; Suspect ACM Sites Area 5**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The subsite consists of two sheets of insulation that are potential asbestos containing material (ACM). The sheets are roughly 8 m (26 ft) apart. The site is located approximately 925 m (0.6 miles) east of Federal Avenue and 754 m (0.5 miles) north of Route 2 North in the former White Bluffs Community area.**The SubSite is Part Of:****Code:** 600-305**Names:** 600-305; Suspect Asbestos Containing Material Sites**Code:** 600-306**Classification:** Accepted**Names:** 600-306; Burn Site #1**Reclassification:** None**Type:** Burn Pit**Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a burned area with metal, wood, nails, iron plate, tar paper debris and the underlying soil.

Location: The site is located 21 meters (69 feet) southeast of the White Bluffs sheet metal shop at coordinates E577815.41, N147902.17.

Waste Type: Misc. Trash and Debris

Waste Description: Contaminants may include asbestos and petroleum products. No other waste information was available.

Code: 600-307 **Classification:** Accepted

Names: 600-307; Burn Site #2 **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a burned area with metal, wood, tar paper debris and the underlying soil.

Location: The site is located 38 meters (125 feet) southwest of the Hanford Receiving Warehouse at White Bluffs. The center point coordinates for the site are E577937.09, N147962.07.

Waste Type: Construction Debris

Waste Description: Contaminants may include asbestos and petroleum products.

Code: 600-308 **Classification:** Accepted

Names: 600-308; Garnet Sand **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of a 6 by 6 meter area with scattered garnet sand and the underlying soil.

Location: The site is located between two rail spurs and approximately 112 meters (367 feet) east of the 105 Warehouse. Center point coordinates for this site are E577594.68, N148649.90.

Waste Type: Soil

Waste Description: The contaminant of potential concern is lead.

Code: 600-309 **Classification:** Accepted

Names: 600-309; Burn Site #3 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a burned area with wood, clay pipe, fabric (suspect asbestos containing material - ACM), rubber hoses and the underlying soil. Soil and cobbles were also dumped here.

Location: The site is located 254 meters (833 feet) west of sitecode 600-158 - White Bluffs Ground Storage Tank and Booster Pump Station.

Waste Type: Misc. Trash and Debris

**Waste
Description:**

Code: 600-310 **Classification:** Accepted
Names: 600-310; Burn Site #4 **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a burned area with glass, cinders, slag, metal and the underlying soil.
Location: The site is located 12 meters (39 feet) north east of sitecode 600-171 - White Bluffs Office. The center point coordinates for the site are E578208.20, N148209.90.

Code: 600-311 **Classification:** Accepted
Names: 600-311; Burn Site #5 **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of an area of concentrated burned debris and the underlying soil. Remnants of the burned debris include nails and tar like roofing material. It appears to be next to an area where a building had once been.
Location: The site is located 126 meters (413 feet) southeast of WIDS sitecode 600-200, on the south side of a White Bluffs Office.

Code: 600-312 **Classification:** Accepted
Names: 600-312; Burn Site #6 **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of an area of concentrated burned debris and the underlying soil. Remnants of the burned debris include nails and tar like roofing material. The site appears to be next to an area where a building had once been.
Location: The site is located 138 meters (452 feet) southeast of WIDS sitecode 600-200, on the north side of a White Bluffs Office. Center point coordinates for the site are E578238.91, N147691.25.

Code: 600-316 **Classification:** Accepted
Names: 600-316; Dry Cell Batteries **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of six places where dry cell battery debris was found lying on the ground surface.
Location: The six debris areas are located west of the Hanford Construction Camp and along three miles of Route 2 North.

This Site has the Following SubSites:

Code: 600-316:1
Names: 600-316:1; Dry Cell Batteries Area 1

Code: 600-316:2
Names: 600-316:2; Dry Cell Batteries Area 2

Code: 600-316:3
Names: 600-316:3; Dry Cell Batteries Area 3

Code: 600-316:4
Names: 600-316:4; Dry Cell Batteries Area 4

Code: 600-316:5
Names: 600-316:5; Dry Cell Batteries Area 5

Code: 600-316:6
Names: 600-316:6; Dry Cell Batteries Area 6

Code: 600-316:1
Classification: Accepted

Names: 600-316:1; Dry Cell Batteries Area 1
Reclassification: None

Type: Unplanned Release
Start Date:

Status: Inactive
End Date:

Description: The subsite consists of debris from a dry cell battery pack in an area less than 1 m (3 ft) in diameter. The site is located approximately 86 m (282 ft) north of Route 2 North and 1.8 Km (1.1 miles) southeast of the intersection of F Avenue and Route 2 North.

The SubSite is Part Of:

Code: 600-316
Names: 600-316; Dry Cell Batteries

Code: 600-316:2
Classification: Accepted

Names: 600-316:2; Dry Cell Batteries Area 2
Reclassification: None

Type: Unplanned Release
Start Date:

Status: Inactive
End Date:

Description: The site consists of farmstead debris including items such as cans and bottles and includes four dry cell batteries in a 5 m (16 ft) diameter area.

Location: The site is located approximately 848 m (0.5 miles) west of Route 2 North and 3.2 Km (2 miles) north of Route 11A.

The SubSite is Part Of:

Code: 600-316
Names: 600-316; Dry Cell Batteries

Code: 600-316:3
Classification: Accepted

Names: 600-316:3; Dry Cell Batteries Area 3
Reclassification: None

Type: Unplanned Release
Start Date:

Status: Inactive
End Date:

Description: The site consists of debris from a dry cell battery pack. The affected area is less than 1 m (3 ft)

in diameter. The site is located approximately 725 m (0.5 miles) west of Route 2 North and 1.2 Km (0.75 miles) north of Route 11A.

The SubSite is Part Of:**Code:** 600-316**Names:** 600-316; Dry Cell Batteries

Code: 600-316:4**Classification:** Accepted**Names:** 600-316:4; Dry Cell Batteries Area 4**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The site consists of debris from a dry cell carbon core battery pack in an area less than 1 m (3 ft) in diameter. The site is located approximately 235 m (771 feet) west of Route 2 North and 1.6 Km (1.0 miles) north of Route 11A.**The SubSite is Part Of:****Code:** 600-316**Names:** 600-316; Dry Cell Batteries

Code: 600-316:5**Classification:** Accepted**Names:** 600-316:5; Dry Cell Batteries Area 5**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The site consists of debris from dry cell carbon core batteries in an area less than 1 m (3 ft) in diameter. The site is located approximately 58 m (186 feet) west of Route 2 North and 941 m (0.6 miles) north of Route 11A.**The SubSite is Part Of:****Code:** 600-316**Names:** 600-316; Dry Cell Batteries

Code: 600-316:6**Classification:** Accepted**Names:** 600-316:6; Dry Cell Batteries Area 6**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The site consists of debris from a single dry cell battery that was located during the site visit conducted on 02/20/2008. The site is located approximately 61 m (200 ft) north of Route 2 North and 688 m (0.4 miles) southeast of the intersection of F Avenue and Route 2 North.**The SubSite is Part Of:****Code:** 600-316**Names:** 600-316; Dry Cell Batteries

Code: 600-341**Classification:** Accepted**Names:** 600-341; Inter Areas Battery Remnant Area #1**Reclassification:** Interim Closed Out (10/21/2010)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site had two subsites that consisted of four (4) areas containing dry cell battery remnants and/or battery debris. The subsites were: 600-341:1 Inter Areas Battery Remnant Area #1a and 600-341:2 Inter Areas Battery Remnant Area #1b

Location: Areas SG_1-079 and SG_1-080 are located 0.33 Km (0.2 miles) south of Route 6 and 0.84 Km (0.5 mi) east of SR 24. SG_1-306 is located 18 m (59 ft) south of Route 6 and 1.9 Km (1.2 miles) west of the curve where Route 6 goes from a North/South to an East/West road. BCB-019 is located 0.58 Km (0.4 miles) north of Route 1 and 0.64 Km (0.4 miles) east of B/C Area.

Process Description: The WCH Inter-Areas Segment 1 Orphan Site Evaluation (OSR-2009-0002; CCN-147807) identified four areas (SG_1-079, SG_1-080, SG_1-306 and BCB-019) that contained battery related debris. The areas were at locations having features visible in 1943 aerial imagery consistent with uncontrolled dumping grounds or buildings. Areas SG_1-079 and SG_1-080 are located 0.33 Km (0.2 miles) south of Route 6 and 0.84 Km (0.5 mi) east of SR 24. SG_1-306 is located 18 m (59 ft) south of Route 6 and 1.9 Km (1.2 miles) west of the curve where Route 6 goes from a North/South to an East/West road. BCB-019 is located 0.58 Km (0.4 miles) north of Route 1 and 0.64 Km (0.4 miles) east of B/C Area.

This Site has the Following SubSites:

Code: 600-341:1
Names: 600-341:1; Inter Areas Battery Remnant Area #1A

Code: 600-341:2
Names: 600-341:2; Inter Areas Battery Remnant Area #1B

Code: 600-341:1 **Classification:** Accepted

Names: 600-341:1; Inter Areas Battery Remnant Area #1A **Reclassification:** Interim Closed Out (9/27/2010)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The subsite consisted of two areas which were field identified as area 1 and 2. They contained dry cell battery remnants and battery debris. Area 1 was approximately 1 m (3 ft) in diameter. Area 2 was observed to be approximately 0.5 m (1.5 ft) in diameter. There was no process history associated with the 600-341:1 subsite, although Area 1 was thought to be associated with a pre-Hanford farm.

Closure Info: The Remaining Sites Verification Package (RSVP-2010-053) for the 600-341:1 has documented that the subsite has met the remedial action objectives (RA0s) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

The COPCs included cadmium, total chromium, lead, mercury, hexavalent chromium, total petroleum hydrocarbons (TPH), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCB s), organochlorine pesticides, and polycyclic aromatic hydrocarbons (PAH). Although not considered COPCs, antimony, arsenic, barium, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were evaluated for by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals list.

Remediation of Area 2 of the 600-341:1 subsite occurred on February 11, 2010. The excavation was approximately 2.5 by 3.5 m (8 by 12 ft) and approximately 0.5 m (1.5 ft) deep. All of the Area 2 waste was sent to the Environmental Restoration Disposal Facility. Area 1 was remediated on February 16, 2010. Because the characterization sampling of Area 1 showed elevated cadmium levels, it was determined that the best disposal pathway was off-site shipment. Area 1 was excavated by hand to an approximate diameter of 1 m (3 ft) and a depth of 0.5 m (1.5 ft). A total of approximately 5 BCM (6.5 BCY) of material was removed from the waste site.

Verification sampling was conducted in May 2010 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The verification sample results were provided in Appendix C of the RSVP and indicated that the waste removal action achieved compliance with the remedial action objectives.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft.]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

The SubSite is Part Of:

Code: 600-341

Names: 600-341; Inter Areas Battery Remnant Area #1

Code: 600-341:2

Classification: Accepted

Names: 600-341:2; Inter Areas Battery Remnant Area #1B

Reclassification: Interim Closed Out (10/21/2010)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of two areas (SG_1-079, SG_1-080) located 0.33 Km (0.2 miles) south of Route 6 and 0.84 Km (0.5 mi) east of SR 24 that contain dry cell battery remnants were discovered on October 23, 2008 while the Inter-Areas Segment 1 Orphan Site Evaluation was being conducted (EL-1616-1).

The areas were described as being battery remnants covering an area 2 to 3 m (7 to 10 ft) in diameter within a larger farmstead dump (metal cans and glass). Several photos show the debris. The 1943 aerial imagery shows an undeveloped road leading to the site location at the mouth of a large depression.

Closure Info: The remaining sites verification package (RSVP-2010-066) for 600-341:2 has documented that the current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision (Remaining Sites ROD) (EPA 1999).

Two waste characterization samples were collected on December 17, 2009, showing contamination by polycyclic aromatic hydrocarbons (PAH), several metals, and total petroleum hydrocarbons (TPH). Sample J19DW6 was collected from Area 1 soil and sample J19DW7 was collected from Area 2 soil. Staining was not present on the surface at the sample locations, but subsurface debris was observed at approximately 10 cm (4 in.) below the surface. Remediation

occurred on April 26, 2010. After excavation, Area 1 was approximately 24 m² (258 ft²) and Area 2 was approximately 12 m² (130 ft²). Each excavation was approximately 0.8 m (2 ft) deep. The vadose zone beneath the excavation was approximately 12.1 m (39.7 ft) thick. A total of approximately 15 BCM (20 BCY) of contaminated material was disposed at the Environmental Restoration Disposal Facility.

Verification sampling was conducted in July 2010 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the ROD.

Contaminants of potential concern (COPCs) included arsenic, lead, zinc, PAH, and TPH. The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Different (RPD) calculation in Appendix C of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. This site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

The SubSite is Part Of:

Code: 600-341

Names: 600-341; Inter Areas Battery Remnant Area #1

Code: 600-342

Classification: Accepted

Names: 600-342; Inter Areas Contaminated Clothing Area near Susie Junction

Reclassification: Interim Closed Out (3/5/2010)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consisted of a 20 m (66 ft) diameter area that contained discarded radiological protective clothing.

Location: This site was located 521 meters from "Susie" railroad junction and 140 meters west of waste site 600-38 (Railroad Siding Susie). Originally the clothing debris was located approximately 8 meters SW of the rail line.

Closure Info: The 600-342 waste site was remediated as a "plug-in" site in accordance with the Remaining Sites ROD (EPA 1999) and associated Explanation of Significant Difference (ESD) (EPA 2009). Per the 2009 ESD, plug-in sites are documented in the Administrative Record, and an annual fact sheet will be published by DOE identifying sites that have been added to the Remaining Sites ROD. The addition of plug-in waste sites will not have a significant impact on the scope, performance, or costs of the Remaining Sites ROD (EPA 1999).

Code: 600-343

Classification: Accepted

Names: 600-343; Inter Areas Burn Site #1

Reclassification: Interim Closed Out (9/27/2010)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

- Description:** trench.
- Location:** The site is located approximately 481 meters (0.3 miles) WNW of Susie railroad junction (Gable Butte).
- Process Description:** The site was discovered on December 10, 2008 while the WCH Inter-Area Segment 1 Orphan Site Evaluation (WCH OSR-2009-0002; 147807) was being conducted. The feature was described as a 6 by 6 square meter (387 sq. ft.) stain resembling ash and asphalt dumped in a trench.
- Closure Info:** The Remaining Sites Verification Package (RSVP-2010-052) for the 600-343 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).

The COPCs included total chromium, lead, mercury, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and semivolatile organic compounds (SVOCs). Although not considered COPCs, antimony, arsenic, barium, beryllium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were evaluated by performing analyses for the constituents of the expanded inductively coupled plasma (ICP) metals list.

Remediation of the waste site occurred on February 9, 2010. Approximately 1 m (3 ft) of fly ash and asphalt material were removed from the trench area, and all excavated material was directly loaded into containers for shipment to the Environmental Restoration Disposal Facility. The excavation floor depth of 1 m (3 ft) below ground surface, and the vadose beneath the excavation is approximately 45 m (148 ft) thick. A total of approximately 135 BCM (177 BCY) of material was removed from the waste site. Photographs of the excavation are provided in Appendix A of the RSVP.

Verification sampling for the 600-343 waste site was conducted in May 2010 to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Difference (RPD) calculation in Appendix C of the RSVP.

This site does not have a deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

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- Code:** 600-344 **Classification:** Accepted
- Names:** 600-344; Inter Areas Stain Site #1 **Reclassification:** Interim Closed Out (10/21/2010)
- Type:** Unplanned Release **Start Date:**
- Status:** Inactive **End Date:**
- Description:** This site consists of a stained area with metal pre-Hanford container lids.
- Location:** The site is located in the SE ¼ of Section 4 in Township 13N Range 25E approximately 2.7 Km (1.7 miles) northwest of the 100-B/C Area. It is approximately 0.5 Km (0.34 miles) south of the Columbia River and 23 m (75 ft) west of an unmarked road. (E561662.68 N145734.47)
-

Closure Info: The Remaining Sites Verification Package (RSVP-2010-067) for the 600-344 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units. The RSVP and sampling results support a reclassification of the site to interim closed out.

Remediation of the site occurred on April 26, 2010. Approximately 1 m (3 ft) of stained soil and metal debris was removed from the area, and all excavated material was directly loaded into containers for shipment to the Environmental Restoration Disposal Facility. The excavation floor depth of 1 m (3 ft) below ground surface, and the vadose beneath the excavation is approximately 15 m (51 ft) thick, based on well data in the area. A total of approximately 120 bank cubic meter (BCM) (157 bank cubic yards [BCY]) of material was removed.

The contaminants of potential concern for the site were identified based on field observation and the laboratory results of waste characterization sampling. The COPCs included lead, polycyclic aromatic hydrocarbons (PAH), total petroleum hydrocarbons (TPH), and pesticides.

Verification sampling was conducted in July 2010. In accordance with the RSVP, the verification sampling results support a reclassification to Interim Closed Out. This site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required. The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Direct Contact Hazard Quotient and Relative Percent Difference (RPD) calculation in Appendix C of the RSVP.

Code: 600-345	Classification: Accepted
Names: 600-345; 100-BC Vicinity Oil Stain and Filter Area	Reclassification: Interim Closed Out (10/21/2010)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:

Description: This site consisted of a stained area with oil filters.

Location: The site was located on the south side of Route 6 approximately 450 m (0.28 miles) west of the curve where Route 6 goes from a North/South to an East/West road. The site is approximately 28 m (92 ft) south of 600-253. (E563569.11 N145087.08)

Closure Info: The Remaining Sites Verification Package (RSVP-2010-068) for the 600-345 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units. The RSVP and sampling results support a reclassification of the site to interim closed out.

Remediation occurred on February 10, 2010, and all oil filters and apparent stained soil were removed. The excavated area measured approximately 4 by 5 m (12 by 15 ft) and was approximately 46 cm (18 in.) deep. A total of approximately 22 bank cubic meters (BCM) (29 bank cubic yards [BCY]) of material was removed from the waste site.

The COPCs included hexavalent chromium, mercury, lead, TPH, and polycyclic aromatic

hydrocarbons (PAH). The laboratory-reported data results for all constituents were stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the Relative Percent Difference (RPD) and Direct Contact Hazard Quotient (HQ) calculation in Appendix C of the RSVP.

Following remediation, verification sampling was conducted in May 2010. Due to levels of total petroleum hydrocarbons (TPH) in the Quadrant 4 verification sample that exceeded cleanup criteria, this quadrant was further remediated and re-sampled for TPH in August 2010. The results of all verification sampling indicated that the waste removal action achieved compliance with the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 600-345 waste site. The RSVP and sampling results support a reclassification of the site to interim closed out.

The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code: 600-346	Classification: Accepted
Names: 600-346; 100-BC Vicinity Ash and Debris Area	Reclassification: Interim Closed Out (9/27/2010)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: This site consists of several small fly ash dump areas with metal debris.	
Location: This feature is located 654 m E of the NE corner of the 100-B/C areas perimeter road, and 480 m from the Columbia River shoreline. (E566729.25 N145318.31)	
Closure Info: The Remaining Sites Verification Package (RSVP-2010-055) for the 600-346 has documented that the site has met the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGS) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD) (EPA 1999).	

The contaminants of potential concern (COPCs) were identified based on professional knowledge and the laboratory results of waste characterization sampling. The COPCs included total chromium, hexavalent chromium, lead, mercury, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAH), and pesticides.

Remediation occurred on February 11, 2010. The six remediated areas ranged in size from 1.8 by 2.4 m (6 by 8 ft) to 6 by 9 m (20 by 30 ft). All excavations extended to approximately 46 cm (18 in.) below ground surface. A total of approximately 42.5 BCM (55.6 BCY) of material was removed from the waste site. The waste material was directly loaded into containers for shipment to the Environmental Restoration Disposal Facility.

Verification sampling was conducted in May 2010 to support a determination that residual contaminant concentrations at this site have met the cleanup criteria specified in the RDR/RAWP and the Remaining Sites ROD.

The laboratory-reported data results for all constituents were stored in the WCH Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and were presented as an attachment to the 95% UCL calculation in Appendix C of the RSVP.

The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site are not required.

Code: 628-1	Classification: Accepted
Names: 628-1; White Bluffs Burn Pit	Reclassification: Interim Closed Out (9/16/2003)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. In the 2003 Waste Site Evaluation document (0600X-CA-V0034), this unit was described as a triangle shaped area, covered with sand and gravel. The original WIDS Information form (Rod Griffin, 2/28/1990) described the area as a pit. It cannot be determined if the gravel was natural erosion, backfill, or both. Physical evidence (e.g. small pieces of ash, etc.) indicates that the area affected was approximately 0.1 hectare (1/4 acre). Vegetation was stressed. Rabbit brush growth was almost nonexistent compared to the growth on the surrounding terrain and tumbleweeds were discolored and stressed.
Location:	The unit was located approximately 300 meters (1,000 feet) north of the Route 2 North and Federal Avenue intersection.
Waste Type:	Misc. Trash and Debris
Waste Description:	Soil sampling will be required to determine what contaminants are present.
Closure Info:	In April 2003, a field walkdown was conducted to finalize contaminants of potential concern, identify sample locations, and identify sample types for development of a sampling design. Subsequently, a remedial action activity was implemented to remove identified waste material and debris from the site for subsequent disposal at the Environmental Restoration Disposal Facility. The maximum detected results and a composite sample of underlying soil at the location suspected of having the greatest potential for residual contamination were used to support site reclassification.

In accordance with this evaluation, the cleanup verification results from samples of underlying soil support the interim closure of the 628-1 site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17f), implemented for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.5 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

100-IU-3

Code: 600-8 **Classification:** Accepted

Names: 600-8; Control Center for Battery A Nike Missile; MIL - H-06C; Wahluke Slope Nike Missile Base; WSNMB; 600-103 (Part) **Reclassification:** Deleted From NPL (7/8/1998)

Type: Military Compound **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1964

Description: The unit is an abandoned military installation that consists of a few concrete foundation pads, and a possible disposal location at a leveled area on the north side of the access road. Over the nearby cliff in the "saddle" were a few 19-liter and 208-liter (5-gallon and 55-gallon) drums and a small amount of debris. The Camp Hanford Forward Positions Descriptive Summary states that two 7600-liter (2000-gallon) underground storage tanks and one aboveground 5,700-liter (1,500-gallon) oil tank were included in the list of structures at this site. The document also states that all listed structures were sold to Washington State University and removed.

Location: The Unit is located at the end of a road near the summit of the Saddle Mountains (NE 1/4 of W 1/4 Section 16 T 15N R 27E).

Related Sites/ Structures: The site is related to the Nike Launch Site H-06-L (600-9).

Waste Type: Demolition and Inert Waste

Waste Description: The unit waste includes lumber, concrete, empty 5 gallon and 55 gallon containers and miscellaneous debris.

Code: 600-9 **Classification:** Accepted

Names: 600-9; Battery A Nike Missile Installation Launch Site; MIL - H-06L; Wahluke Slope Nike Missile Base; WSNMB; 600-103 (Part) **Reclassification:** Deleted From NPL (7/8/1998)

Type: Military Compound **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1964

Description: This unit is an abandoned military site. All surface structures have been removed or leveled. Remaining features include a building foundation, roadways, parking areas, and drainage structures. The underground structure has been backfilled with 29-cubic yards of slurry. A 55-gallon drum buried to its rim, presumed to be a drywell, was also backfilled. Its function is unknown.

Location: The is located north of 100-F Area on the opposite side of the Columbia River. (NW 1/4 Section 34, T 15N R 27E; one mile north of Highway 24 at mile marker 62 1/2).

Related Sites/ Structures: One underground storage tank had been placed at this site during military operations. While the approximate location was known during the remedial activities, no evidence remained of the tank. It was assumed to have been removed during excess operations in the 1970s. A 208 liter (55 gallon) barrel, now backfilled, is buried to the rim at the perimeter of the site. An underground structure has also been filled in with slurry.

Waste Type: Demolition and Inert Waste

Waste Description: The unit contained miscellaneous debris including: paint cans, construction materials, asbestos siding and brake pads, and exposed re-bar associated with structure foundations.

Closure Info: In 1974 the Atomic Energy Commission initiated a cleanup. Two missile magazines were

demolished with explosives in June 1974. In 1993, the underground bunker was filled with 29 cubic yards of slurry and debris was removed.

The 55-gallon drum "drywell" and a rock filled pit were sampled during the Expedited Response Action investigations (Sample numbers BO7KQ2 and BO7KQ3). No environmental hazards were identified.

As reported in the interim closeout report (DOE-RL 1994), full characterization of the H-06L landfill began in April 1994 as a confirmation of the sampling results per the Action Memorandum (Ecology and EPA 1994). Each location identified by the geophysical investigation (WHC 1992) as having an anomaly was excavated with a bulldozer or backhoe. Suspect waste was sampled for characterization by an offsite laboratory.

Table 4.1 of CDM (1994) details the wide variety of debris found at the anomalies excavated, including construction debris, oil filters, light bulbs, batteries, car frames, 208-liter (55 gallon) drums, transite, sheet metal, roofing tar, empty insecticide cans, bottles, dried paint, wood, shoes, rags, paper, food cans, silverware, auto engines, and a toilet bowl. Table 4-4 of CDM (1994) describes the media and location of each of the samples taken from the landfills. Approximately 459 cubic meters (600 cubic yards) of DDT-contaminated soil was discovered and disposed of at the Chemical Waste Management Hazardous Waste Landfill in Arlington, Oregon. More than 153 cubic meters (200 cubic yards) of petroleum-contaminated soil were found and disposed of in Pasco. Six 208-liter (55-gallon) drums of soil contaminated with metals from paint, tar-like waste, and soil from beneath several pesticide cans were designated and sent to the Hanford 616 waste facility. No ordnance or explosive waste was found.

Based on these discoveries, the U.S. Environmental Protection Agency (EPA) and Washington State Department of Ecology (Ecology) asked that the remaining North Slope disposal areas also be characterized and remediated as needed (DOE-RL 1994). Each of 10 potential landfill sites received a geophysical investigation to identify and excavate anomalies (Smith and Rhoades 1994).

Samples of soil and debris were taken from the landfills to determine waste disposition, remediation effectiveness, and for QA/QC checks. Samples B0BSW3 through B0BSW9; B0BSX0 through B0BSX9; B0BSY0, and B0BSZ0 through B0BSZ9 were taken during remediation of the west landfill. Samples B0BSY1 through B0BSY9, and B0BT00 through B0BT12 were taken during remediation of the east landfill. The results from the analyses are reported in DOE/RL-94-139 and the 1996 Record of Decision for the Operable Unit.

Because this site served as an analogous site for all the other military landfills, and because of the elevated levels of contamination found at this site, Ecology and EPA requested that all the military landfills be characterized and remediated as necessary (DOE-RL 1994).

This site was assumed to have an acid neutralization pit, based on facility drawings, but field investigators were unable to locate it at this site. Using the analogous approach, the pit at Site H 12L (600-6) was sampled. No areas of contamination above regulatory limits were detected (CDM 1994).

Code: 600-104	Classification: Accepted
Names: 600-104; USBR 2,4-D Burial Site; USBR-2.4-D	Reclassification: Deleted From NPL (7/8/1998)
Type: Burial Ground	Start Date: 1/1/1966
Status: Inactive	End Date: 1/1/1967
Description: The 2,4-Dichlorophenoxyacetic acid (2,4-D) disposal site is approximately 122 meters (400	

feet) by 18.3 meters (60 feet). The disposal site has been stabilized with native grasses and shrubs.

Location: The 2,4-D burial site is located across the Columbia River from 100 F Area. It is approximately 0.5 miles east of the Columbia River and south of the old White Bluffs townsite at the toe of an encroaching sand dune. (Section 35T, 14N, R27 E)

Process Description: In 1966, the U.S. Bureau of Reclamation (USBR) used this site to bury 46 meters (50 yards) of soil contaminated with 3,407 liters (900 gallon) of 2,4-D that had leaked from storage tanks from a USBR station in Eltopia, Washington (Roos 1990). In 1967, the USBR flattened and buried a reported eleven 2,4-D storage tanks (3.7 meters [12 feet] long with 1.2-meters [4-feet] diameters) in the same excavation as the contaminated soil (Ecology and DOE-RL 1997). The site has not been used since 1967, but the specific location of the burial trench and the dates the items were disposed on are not documented (Ecology and DOE-RL 1997). The half-life of 2,4-D in the soil under dry conditions is usually between 9.4 and 254 days with the average typical half-life under normal application conditions being about 10 days (Cramer 1985, DOE-RL 1994).

Waste Type: Chemicals

Waste Description: In 1966, 2,4-D contaminated soil was generated from leaking storage tanks at a USBR Station in Eltopia, WA. The burial consisted of 900 gallons of 2,4-D that had leaked into 50 cubic yards of soil. A second burial in 1967 consisted of the ten storage tanks, which were flattened and buried in the same location.

Closure Info: Lucas (1993) took samples from eight evenly spaced auger-rig borehole locations at the site in February 1993. Locations 1, 2, 3, and 4 showed less than detection limit results for field analysis of 2,4-D, so these samples were composited into sample number B07KQ6. Locations 5, 6, and 7, also less than the detection limit for field analysis, were composited into sample B07KQ7. Sample B07KQ5 was taken from location 8, which showed a positive (but near detection limit) field analysis result for 2,4-D (Lucas 1993). The laboratory samples showed no detectable levels of 2,4-D (DOE-RL 1994, Shannon & Wilson 1994; Appendix A, Table A-2 of DOE/RL-2002-74 presents a summary of sample results).

Based on the 1993 sampling results and expected life span of the 2,4-D in the environment, only verification sampling (characterization) and hazard mitigation (if justified) was required for the site (Ecology and EPA 1994, DOE-RL 1994c, Ecology and DOE-RL 1997). In February and March 1994, geophysical surveys were conducted at the site to more precisely locate the buried tanks so angle borings could be drilled close to the edges of the tanks (Shannon & Wilson 1994c) for the verification sampling. In July 1994, the U.S. Army Corps of Engineers drilled four exploratory holes at an incline under the buried tanks. Four samples were collected per borehole, plus two duplicate samples and one split provided to Ecology for a total of 19 samples. No 2,4 D or breakdown products were detected. The samples were analyzed for chlorinated herbicides with a method detection limit for 2,4-D of 0.2 ppm (Shannon & Wilson 1994c, Ecology and DOE-RL 1997).

In 1997, a hunter reported to the Fish and Wildlife Commission that he had seen the weathered, 2,4 D Burial Site warning signs and he believed there was still contamination at the site (Ecology and DOE-RL 1997). The EPA toured and investigated the site on May 3, 1997 with the hunter and conducted cursory sampling by digging four small pits that were 0.9 meters (3 feet) in diameter and 0.6 meters (2 feet) deep at locations that showed stressed vegetation. These pits were located 1.5 to 3 meters (5 to 10 feet) from the base of the sand dune and at random locations 6.1 to 61 meters (20 to 200 feet) north of the buried tanks. During the investigation, strong chemical odors were encountered (Ecology and DOE-RL 1997).

Four samples were collected, one of which had a detectable level of 2,4-D higher than the

cleanup standard of 800 ppm. This “hot spot” had 2,4-D concentrations of 2,500 ppm (Ecology and DOE RL 1997). The “hot spot” was estimated as 7.6 meters long by 4.6 meters wide by 1.5 meters deep (25 feet long by 15 feet wide by 5 feet deep) (Lerch 1998). The results of this “hot spot” sample resulted in EPA approving a sampling plan in May 1997 that would further characterize the contamination at this spot (Ecology and DOE-RL 1997).

The characterization sampling data showed 2,4-D as high as 17,000 ppm and approximately 15 cubic meters (20 cubic yards) of contaminated soil that were above the cleanup standards. In addition, the 2,4 D sample contained dioxin levels that exceeded the MTCA standards of 0.00000667 ppm. The contamination ranged from 0.6 to 2.4 meters (2 to 8 feet) deep in the soil. Additional hand auger samples to depths of 1.5 meters (5 feet) taken by EPA indicated further 2,4-D levels ranging from 1,000 to 1,300 ppm (Ecology and DOE-RL 1997).

Contamination was considered to potentially go 3 meters (10 feet) deep and all across the area, based on the sampling data. There is no impact on the groundwater in the area as the groundwater is over 90 meter (300 feet) below the surface of the site and, hence, is not contaminated or impacted by the 2,4-D at this location (Ecology and DOE-RL 1997).

The site was reopened and remediated under a CERCLA Action Memorandum issued in 1997 (Ecology and DOE-RL 1997). In August and September 1997, the bioremediation efforts were under way at this site. Excavated soil was placed on a plastic liner 30 mm thick, and composted manure was tilled into the soil and irrigated regularly (Lerch 1998). Random samples were periodically collected until the results fell within the allowable limits for 2,4-D, which marked the end of the bioremediation process for this waste site (Lerch 1998). The 2,4-D and dioxin-contaminated soil from the “hot spot” identified in May 1997 was excavated and shipped as U240-listed waste to the Laidlaw, Deer Park Treatment, Storage, and Disposal Facility in Texas. About 25 cubic meters (80 cubic yards) of contaminated material was shipped to Texas. Ten crushed tanks were found and removed as well (an eleventh tank was not found). They were shipped as U240-listed waste to the Laidlaw, Grassy Mountain Treatment, Storage, and Disposal Facility in Utah (Lerch 1998). As reported in Lerch (1998, sample numbers, cleanup criteria, and results on pages A-1 and A-2 of DOE/RL-2002-74), five confirmation samples were collected from the excavated tank pit, 20 from the excavated trench, and 11 from the bioremediation area. All results were below the cleanup criteria.

All the objectives established in the 1997 Action Memorandum were met as stated in the closure document 100-IU-3 Waste Site 600-104 Remediation Summary (Lerch 1998).

100-IU-4

Code: 600-105 **Classification:** Accepted

Names: 600-105; SDBDL; Sodium Dichromate Barrel Disposal Landfill **Reclassification:** Closed Out (2/12/1996)

Type: Burial Ground **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1945

Description: The site contained approximately 5000 crushed 55 gallon drums. The 1993 Sodium Dichromate Expedited Response Action removed the crushed barrels. A site visit by Roger Carpenter in 1996 identified a few empty 55 gallon drums on a pallet near well #6-91-46A

Location: The site is located in a small depression between 100-D and 100-H areas. It is approximately 130 meters north of the access road that runs between where the 100-D Badge House and the 100-H Badge House were located.

Process Description: There is very little historical information documented about this site. The landfill was used during the reactor operation years as a disposal site for crushed, empty Sodium Dichromate barrels. Sodium Dichromate was used as a corrosion inhibitor in the reactor cooling water systems.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The wastes disposed of at this site were empty, crushed drums containing sodium-dichromate residue. It is estimated, assuming that 1% of the original quantity of sodium dichromate remained in the drum on disposal, that 30.9 tons of sodium dichromate were disposed. The sodium dichromate was used for water treatment in the 100 Areas. This disposal technique was used only once at this site.

Closure Info: The crushed drums were removed between March 17, 1993 and April 26, 1993. Conventional earth moving equipment was used exhume the barrels and to transport them to the Central Landfill . During the removal activities, small quantities of asbestos, waste oil and batteries were found. These items were disposed of as hazardous waste.

100-IU-5

Code: 600-106	Classification: Accepted
Names: 600-106; WBPAC; White Bluff Pickling Acid Cribs; White Bluffs Pickling Acid Cribs	Reclassification: Closed Out (2/12/1996)
Type: Crib	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1945

Description: The site is located west of 100-F Area, south of the intersection of Route 2 North and Federal Ave. The site consists of two cribs located side by side. The western crib is 200 feet by 45 feet with a 3 foot diameter riser pipe. The eastern crib is 225 feet by 50 feet. Vent pipes protrude from the surface of each crib at 7 to 9 foot intervals. The surface was covered with large cobbles.

Process Description: It is assumed that the cribs received acid etch solutions from the pipe fabrication facility located northeast of the cribs. Nitric and Hydrofluoric acids were used to "pickle" galvanized pipe before being used in the construction of the 100 Area reactors.

Waste Type: Chemicals

Waste Description: The site was used to dispose spent pickling acid used to pickle galvanized piping for use in the reactor buildings during construction. The process used several thousand gallons of nitric and hydrofluoric acid. Generally, the acid was neutralized prior to disposal, but may not have been completely neutralized prior to disposal. Chromium was also identified as a contaminant of concern.

100-IU-6

Code: 600-3 **Classification:** Accepted
Names: 600-3; Hanford Townsite Excess Material Storage Yard/Paint Pit **Reclassification:** Interim Closed Out (9/14/2011)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of a shallow trench that appears to be an old borrow pit. The trench is approximately 37 by 27 by 1.2 meters (120 by 90 by 4 feet). The dumping area spread out over an area approximately 280 by 490 meters (925 by 1,600 feet). Both the dumping area and pit show signs of an attempt to cover the waste, with bulldozer tracks being prevalent throughout the areas. The site also shows evidence of burning. The remains of an old railroad spur are present at the approximate center of the site. This spur traverses the site in an east-west direction. Vegetation, such as grasses and rabbitbrush can be found at the dumping area. However, there are some smaller areas throughout that have stressed vegetation ranging from very little to none.

Location: The site is located north of Gable Mountain, west of Route 2 North, south of Route 1, and approximately 0.8 kilometers (0.5 miles) south of the intersection of Route 1 and Route 2 North.

Waste Type: Misc. Trash and Debris

Waste Description: Dried paint and paint cans can be found on the south side of the pit. Closure rings for 208-liter (55-gallon) drums, roofing paper, and a white fibrous substance suspected of being asbestos are also present. The dumping area contains various solid wastes that include, broken wet cell battery cases and plates, stainless steel pipe and materials, various sizes and types of containers (three which are labeled as containing ethylene glycol), machining operations cuttings, pieces of aluminum, pieces of galvanized sheet, burnt wood, and the remains of dry cell batteries.

Closure Info: Based on existing historical information of the 600-3 waste site, the waste site was recommended for remove, treat, and dispose (RTD) in the Remaining Sites ROD (EPA 1999). Remedial action at the 600-3 waste site began in February 2010, and was completed in February 2011. Photographs of the excavation are provided in Appendix A.

On February 23, 2010, a piece of 2.5-cm (1-in.)-diameter pipe approximately 5 cm (2 in.) long was found amid other debris. The pipe had a bright yellow discolored surface and had field radiological readings of approximately 88,000 disintegrations per minute beta/gamma. The radiation was fixed and no dose was coming from the item. This discovery initiated the posting of the area as a contamination area (CA). Work was suspended at 600-3 until a path forward could be determined.

Excavation began again on April 13, 2010, with radiological controls in place. Several beta- and gamma-contaminated items were found throughout the remediation process, which led to the site being posted as a radiological buffer area (RBA) and soil contamination area (SCA). Other waste items found in concentrated locations at the waste site included paint, pin boxes, drums, crucibles, miscellaneous metal debris, lead sheeting and batteries, and potentially friable asbestos. Several areas of disturbed vegetation, staining, and burning were also found.

The final excavation footprint at the 600-3 waste site consists of a large excavated area divided into the east and west excavations, three waste staging pile area footprints, and smaller areas where concentrated contaminated materials were found, some of which are outside of the main excavation footprint. All of the staged waste was loaded out to the Environmental Restoration Disposal Facility (ERDF). The areas where concentrated lead batteries were found outside of the main excavation also have associated small waste staging pile footprints, which have been

loaded out to the ERDF. Across the main excavation footprint, the depth of remediation ranges from 1 m (3 ft) to 6 m (20 ft). The verification sampling results support a reclassification of the 600-3 waste site to Interim Closed Out.

Code: 600-23 **Classification:** Accepted
Names: 600-23; Dumping Area Within Gravel Pit #11; **Reclassification:** Interim Closed Out (11/30/2001 Gravel Pit 11)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated and closed out. The waste site was an area of buried debris inside a large gravel pit (WIDS site code 600-248). The majority of the waste was located in the southern portion of a terrace, which was at the west end of the gravel pit, south of the entrance road.

Location: This site was located north of the Wye Barricade on Route 2 South, near mile marker number 6, south of the Hanford townsite on the east side of the road. The waste site was inside Gravel Pit #11.

Process Description: The east, southeast and southwest portions of the pit were utilized for dumping of construction debris, equipment and drums. The northeast portion of the pit is still actively used as a gravel source for backfill material.

Related Sites/ Structures: This site was associated with Gravel Pit 11 (site code 600-248) .

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Barrels, most of which were empty, were present at the face of the terrace.

Waste Type: Asbestos (non-friable)
Waste Description: Transit building siding was observed at the site.

Waste Type: Construction Debris
Waste Description: The middle terrace at the west end of the unit contained construction debris. Based on interviews with Hanford employees, drums, construction debris, laboratory equipment from 1706 KE and large pieces of equipment from the 300 Area may have been buried at the site. It had been indicated that the equipment was located on the east edge of the pit. It was possible that some asbestos may have been present. Some of the material disposed of here may have been radiologically contaminated. The contents of the drums were not known.

Closure Info: The cleanup verification package (CVP-2001-00020) has documented that the 600-23 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Remaining Sites ROD (EPA 1999) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17).

The site reassignment to the 100-IU-6 Operable Unit and remedial action decision were documented in the June 2000 Explanation of Significant Difference for the 100 Area Remaining Sites ROD.

Contaminants of concern (COCs) were identified based on site history, type of material found during excavation, radiological surveys, industrial health monitoring, and visual observations made during the excavation process. The COCs, which include nonradionuclides only, were

listed in the Proposed Closeout Plan for the 600-23 Site (BHI 2001) and included the following: arsenic, barium, cadmium, chromium (total), hexavalent chromium, lead, manganese, selenium, silver, zinc.

During excavation, a piece of equipment containing polychlorinated biphenyls (PCBs) was removed from the site. During removal, PCBs leaked from the equipment. The PCBs Aroclor-1248 and Aroclor-1254 were detected in soil and were therefore identified as COCs for the specific equipment removal area. Two biased samples were collected from locations within the site where laboratory waste items with elevated radiological readings were excavated. These samples were analyzed for the site COCs plus isotopic uranium and gamma energy analysis. Site COCs were not detected in either sample above the cleanup levels, and analytical results for the radionuclides were consistent with Hanford Site background.

The remaining soils at the 600-23 site have been sampled, analyzed, and modeled. The results of this effort indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. Based on agreement between EPA and DOE on concrete sampling analyses results, remaining site concrete debris will be used to partially backfill the site excavation.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. For some sites, including this one, WIDS had shown IC restrictions but the sites were remediated to shallow zone criteria so that no ICs were required. The ICs for this site have been revised accordingly.

Code:	600-107	Classification:	Accepted
Names:	600-107; Gable Mountain Plutonium Storage Vault Cribs; 213-J & K Cribs; 213-J&K Cribs	Reclassification:	No Action (2/9/2004)
Type:	Crib	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1950
Description:	The site has been evaluated and determined to meet remedial action objectives. The evaluation supports reclassification. The sites consisted of two small cribs located on the southwest and southeast corners of the 213-J & K Storage Vault Facility.		
Location:	The site was located north of Route 11A, at the base of Gable Mountain.		
Process Description:	The cribs were gravel-filled concrete culverts. Each had a black iron distributor pipe, 5.1-centimeter (2-inch) diameter, running its length approximately 1.2 meters (4 feet) below ground level. Each was covered by a 5.1-centimeter (2-inch) thick concrete slab.		
Related Sites/Structures:	The cribs were co-located with the 213-J&K Vaults.		
Waste Type:	Water		
Waste Description:	Very little water solution ever entered this unit. The distributor piping was removed and inspected. Rust scale taken from the interior of the pipes was found to be free of radioactivity background levels. The unit was removed from radiation zone status on November 11, 1974.		
Closure Info:	The Waste Site Evaluation, 600X-CA-V0025, Rev 3, (BHI 2004) demonstrated that the cleanup verification results from samples of underlying soil support the no action reclassification of the site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design		

Report/Remedial Action Work Plan for the 100 Area (DO/-RL-96-17) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units (EPA 1999).

In May 2003, confirmatory samples were collected from the two cribs. A test pit was dug at each crib. Smear samples were collected from the inlet piping of each crib. Subsurface soil samples were collected from each crib. The sample results verify material at the site does not exceed the Remedial Action Goals (RAG).

Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.5 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code:	600-108	Classification:	Accepted
Names:	600-108; 213-J & K Magazine Waste Storage Cavern; 213-J&K Storage Facility (SF); 213-K Vault; 218-E-16	Reclassification:	Interim Closed Out (7/19/2011)
Type:	Storage	Start Date:	1/1/1944
Status:	Inactive	End Date:	
Description:	This site, 600-108, refers to the 213-K Vault. The other half of the facility is the 213-J Vault, 600-257. Both vaults have been released from radiation zone status. The 213 facility was constructed into the south side of the base of Gable Mountain. The vaults are two parallel reinforced concrete, earth covered storage facilities. The south end of each vault forms a continuous reinforced concrete wing-shaped retaining wall with an attached reinforced concrete loading platform. Distance between the two vaults is 13.6 meters (44.5 feet). Each vault contains three rooms: magazine, vestibule, and instrument room. There are two outside, steel-hinged doors opening onto the loading platform. An inner steel vault door separates the vestibule from the magazine. The 213-J Vault is the western vault. The 213-K Vault is the eastern vault.		
Location:	The unit is located north of Route 11A, east of Gable Mountain Pond.		
Process Description:	The vaults were originally built to store containers of processed plutonium product and waste boxes. Later, the vaults were used to store explosives and ammunition, and for seismic testing. The 213-K vault was used to store equipment in drums that had been contaminated with radioactive sodium. A radiological survey done in October 1981 states the drums had maximum dose rates of 5 millirad per hour. The same radiological surveys reported no smearable contamination in the vault. A radiation survey on July 17, 1990, showed no contamination on the drums. Sodium-22 has a half-life of 2.6 years; sodium-24 has a half-life of 15 hours.		
Related Sites/ Structures:	The site is associated with two cribs (sitecode 600-107) and the 213-J Vault, sitecode 600-257.		
Waste Type:	Equipment		
Waste Description:	The vaults were originally constructed for storage of Hanford plutonium product in containers. They were used only briefly, (1944-1947), for that purpose. They were subsequently used to store explosives, ammunition and drums of equipment contaminated with radioactive sodium. Dose rates up to 5 millirad/hour were measured inside 213-K, on the drums containing sodium contaminated equipment (10/21/1981). No smearable radioactivity was detected on any of the surfaces inside the vaults. All contaminated materials have been removed from the 213-K Vault. It is now empty. Both the 213-K and 213-J vaults have been released from radiation zone status.		

This site was listed as a candidate for sampling in the 100 Area Remaining Sites ROD. Based on a site walkdown conducted in 2003, it was determined that this site required remedial action. Material containing asbestos and other potentially hazardous material was observed.

Closure Info: 600-108 and 600-257 were addressed as a group. The information below documents information for the group of sites.

The 600-108 and 600-257 waste sites were remediated together and documented in the RSVP-2011-051. The division of the waste site into two site codes occurred in June 1999, and was used to accommodate contractor responsibilities.

Remedial action at the sites began on November 8, 2010, and was completed on January 20, 2011. Concrete and other debris were stockpiled prior to removal from the 600-108 excavation for shipment and disposal to the Environmental Restoration Disposal Facility. The overburden soils that surrounded the vaults were stockpiled adjacent to the waste site and will be used to re-contour Gable Mountain to its pre-Hanford conditions. The foundation of the vaults was removed entirely, to a depth of approximately 1 to 2 m (3 to 6 ft) at the base. Photographs prior to, during, and after remediation are provided in Appendix A of the RSVP.

On December 9, 2010, an oil reservoir was found in the fan room at the 600-108 waste site, and a small amount of oil was released to the ground just south of the vault entrance. Most of this oil spilled onto a concrete slab that was subsequently removed; however, a small amount may have leaked under the wall into the area where the vaults were located. In-process samples were collected from this oil spill, and the results are provided in Appendix B. The spilled oil was staged on Griflon to the south of the excavated area. Figure 3 shows the layout of the waste site.

Code: 600-109	Classification: Accepted
Names: 600-109; Hanford Trailer Camp Landfill; HTCL	Reclassification: Interim Closed Out (2/1/2011)
Type: Sanitary Landfill	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1945
Description:	The site is found within what is currently named Gravel Pit 15. Surface markings suggest that materials have been covered by bulldozing with excavation spoil. Visible debris is widely scattered within the pit. A large pile of river rock is located in the central part of the excavation.
Location:	The site is located west of the Hanford High School, north of Roosevelt Avenue, inside Pit 15.
Related Sites/ Structures:	The site is associated with Gravel Pit 15.
Waste Type:	Misc. Trash and Debris
Waste Description:	The unit was used for typical domestic wastes that were used during construction of the Hanford Site facilities. Debris includes metal, glass, fabric and rubber. Nondomestic metal scrap, rebar and concrete is also present.
Closure Info:	The remaining sites verification package for 600-109, RSVP-2010-075, has documented that the site verification sampling data, site evaluations, and supporting documentation support a reclassification to Interim Closed Out. The site has met the objectives established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, rev. 6) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units,(Remaining Sites ROD) (EPA 1999).

Following an archaeological investigation and waste characterization sampling in September

2009, the site was remediated from January to March 2010. Based on the site walkdown, geophysical survey, and observations during an archaeological investigation, confirmatory sampling was determined to be unnecessary, and the waste site was recommended for Remove, Treat, and Dispose (RTD). The excavation was approximately 4.6 m (15 ft) deep in most areas with several places that were slightly deeper. Approximately 9,108 bank cubic meters (BCM) (11,913 bank cubic yards [BCY]) of material was removed from the excavation. Potential asbestos-containing material was secluded from the rest of the excavation, and was directly loaded into ERDF cans.

The COPCs listed in the RDR/RAWP were polychlorinated biphenyls (PCBs), pesticides, semivolatle organic compounds (SVOCs), total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), asbestos, silver, cadmium, barium, total chromium, hexavalent chromium, mercury, and selenium. Although identified as a COPC in the verification work instruction, lead was excluded as a COPC in the top 1 m (3 ft) of this waste site due to pre-Manhattan Project era orchards in this location per Tri-Party Agreement Change Notice TPA-CN-401 (dated December 6, 2010). Arsenic also has been excluded as a COPC in the top 1 m (3 ft) due to the presence of pre-Manhattan Project era orchards.

Following remediation, verification sampling was conducted in June and July 2010. Verification sampling found elevated levels of lead and arsenic in the shallow soils of the waste site that are attributable to pre-Hanford orchard activities, and are not identified as Hanford Site contamination. The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to provision to the Hanford Environmental Information System (HEIS) and are presented as an attachment to the 95% UCL calculation in Appendix C of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow-zone soil (i.e., surface to 4.6 m [15 ft]), and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Residual contamination from the site did not extend into the deep zone; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone of the site were not required.

Code: 600-110	Classification: Accepted
Names: 600-110; Hanford Townsite Landfill; HTL	Reclassification: No Action (8/4/2004)
Type: Sanitary Landfill	Start Date:
Status: Inactive	End Date: 1/1/1943
Description:	The site consisted of an unlined excavated area that had been backfilled.
Location:	The unit was located south of the Hanford Construction Camp between Route 2S and the Hanford Swimming Pond in the horseshoe bend of the irrigation canal.
Process Description:	Research indicated that the landfill was possibly used as a canal that carried water for irrigation. Additional research noted that it operated as an unlined excavation used to dispose of typical industrial and domestic wastes from 1850 to 1943 from the original Hanford townsite. Following the site's operational use, it was backfilled with clean fill for the construction of the Hanford Construction Camp. Stenner et al. (1988) reported that the waste site was not intended to receive radioactive waste. Research also suggested that this waste site was active after 1944 and continued to receive industrial and domestic waste. Early photographs indicated no Hanford Works related ground-disturbing activities prior to March 1944, other than construction for the

nearby Hanford Irrigation Canal.

Waste Type: Misc. Trash and Debris

Waste Description: The site was used to dispose of normal industrial and domestic wastes common for the period.

Closure Info: The site reclassification to "no action" decision was supported based on reviews of the site history, field observations, geophysical surveys, and the confirmatory field investigation results conducted for the Remaining Sites Verification Package (RSVP). No hazardous debris or stained soil was found at the surface of the site or in the subsurface soil during excavation of anomalous areas.

In accordance with this evaluation, the confirmatory field investigation results support a reclassification status of no action for the 600-110 Hanford Townsite Landfill site. The site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA, 1999). The results of the evaluation demonstrated that the site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario. The results also support unrestricted future use of the shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and show that current conditions are protective of groundwater and the Columbia River.

Code:	600-111	Classification:	Accepted
Names:	600-111; P-11 Critical Mass Laboratory Complex (Buildings, Crib, 2 Septic Systems and Associated Piping)	Reclassification:	Interim Closed Out (10/28/2008)
Type:	Laboratory	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1951
Description:	<p>Prior to demolition and cleanup, the site consisted of the P-11 Critical Mass Laboratory which included two facilities (120 Experimental Building and 123 Control Building), a crib, two septic system associated tile field and pipelines, and underground piping and remaining soil contamination. The facilities, crib, and underground piping were decontaminated and demolished in 1974. The facility cleanup plan was unclear whether the concrete foundation of the 120 Building was removed. The foundation of the uncontaminated 123 Building does remain below grade. This site also included two septic tanks. The 120 Building contained two test rooms, a change room with shower, lavatory, service sink and hot water tank. The flooring was a 30.5 cm (12 in) concrete slab perforated by floor drains. The floor drain material went via piping into a below grade catch basin. From the catch basin, the outlet pipeline went to the waste disposal crib. The waste disposal crib was constructed of concrete slabs interlaced together to form an 2.4 m by 2.4 m by 1.5 m (8 ft by 8 ft by 5 ft) crib. At one time, a fence surrounded the crib. The septic system was located due east of the 123 Building. There were two septic tanks, an old and a new (identified on drawing H-7-698). The old septic tank, located approximately 14.7 m (48.2 ft) from the 123 Building was filled with dirt and abandoned in place. Drawing H-7-698 Note 3 identifies that the original tank had been damaged. The piping from the 123 Building to the new septic tank was replaced with new 10 cm (4 in) vitrified pipe. The new septic tank was located approximately 0.5 m (1.6 ft) east of the abandoned septic tank. The tile field begins approximately 36.7 m (120.4 ft) further east and had twelve laterals, six per side.</p>		
Location:	The crib was located at the P-11 Critical Mass Laboratory, approximately 4.8 kilometers (3		

miles) south-southeast of 100 F Area and 0.5 kilometers (1/3 mile) west of Route 2N.

Release Description: On November 16, 1951, a critical excursion (an uncontrolled criticality) resulted in extensive plutonium contamination to the interior of the 120 Building. During the final stages of decontamination work to reactivate the facility, December 4, 1951, a fire broke out in the southwest part of the building apparently from spontaneous ignition of decontamination materials. The fire gutted the storage room and chemistry laboratory, burned through the ceiling, melted the aluminum filter ducts, and set fire to the exhaust filters. Contamination was extensive in this area and throughout the attic after the vent system was breached. Because connecting doors were open, contamination also spread to other parts of the building, particularly to the process rooms. The spread of contamination was augmented by fire control measures, resulting in radioactive particulates being washed to the outside of the building along the foundation and door thresholds. The contamination was fixed using sealants and concrete grout. The 120 Building was sealed off and abandoned in consideration of the high risk and cost to decontaminate and restore the facility for continued criticality studies.

Process Description: The P-11 Project was developed as an experimental facility to support proper design of new chemical separation facilities and was a prerequisite to increased batch size in the 200 Area process. Prior to 1952, the P-11 Facility was used as a laboratory for plutonium criticality studies. The facility consisted of two buildings, the 123 Building (a converted residence) and the 120 Building. The 123 Building, which served as the control house, had been razed (prior to 1974). No plutonium contamination was involved at this component of the site. The 120 Building, which was a single story sheet metal building (oriented north-south) contained the critical assembly room, a small chemistry laboratory, storage and tank room, and a change room. Drain lines from the building and process equipment were routed to an underground waste crib for retention of any disposed radioactive nuclides in the soil. The site was specifically sited isolated from the normal process areas because of the nature and hazards of the work. The 123 Experimental Building was located 48.8 m (160 ft) directly south of the 120 control building. The experimental building was so located relative to the control building that neither the generally prevailing breeze nor the force winds would carry any air-borne contamination towards the control building.

Related Sites/ Structures: The site is associated with the P-11 Critical Mass Laboratory (120 Building Criticality Laboratory) and UPR-600-16.

Waste Type: Soil

Waste Description: Contaminants of Potential Concern (COPCs) included isotopic plutonium, americium-241, gamma-emitting radionuclides, polychlorinated biphenyls (PCBs), inductively coupled plasma (ICP) metals, mercury, and semivolatle organic compounds (SVOCs). Although asbestos was a COPC, it was only to be sampled if suspect asbestos material was observed during sampling activities.

The site received low-level plutonium waste from the 120 Building (Critical Assembly Room, Chemistry Laboratory, Storage and Tank Room, and Change Room). The 120 Building and the crib were demolished in 1974. The waste removed from the site during decontamination and demolition activities consisted of seven transuranic waste boxes, fibreglassed plywood and steel, that were buried in trench 8 of 218-W-4B (Burial Ground). All non-transuranic waste was buried in mixed fission product trenches 12 and 14 in 218-W-4A. The seventeen drums of transuranic waster were buried in trench 7 of 218-W-4B.

The details are 268 - 208 liter (55 gallon) drums, mixed fission products, weighing 50,770 kilograms (111,695 pounds); 17 - 208 liter (55 gallon) drums, transuranic waste, weighing 3,809 kilograms (8,380 pounds); 5 - fiberglass reinforced plywood boxes, weighing 2,600 kilograms (5,200 pounds); 73 - plywood boxes, weighing 124,682 kilograms (274,300 pounds);

2 - steel boxes, weighing 5,009 kilograms (11,020 pounds); 6 truck loads, 8,364 kilograms (18,400 pounds). A total of 10,909 kilograms (24,600 pounds) were buried as transuranic waste and 183,816 kilograms (404,395 pounds) were buried as mixed fission products.

Nontransuranic waste was based on a waste burial limit of 10 nanocuries per gram. This limit was determined by radiation monitoring personnel. These low level wastes were designated as mixed fission products and thus, did not require containment for 20 year retrievability.

Closure Info: 600-111 and UPR-600-16 were addressed as a group. The information below documents information for the group of sites.

In accordance with the Remaining Sites Verification Package for site 600-111 and UPR-600-16, the confirmatory and verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions have achieved the remedial action objectives (ROAs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan (RDR) for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

To track results of confirmatory sampling, the lab complex waste site was stratified into the following seven areas for evaluation and sample collection: Area 1: Former 120 Experimental Building location, Area 2: Former P-11 Crib location, Area 3: Former 123 Control Building location, Area 4: Geophysical anomaly, Area 5: Septic Drain Field, Area 6: Septic Tank, and Area 7: Surface Depression. The identification of the sample areas is based on evidence encountered during confirmatory sampling and differs from that based on historical information presented in the work instruction.

Remedial action of the septic system tank and drain field (Areas 5 and 6) located at 600-111 was performed between February 25, 2008 and March 25, 2008. The site was excavated to approximately 4.6 m (15 ft) below grade (at the deepest portion), resulting in a combined volume of approximately 2,755 m³ (3,603 yd³) of material removed and disposed at the Environmental Restoration Disposal Facility. Verification soil samples for the septic system remediation were collected on April 21, 2008.

All test pits/trenches were excavated and sampled in late April 2004 through early May 2004 as specified in the sampling work instruction. During excavation, field monitoring for VOCs was performed and no constituents were detected. In addition, FIDLER radiological surveys were performed during excavation, and no detectable radiological contamination above background was found.

The Contaminants of Concern (COCs) were PCBs, arsenic, cadmium, and lead. Other metals include barium, chromium, copper, manganese, mercury, molybdenum, selenium, silver, vanadium, and zinc. The ROD and the RDR/RAWP identify the contaminants of potential concern (COPCs) as "undetermined radionuclides." Review of the historical information and process knowledge during planning for confirmatory sampling resulted in the following list of COPCs: isotopic plutonium, americium-241, gamma-emitting radionuclides, polychlorinated biphenyls (PCBs), inductively coupled plasma (ICP) metals, mercury, and semivolatile organic compounds (SVOCs). Although asbestos was a COPC, it was only to be sampled if suspect asbestos material was observed during sampling activities. Volatile organic compounds (VOCs) were not COPCs; however, field screening using an organic vapor meter was performed during excavation. From the work instruction if field-detectable VOCs were found, volatile organic analysis would be added to the sample analyses. During the excavation and sampling activities, the organic vapor meter did not indicate the presence of VOCs.

The confirmatory samples were analyzed by offsite laboratories using EPA-approved analytical methods. After sampling was completed, all of the laboratory data from one sampling data group were validated to level C in accordance with BHI-EE-01, Environmental Investigation Procedures. A data quality assessment (DQA) review was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The results of this review are reported in Appendix B of the RSVP.

These results illustrate that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) The UPR-600-16 and 600-111 waste sites have been evaluated and remediated in accordance with the Remaining Sites ROD and the RDR/RAWP. Confirmatory sampling results for Areas 1, 2, and 3 and radiological surveys performed at the UPR-600-16 waste site supported no action. Only the septic system (tank, drain field, and interconnecting pipeline) required remediation. Statistical sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Accordingly, an interim closure reclassification is supported for 600-111 and UPR-600-16 waste sites. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

Code: 600-146	Classification: Accepted
Names: 600-146; Steel Structure on Northwest Side of Gable Mountain	Reclassification: Interim Closed Out (7/21/2010)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site includes a steel structure constructed of steel "I" beam and "L" beams. The interior of the structure contains stainless steel piping running throughout. Metal grating is located on three levels of the structure. The structure appears to be laying in a horizontal position. Debris observed laying around the structure includes stainless steel pipe, metal rings, metal boxes, empty cans and wood. Two earth berms are located just east of the metal structure. To the east of the berms is a small concrete pad approximately 1.5-1.8 meters (5-6 feet) square. There is a pile of lumber near the metal structures. Some of the lumber has shingles attached. This could be the remains of a small building associated with the concrete pad. There is a small, 5.1-7.6 centimeters (2-3 inches) in diameter, area of discolored soil containing metal fragments and charred wood.
Location:	The site is located on the north side of Gable Mountain and just south of the dirt road that runs east west along the north side of Gable Mountain. The site is best accessed by turning east just north of milepost 2 on Route 4 North. Continue east on the paved road until the road begins to turn up the mountain. At this point, continue straight ahead on the dirt road which continues east along the mountain. The site is located approximately 1.9 miles from Route 4 North. The site falls along a section of the dirt road that is bounded by signs reading "Hazardous Area, Keep Out - Authorized Personnel Only".
Waste Type:	Equipment
Waste Description:	The waste is a steel structure, stainless steel piping, metal parts, metal fragments, and the lid from a military type ammunition can (no label).
Closure Info:	Evaluation results of the site have resulted in reclassification to Interim Closed Out. Based on RESidual RADioactivity (RESRAD) modeling discussed in Appendix C of the Remedial Design Report/Remedial Action Work Plan for the 100 Area, DOE/RL-96-17, Rev. 6 (RDR/RAWP), constituents with a distribution coefficient of 7.2 mL/g or greater are not

predicted to migrate through a vadose zone of this thickness and reach groundwater within 1,000 years. Therefore, the results of waste characterization sampling at the waste site are predicted to be protective of groundwater and the Columbia River.

A radiological survey was conducted in September 2009 to support characterization of the waste site, and no radiological activity above background was indicated. Four waste characterization samples were collected in January 2010 to support creation of a waste disposal profile. In April and May 2010, Field Remediation loaded out the sheared steel, wood, and the underlying soil, and then bladed the area flat. The wood debris went to ERDF and the steel structure was recycled per WCH.

Waste characterization sampling results found no constituents exceeding direct exposure remedial action goals (RAGs), and the only contaminants exceeding cleanup levels for protection of groundwater or protection of the Columbia River were copper, lead, nickel, zinc, and aroclor-1254. The residual concentrations of these exceeding constituents are not expected to migrate more than 3 m (9 ft) vertically in 1,000 years (based on the distribution coefficient [Kd] of copper, the contaminant exceeding the RAGs with the lowest Kd of 22 mL/g).

Although the groundwater table is not characterized in detail on Gable Mountain, the vadose zone beneath the waste site was determined using data from wells closest to the waste site, some of which were decommissioned in 1995. The vadose zone beneath the waste site is approximately 10.5 m (34.4 ft) thick. Based on RESidual RADioactivity (RESRAD) modeling discussed in the RDR/RAWP, constituents with a distribution coefficient of 7.2 mL/g or greater are not predicted to migrate through a vadose zone of this thickness and reach groundwater within 1,000 years. Therefore, the results of waste characterization sampling at the 600-146 waste site are predicted to be protective of groundwater and the Columbia River.

Code: 600-149	Classification: Accepted
Names: 600-149; 600-54; 661 Complex; Rifle and Pistol Range; Small Arms Range	Reclassification: Interim Closed Out (11/15/2011)
Type: Military Compound	Start Date:
Status: Inactive	End Date:
Description:	The site consisted of two subsites: the first was the Range complex which included a Range House Building , Well Pump House, and four firing ranges. The second subsite consisted of the berm located behind the pistol/rifle range area. Both subsites have been investigated and Interim Closed Out.
Location:	The site is located north of the east end of Gable Mountain. It is west of Route 2 North and the Hanford Airport.
Process Description:	The complex operated from the mid-1940's through the 1950's as a practice range for handguns, rifles, shotguns, machine guns, hand grenades, smoke bombs, and other small arms and incendiary devices. Complete information on all types of ordnance used is not readily available. The site was known as the "Machine Gun Range" and contained a club house, a pistol range, a machine gun range and a Tommy gun range. The club house was a wood frame structure, with gypsum board siding that had lighting, water, and heat. The pistol range had a gravel and sand, oiled, rolled surface and contained targets and stands. The machine gun and Tommy gun ranges had the same surface as the pistol range, and had moving targets.
Waste Type:	Ordnance
Waste Description:	Lead bullets and spent cartridges are found throughout the area. Grenade canisters have also been found in the area.

Waste Type: Asbestos (non-friable)
Waste Description: The site contains transite piping remnants.

Waste Type: Misc. Trash and Debris
Waste Description: The site contains miscellaneous trash scattered about the site.

This Site has the Following SubSites:

Code: 600-149:1
Names: 600-149:1; Rifle and Pistol Range; Small Arms Range
Code: 600-149:2
Names: 600-149:2; Berm Behind the Pistol/Rifle Range

Code: 600-149:1	Classification: Accepted
Names: 600-149:1; Rifle and Pistol Range; Small Arms Range	Reclassification: Interim Closed Out (11/15/2011)
Type: Military Compound	Start Date:
Status: Inactive	End Date:

Description: The Range complex consisted of a Range House Building , Well Pump House, and four firing ranges. The entire complex was 381 meters (1,250 feet) by 555 meters (1,820 feet) and encompasses approximately 52 acres.. and was surrounded on three sides by a Type No 1, three-strand, barbed wire fence. (Gable Mountain formed a natural access barrier on the fourth side.) The ranges were of four different types: a regular Army pistol range, a Federal Bureau of Investigation "killer course" range (also known as the "special range"), a submachine gun range, and "walk and draw" pistol range. The first two ranges were covered with a 5.1-centimeter (2-inch) thick bituminous road mix, and the latter two ranges were equipped with manually operated, moving targets. The Range House Building was located on the opposite side of the access road from the ranges and contained a conference room, equipment storage room, office, rest room, and three brick chimneys for stove heating purposes. The small Well Pumphouse pit was constructed of reinforced concrete and contained a hatch in the roof for the maintenance of pumping equipment.

Field surveillance activities conducted June 17, 1996 at the site revealed several 19 or 23-liter (5 or 6-gallon) drums (riddled with bullet holes), smoke grenade canisters (discharged and bullet riddled), bullet casings, suspected moving target devices, and concrete pads to the west of the site. Additionally, the site is demarcated by a wood post and barbed wire enclosure. The enclosure fenced three sides of the range and appeared to have been posted with warning signs. The signs, however, are no longer readable and consist of rectangular wooden postings attached to some of the remaining wooden fence posts. The fence appeared to be open on the hillside. Much of the fence is down and some of the wire sections have been removed leaving the posts standing. Portions of the old irrigation canal, at the base of the hillside, have been filled with soil apparently to give access to targets placed on the hillside. Rubble, wire, and transite pipe are scattered about the Range Complex site.

The waste site shape was modified on 2/2/2011 so that the western boundary followed the irrigation canal. This geographic feature served as a natural boundary for activities associated with the small arms range and is more appropriate than the arbitrary rectangle that was drawn previously. The tract of land that was cut out of 600-149:1 has been reassigned to 600-349.

Location: The area is approximately 19 miles north of Richland, at the foot of the northeastern slope of Gable Mountain at 46 degrees 35'49" north latitude and 119 degrees 26'07" west longitude.

Closure Info: The objective of the 600-149 Munitions or Explosives of Concern (MEC) investigation and clearance project was to perform a surface sweep, subsurface characterization to determine the nature and extent of metallic anomalies, and subsurface clearance of MEC and Material Suspected of Potentially Presenting and Explosive Hazard (MPPEH) hazards within limitations defined for the project (> mV reading).

The project objectives were met. Based on the work completed, there is a high degree of confidence that the probability of encountering MEC or MPPEH during future surface and subsurface activities within the areas surveyed and anomalies dug is very low. Additionally, the ordnance-related risk is also considered low based on the type of ammunition now known to have been utilized at the range.

A surface sweep and clearance of the 47 acres was conducted between 13 October and 2 November 2010, as an initial phase of the Unexploded Ordnance (UXO) characterization activities. A portion of the 7.2 acres that had been cleared in 2008 was used for support zone facilities.

A GPO area was prepared prior to the DGM production survey to test and confirm combined equipment and operator system performance. A seeded DGM survey of the 100-ft by 100-ft GPO grid was conducted on 3 November 2010. After analyzing the results of the GPO and initial dig of selected anomalies in the grid, a threshold value of 5 mV was determined to be the appropriate threshold criteria for selecting anomaly dig targets. Field teams conducted DGM surveys of each grid between 4 November and 17 December 2010. DGM was conducted for the purpose of locating geophysical anomalies in the subsurface that could potentially be MEC.

Dig sheets were provided to the intrusive investigation teams for identification and/or removal. The sifting stage of anomaly investigation and clearance in HD grids commenced on 17 January 2011 and was completed on 22 March 2011.

An area near the northeast corner of the Site was thought to be a munitions burial pit, based on unsubstantiated historical information. The dig team sifted soil from an area approximately 20 ft by 10 ft to an average depth of approximately 24 inches.

The SubSite is Part Of:

Code: 600-149

Names: 600-149; 600-54; 661 Complex; Rifle and Pistol Range; Small Arms Range

Code: 600-149:2

Classification: Accepted

Names: 600-149:2; Berm Behind the Pistol/Rifle Range

Reclassification: Interim Closed Out (1/20/2009)

Type: Military Compound

Start Date:

Status: Inactive

End Date:

Description: The subsite consisted of the berm behind the pistol/rifle range, part of the 100-IU-6 Operable Unit, located north of the east end of Gable Mountain, west of Route 2, and northwest of the former Hanford town site.

Closure Info: The Remaining Sites Verification Package, (RSVP-2008-049), has documented that the 600-149:2 subsite, the berm behind the pistol/rifle range, meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

Remedial action at the waste site was performed in September 2008. As part of the remedial

action a portion of the surrounding area was evaluated for unexploded ordnance (UXO) by digital geophysical mapping (DGM) using an electromagnetic detection instrument with a geographical mapping system to obtain positioning data over an area of approximately 2.9 hectares (7.2 acres) (TerranearPMC 2008). This area included the boundary of the current remediation excavation, as well as the area to the northeast that was needed to support the site remediation.

Due to concerns that UXO may be present, the soil berm was inspected prior to the onset of remedial action. Three UXO items were discovered at a depth of approximately 18 cm (0.5 ft) during this inspection. These included a rifle grenade, a fuse from a smoke grenade, and a riot shell (smoke round). Approximately 1.0 m (3 ft) of material was removed from the face of the berm and 0.6 m (2 ft) of soil from the base/toe of the berm. The resulting 826 bank cubic meters (1,080 bank cubic yards) of soil was disposed at the Environmental Restoration Disposal Facility (ERDF).

Due to concerns that additional UXO may be present in the soil berm, direct load-out of soil for shipment to the ERDF was not performed. The material removed from the berm was staged for inspection of additional UXO and then sent to ERDF.

The contaminants of potential concern for verification sampling included antimony, lead, and tin. Lead present at concentrations exceeding background will be evaluated in the context of additional lines of evidence for ecological effects as part of the final closeout decision for this site.

Verification sampling for the subsite was performed in October 2008 to collect data to determine if the RAGs had been met. Verification soil samples were analyzed using EPA-approved analytical methods. The laboratory-reported data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented in Appendix A of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This subsite does not have a deep zone component; therefore, no deep zone institutional controls are required. Statistical sampling to verify the completeness of remediation was performed and analytical results for the decision unit were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

The SubSite is Part Of:

Code: 600-149

Names: 600-149; 600-54; 661 Complex; Rifle and Pistol Range; Small Arms Range

Code: 600-178

Classification: Accepted

Names: 600-178; 213-J and 213-K Guard House Toilet Pit **Reclassification:** Interim Closed Out (7/19/2011)

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date:

Description: The site is a toilet pit opening within a 4.3 by 4.9-meter (14 by 16-foot) concrete pad that is the remains from the guard house. Apparently the opening is to a sanitary sewage pit located beneath the pad. A lid to the septic pit is next to the concrete pad. No evidence of a sewage distribution system (septic tank or tile field) is apparent.

Location: Vaults parking lot.

Process Description: This unit received human sewage from a guard house.

Waste Type: Sanitary Sewage

Waste Description: The waste was human sewage.

Closure Info: Remediation occurred at the 600-178 waste site on November 4 through 16, 2010. The concrete toilet system was removed entirely, along with a protruding pipe and sludgy material underlying the pipe. The concrete structure had dimensions of approximately 6 by 6 by 1.2 m (20 by 20 by 4 ft).

The excavated concrete, pipe, and associated soils were disposed at the Environmental Restoration Disposal Facility.

Code: 600-186	Classification: Accepted
Names: 600-186; Hanford Construction Camp Septic Tanks and Sewage Treatment Plants	Reclassification: No Action (9/14/2011)
Type: Trench	Start Date: 1/1/1944
Status: Inactive	End Date:

Description: This site has been remediated. This waste site includes all the septic tanks as well as the sewage treatment plants at the Hanford Construction Camp. Five components of this site have been identified in the field and mapped.

Three former sewage treatment plant sites were identified from basins that remain at the sites. The northernmost site was the largest and deepest and appears as a trench. The trench begins at a group of trees and extends to the river, cutting into the river bank. Small pieces of concrete, concrete pipe, vitrified clay pipe and wood were observed around the trench. The bottom of the trench has fine soil that did not appear to be sludge derived from sewage. The second trench, just south of the first trench was shallower and not as obvious. Small pieces of concrete were observed surrounding the trench. A layer of sludge like material was observed on the east side of the trench. The southernmost trench, was obscured by blown in tumbleweeds. The outline of a foundation was found on the north side of the most southern trench. One septic tank was found between this trench and the turn off to the Honey Dump site. A large area west of the sewage treatment plants was searched for septic tanks, but none were found.

Location: The sewage treatment plants were located on the river side of "A" Avenue between Fourth and Sixth Streets East and at Tenth Street East. Two of the treatment plants are located near the east end of 5th Street East. The southernmost treatment plant is located near the intersection of Tenth Street East and "A" Avenue, approximately 216 meters (709 feet) north of Well #A8744.

Process Description: The Hanford Construction Camp was supported by a system of underground sanitary waste treatment facilities sufficient to support the 50,000 employees who lived there. These facilities consisted of 80 septic tanks and 3 waste treatment plants, in addition to an unspecified number of septic tanks and drain fields that predate the construction camp but were used for camp purposes. DuPont (1945) describes three sewage treatment plants for the camp. Each included a system of septic tanks and a waste treatment facility, connected by 10.2 to 76.2-centimeter (4 to 30-inch) vitrified clay or concrete pipe. Septic tanks were "standard design, three pass baffle, wooden box type" varying in size from 1.2 by 4.9 by 1.8 meters up to 7.3 by 18.3 by 3.05 meters (4 by 16 by 6 feet up to 24 by 60 by 10 feet). Although these dimensions are confusing, it is clear that some tanks were quite large and that a significant potential for surface collapse may exist at these sites. The septic tanks were scattered throughout the Camp Area at required

locations (DuPont 1945). At the beginning of Hanford Camp, wooden grease traps were provided to separate the grease from the main sewage going to the settling basins. Serious trouble resulted when the grease traps were inadequate both in size and design. Further steps to control the grease build-up at the settling basins had to be taken. Garbage from the mess hall kitchens was also a problem, so a device to collect both grease and garbage was required.

Related Sites/ Structures: The site was related to the Hanford Construction Camp and the need for sanitary facilities. Septic tanks were scattered throughout the Camp Area at required locations for the retention of sewage. The septic tanks were related to waste treatment facilities where sewage was collected, treated and disposed.

Waste Type: Sanitary Sewage

Waste Description: All sewage carried by the three sewage disposal systems was chlorinated.

Closure Info: This site is a confirmatory sampling site that did not need remediation. The confirmatory sampling results support a reclassification of the 600-186 waste site to No Action.

Code: 600-202

Classification: Accepted

Names: 600-202; Hanford Townsite Four Burn and Burial Pits

Reclassification: Interim Closed Out (5/25/2011)

Type: Burn Pit

Start Date:

Status: Inactive

End Date:

Description: The site includes four burn and burial pits located close together and arranged to form a single rectangle that lies in the northwest to southeast direction. Each rectangle is 150 meters (492 feet) by 75 meters (246 feet) by 6 to 12 meters (20 to 39 feet) deep. The total area is provided for the site dimensions. The site is documented as four burn and burial pits combined to form a single rectangle that trends northwest to southeast, located 550 meters southeast of the intersection of Avenue A and 9th Street within the Hanford Construction Camp. The site rectangle is 150 by 75 meters and is 6 to 12 meters deep. The waste contains miscellaneous trash. Bulldozer marks suggest that debris was covered. There are extensive signs of burning over the site. The 1999 walkdown that found the southwest pit partially backfilled. Two metal pipes (approximately 5 centimeters in diameter) with valves extending into the southeast pit from the east (river) side were located near the top of the pit. No pipes could be seen extending from the riverbank, but they may have been obscured by vegetation. No soil discoloration or vegetation stress was apparent.

Location: The site is located southeast of the Hanford Construction Camp. It is 550 meters (1805 feet) southeast of the intersection of Avenue A and 9th Street and southeast of the southernmost sewage treatment plant (600-186).

Waste Type: Misc. Trash and Debris

Waste Description: The waste is miscellaneous trash and debris and includes such items as fire-cracked rock, glass, china, jars, bottles, metal, kitchen materials, broken toilet bowl, and other materials. Bulldozer marks suggest that debris has been covered. The pits vary in depth, apparently because of varying levels of backfill. There is the potential that paints and solvents were burned in the pits. The site needs further evaluation.

Closure Info: On November 19, 2009, several waste characterization samples were collected from the surface of the backfilled confirmatory test trenches 1 through 4. Random aliquots of surface soil were collected from the location of the trenches. The results of the waste characterization samples are provided in Appendix A of the RSVP.

Excavation began on March 9, 2010, and was completed on April 26, 2010. Photographs of the remedial action are provided in Appendix B of the RSVP. On March 16, 2010, white ash material, later determined to be mussel shells, were encountered by field remediation personnel. Cultural resources personnel were permanently staged at the waste site for the remainder of the excavation to oversee the handling of the shells.

Several batteries were found during excavation. The batteries were drummed and a sample was collected on March 31, 2010 from random aliquots of soil beneath one of the batteries at WSP coordinates N 137866, E 588493. The results of this sample, J19VY1, are provided in Appendix A.

On April 8, 2010, a 132-L (35-gal) drum filled with dirt was encountered at WSP coordinates N 137878, E 588439 and was stockpiled for disposal at the Environmental Restoration Disposal Facility (ERDF). On April 14, 2010, a 0.18-L (6-oz) bottle with a small amount of white liquid inside was also found. The contents of the bottle were characterized and are included with other sample results in Appendix A.

Several in-process samples were taken from the excavated areas on May 5, 2010. Multi-aliquot soil samples were taken from the areas as presented in Table 2. On May 17, 2010, the battery found on the surface during area 5 confirmatory sampling was removed along with surrounding soil and sent to the ERDF. The battery was located at WSP coordinates N 137901, E 588495. At the completion of all remedial activities, the depth of both excavations was approximately 4.8 m (15.7 ft).

Code: 600-204	Classification: Accepted
Names: 600-204; Hanford Townsite Burn and Burial Trench	Reclassification: Interim Closed Out (9/16/2003)
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The site was a long, narrow trench that was used as a burn pit. The trench was oriented north to south.
Location:	The site was located approximately 500 meters (1,641 feet) southwest of the intersection of Route 1 and Route 2 North and approximately 200 meters (656 feet) west of the United States Government Railroad.
Process Description:	The area was used for dumping and burning trash.
Waste Type:	Misc. Trash and Debris
Waste Description:	The trash was miscellaneous debris, including metal and glass fragments, nails, fire-scarred rock, cans, and bottles. The waste has been placed in a discernible unit.
Closure Info:	In April 2003, a field walkdown was conducted to finalize contaminants of potential concern, identify sample locations, and identify sample types for development of a sampling design. Subsequently, remedial action activity was implemented to remove identified waste material and debris from the site for disposal at the Environmental Restoration Disposal Facility. The maximum detected results and a composite sample of underlying soil at the location suspected of having the greatest potential for residual contamination were used to support site reclassification.

The cleanup verification samples were analyzed by offsite contract laboratories using approved U.S. Environmental Protection Agency analytical methods. A data quality assessment was performed to compare the sampling approach and resulting analytical data with the sampling

and data quality requirements specified by the project objectives and performance specifications. The data quality assessment determined that the data are of the right type, quality, and quantity to support site verification decisions within specified error tolerances. The cleanup verification sample results are stored in the Hanford Environmental Information System (HEIS) and are summarized in the data summary tables.

In accordance with this evaluation, the cleanup verification sample results of underlying soil, support the interim closure of the 600-204 site. Residual material at the site achieves the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17), implemented for the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 100-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). Residual soil concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 600-205	Classification: Accepted
Names: 600-205; Hanford Townsite Landfill 2	Reclassification: Interim Closed Out (5/25/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description:	The site is a large area that appears to have been used for dumping of domestic refuse during an early time period, probably pre-1944. The exact boundaries are unknown. Historical photographs show a half dozen buildings on the site that appear to be vehicle maintenance facilities. An onsite inspection in 2003 describes surface debris associated with vehicle maintenance. Photographs P956, P957, P1893, P6148, and P960 (January 1944) depict seven or more buildings with multiple vehicles and scattered parts on the site, apparently a maintenance/repair facility.
Location:	The site is located southeast of the intersection of Route 2 North and Route 11A and north of Lake Hanford. The area is relatively flat and appears to have been mechanically leveled with scattered small debris and building detritus.
Related Sites/ Structures:	The site is related to Hanford Townsite Landfill 1 that is located south of Lake Hanford. It is also possible that Lake Hanford may have been located on the landfill
Waste Type:	Misc. Trash and Debris
Waste Description:	The waste is domestic debris, including heavy concentrations of tin cans, bottles, auto parts, and other domestic refuse. Bulldozing marks are evident, and it appears that landfill debris has been covered over and that additional concentrations may exist below grade.
Closure Info:	The 600-205 waste site is identified as a candidate site for confirmatory sampling in the Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision, Hanford Site, Benton County, Washington (EPA 2009). Based on the results of confirmatory sampling, area 2 of the waste site was recommended for remove, treat, and dispose.

Remediation occurred at area 2 of the 600-205 waste site from February 24 to March 2, 2010. The excavated area was approximately 115 m² (1,240 ft²). The waste was staged to the southwest of the excavation, and had an area of approximately 80 m² (860 ft²). Photographs of the waste site are provided in Appendix B of the RSVP.

On March 15, 2010, one in-process sample, J19V17, was collected from the bottom of the waste site and the sidewalls of the excavation. The sample results were provided in Appendix C

of the RSVP.

The battery and surrounding soil found in area 1 was drummed on May 17, 2010. The WSP coordinates for the battery were N 137901, E 588495. Per regulatory agreement, no sample was collected from this location.

Code:	600-208	Classification:	Accepted
Names:	600-208; Hanford Construction Camp Boiler House Ponds	Reclassification:	No Action (8/12/2004)
Type:	Pond	Start Date:	
Status:	Inactive	End Date:	
Description:	Site 600-208 represents a series of liquid disposal ponds or trenches associated with the Hanford Construction Camp steam plants. The ponds were estimated to be roughly 6 meters (20 feet) by 20 meters (60 feet) and 1.5 meters (5 feet) deep.		
Location:	The sites were found within or close to the Hanford Construction Camp. The locations of thirteen of the eighteen ponds have been identified using photos of the camp. The ponds are located as follows: (1) between 1st and 2nd Street and east of Avenue A; (2) between 2nd Street and 3rd Street and east of Avenue A; (3) between 3rd Street and 4th Street and east of Avenue A; (4) between 4th Street and 5th Street and east of Avenue A; (5) at 6th Street and east of Avenue A; (6) between 7th Street and 8th Street and east of Avenue A; (7) east of 9th Street and northeast of the intersection of 9th Street and Avenue B; (8) approximately 250 meters (820 feet) northeast of the intersection of 7th Street and Avenue E; (9) between 5th Street and 6th Street and north of Avenue C; (10) between E Avenue and D Avenue and north of 4th Street; (11) between 3rd Street and 4th Street and south of Avenue C; (12) between 2nd Street and 3rd Street and south of Avenue C, close to the intersection of 3rd Street and Avenue C; (13) approximately 250 meters (820 feet) south of the intersection of Route 2 North and Doolittle Avenue on the east side of Route 2 North.		
Process Description:	Eighteen boiler houses were used at the Hanford Construction Camp to generate steam. Each boiler house was described as "100 boiler horse power, hand fired, horizontal return tubular boilers, (arranged) either singly or in batteries". Each site had from one to eight boilers. Each had a wood-stave soft water storage tank and an open-boxed pit for the sluicing and removal of ashes by means of clamshell crane. Some had liquid waste disposal ponds. The ponds were designed to receive wastewater and chemicals used for the boiler houses (steam or power plants) at the Hanford Townsite Construction Camp. The steam produced was primarily for heating purposes. The ponds or trenches, referred to as Liquid Seep Ponds, were believed to have existed at each fixed steam plant (boiler house) and to have received waste common to the boilers.		
Waste Type:	Water		
Waste Description:	The waste was waste water and chemicals. The chemical released most frequently to the ponds would have been "water softener brine". There are no obvious signs of contamination.		
Closure Info:	In accordance with the Remaining Sites Verification Package (RSVP) for the site evaluation, a reclassification status of no action has been determined for the 600-208 Hanford Construction Camp Boiler House Ponds site. The site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (EPA 1999). The results of the evaluation showed that the site was not used for disposal of hazardous/dangerous materials. The site will support future		

unrestricted land uses that can be represented (or bounded) by a rural-residential scenario and no institutional controls are required.

Code: 600-239 **Classification:** Accepted

Names: 600-239; 615 Hot Mix Plant Debris; Debris in Pit 16; Hanford Aggregate Pit Debris **Reclassification:** No Action (5/31/2001)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site contains several large wooden beams, wooden pallets, large diameter steel pipe, steel plates, large mesh steel screens and rubber tires. All wastes observed were lying in neat piles on the ground surface within Pit #16; none appeared to be partially buried. One stacked pile of metal posts had some radiation warning signs still attached. There is a spot of old paint, about one square foot, in the pit. The site is naturally revegetating, with the sides regrowing grasses and rabbitbrush but the bottom still mostly barren.

Location: The site is located approximately 200 meters (656.2 feet) west of Route 2 North and approximately 1.3 kilometers (0.8 miles) north of Route 11A. The approach to the site is marked with signs on the west side of Route 2 North just south of milepost 1.

Process Description: This gravel pit was related to the adjacent Hot Mix Plant (600-20, reclassified as Rejected). However, some of the stored materials in the Pit may have come from other projects.

Related Sites/Structures: Site 600-240 is similar debris in adjacent Pit 17, and site 600-20 is the Hot Mix Plant location, which is the source of much of the debris in both sites.

Waste Type: Misc. Trash and Debris

Waste Description: The waste is wood, metal and rubber.

Code: 600-280 **Classification:** Accepted

Names: 600-280; Hardened Tar Site **Reclassification:** Interim Closed Out (4/26/2011)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 10 meter (33 foot) by 6 meter (19 foot) area where tar was dumped.

Location: The site is located south of the intersection of Route 1 and Route 2N. It is east of 600-204 and approximately 22 meters west of the north-south dirt access road, that is west of the railroad tracks.

Waste Type: Construction Debris

Waste Description: The site has patches of hardened tar.

Closure Info: On January 13, 2010, two waste characterization samples were collected. The first sample, J19DY7, was collected from the hardened tar/asphalt material. The second sample, J19D16 and its duplicate, J19D17, were collected from a mixture of the soil and charred material. These samples were analyzed for inductively coupled plasma (ICP) metals, mercury, pesticides, herbicides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and semivolatile organic compounds (SVOCs). The waste characterization sample results show that only lead and TPH exceed cleanup levels.

Remediation was started and completed on February 23, 2010. The depth of the main excavation is less than 0.3 m (1 ft) and is approximately 28 m (92 ft) in diameter. All waste material was directly loaded into cans for disposal at the Environmental Restoration Disposal Facility (ERDF).

On March 15, 2010, one composite in-process soil sample was collected from the excavated area. Several aliquots of soil were collected from across the surface of the excavated area and combined into one sample for analysis. The in-process sample was analyzed for ICP metals, mercury, TPH, pesticides, herbicides, PCBs, VOCs, and SVOCs.

Code: 600-313 **Classification:** Accepted
Names: 600-313; Burned Area and Oil Stained Soil **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of potentially contaminated soil that is either an oil stain or burned area.
Location: The site is located approximately 533.26 meters (0.33 miles) north and 288.81 meters (0.2 miles) west of the intersection of F Avenue and Route 2. Coordinates for the site are E580355.81, N145430.68.
Waste Type: Soil
Waste Description: Contaminants of potential concern include TPH, PAH, PCBs and ICP metals.

Code: 600-314 **Classification:** Accepted
Names: 600-314; Telecommunication Components **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of scattered debris and the underlying soils at locations where probable telecommunications components lie on the surface. The site components have hardened black liquid on the outside surface and leaking out of them.
Location: The coordinates for the site as are follows: E580364.1, N145210.4 E580620.6, N144976.8 E581229.8, N143485.8 E581233.1, N143389.9 E582771.6, N140100.2
Process Description: These components appear to be junctions or splice boxes for telecommunication cables.
Waste Type: Equipment
Waste Description: The waste may be abandoned telecommunications equipment. The components may contain PCB from possible oil inside, suspect asbestos in outer asphaltic covering and possible lead in soldered joints.

This Site has the Following SubSites:

Code: 600-314:1
Names: 600-314:1; Telecommunications Component Area 1
Code: 600-314:2
Names: 600-314:2; Telecommunications Component Area 2
Code: 600-314:3
Names: 600-314:3; Telecommunications Component Area 3

Code: 600-314:4
Names: 600-314:4; Telecommunications Component Area 4
Code: 600-314:5
Names: 600-314:5; Telecommunications Component Area 5

Code: 600-314:1
Names: 600-314:1; Telecommunications Component Area 1
Type: Unplanned Release
Status: Inactive
Classification: Accepted
Reclassification: None
Start Date:
End Date:

Description: The subsite is a probable telecommunications component (junction or splice box) that has hardened black liquid (possibly tar) on the outside surface. The suspect telephone communication components measure 40.6 cm by 22.9 cm (16 by 9 in) in diameter. The site is located approximately 41 m (135 feet) east of Route 2 North and 125 m (410 feet) southeast of the intersection with Route 1.

The SubSite is Part Of:

Code: 600-314
Names: 600-314; Telecommunication Components

Code: 600-314:2
Names: 600-314:2; Telecommunications Component Area 2
Type: Unplanned Release
Status: Inactive
Classification: Accepted
Reclassification: None
Start Date:
End Date:

Description: The subsite is a probable telecommunications component (junction or splice box) that has hardened black liquid (possibly tar) on the outside surface. The suspect telephone communication components measure 40.6 cm by 22.9 cm (16 by 9 in) in diameter. The site is located approximately 25 m (82 ft) west of F Avenue and 53 m (174 ft) north of Route 2 North.

The SubSite is Part Of:

Code: 600-314
Names: 600-314; Telecommunication Components

Code: 600-314:3
Names: 600-314:3; Telecommunications Component Area 3
Type: Unplanned Release
Status: Inactive
Classification: Accepted
Reclassification: None
Start Date:
End Date:

Description: The subsite is a probable telecommunications component (junction or splice box) that has hardened black liquid (possibly tar) on the outside surface. The suspect telephone communication components measure 40.6 cm by 22.9 cm (16 by 9 in) in diameter. The site is located approximately 868 m (0.5 miles) west of Route 2 North and 4.7 Km (2.9 miles) north of Route 11A.

The SubSite is Part Of:

Code: 600-314
Names: 600-314; Telecommunication Components

Code: 600-314:4
Classification: Accepted
Names: 600-314:4; Telecommunications Component
Reclassification: None
Area 4
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: The subsite is a probable telecommunications component (junction or splice box) that has hardened black liquid (possibly tar) on the outside surface. The suspect telephone communication components measure 40.6 cm by 22.9 cm (16 by 9 in) in diameter. The site is located approximately 955 m (0.6 miles) west of Route 2 North and 4.6 Km (2.9 miles) north of Route 11A.

The SubSite is Part Of:

Code: 600-314
Names: 600-314; Telecommunication Components

Code: 600-314:5
Classification: Accepted
Names: 600-314:5; Telecommunications Component
Reclassification: None
Area 5
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: The subsite is a probable telecommunications component (junction or splice box) that has hardened black liquid (possibly tar) on the outside surface. The suspect telephone communication components measure 40.6 cm by 22.9 cm (16 by 9 in) in diameter. The site is located approximately 1.6 Km (1.0 miles) west of Route 2 North and 1.3 Km (0.8 miles) north of Route 11A.

The SubSite is Part Of:

Code: 600-314
Names: 600-314; Telecommunication Components

Code: 600-315
Classification: Accepted
Names: 600-315; Black Granular Stain
Reclassification: No Action (5/25/2011)
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: The site consists of underlying soils with a black granular stain surface area. There is very little vegetation in the affected area.

Location: The site is located approximately 487.02 meters (0.3 miles) north and 31.21 meters (102 feet) east of the intersection of F Avenue and Route 2.

Code: 600-317
Classification: Accepted
Names: 600-317; Battery and Burn Area
Reclassification: None
Type: Burn Pit
Start Date:

Status: Inactive

End Date:

Description: The site is described as scattered surface debris consisting of wet cell battery plates, burned material, and a white granular substance. It is located in the bottom of a borrow pit.

Location: The site is located approximately 342.15 meters (0.2 miles) south and 459.72 meters (0.3 miles) west of the intersection of F Avenue and Route 2. The coordinates for the site are E580184.90/N144555.27.

Waste Type: Batteries

Waste Description: Lead and sulfuric acid from the batteries may be present.

Code: 600-318

Classification: Accepted

Names: 600-318; Wet Cell Batteries

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is described as wet cell battery debris lying on the ground surface at five locations.

Location: The coordinate for the subsites are:

E580204.7/N144950.3
E580765.7/N144702.4
E584263.8/N140330.5
E584421.9/N139110.4
E584684.6/N138951.9

Process Description: Area 1, at E580204.7/N144950.3, consists a 3 meter (10 feet) diameter area of wet cell battery debris.

Area 2, at E580765.7/N144702.4, consists of a 3 meter (10 feet) diameter area of wet cell battery debris; it appears to have been car battery.

Area 3, at E584263.8/N140330.5, consists of lead battery debris in an area less than 1 meter (3 feet) in diameter next to a 4 meter by 15 meter (13 by 50 feet) concrete slab with smaller slab, there is also a 3.8 centimeter (1.5 inch) iron pipe and automotive debris present.

Area 4, at E584421.9/N139110.4, The identified feature consists of lead battery debris in area less than 1 meter (3 feet) in diameter.

Area 5, at E584684.6/N138951.9, The site consists of a 4 meter by 8 meter (13 by 26 feet) automotive shop dump area with lead battery debris.

Waste Type: Batteries

Waste Description: There may be lead and battery acid present at the sites.

Description:

This Site has the Following SubSites:

Code: 600-318:1

Names: 600-318:1; Wet Cell Batteries in Area 1

Code: 600-318:2

Names: 600-318:2; Wet Cell Batteries in Area 2

Code: 600-318:3

Names: 600-318:3; Wet cell Batteries in Area 3

Code: 600-318:4
Names: 600-318:4; Wet cell Batteries in Area 4
Code: 600-318:5
Names: 600-318:5; Wet cell Batteries in Area 5

Code: 600-318:1 **Classification:** Discovery
Names: 600-318:1; Wet Cell Bateriaes in Area 1 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The waste siteconsists of a 3 meter (10 feet) diameter area of wet cell battery debris.
Location: Area 1 is located at E580204.7/N144950.3.

The SubSite is Part Of:

Code: 600-318
Names: 600-318; Wet Cell Batteries

Code: 600-318:2 **Classification:** Discovery
Names: 600-318:2; Wet Cell Batteries in Area 2 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a 3 meter (10 feet) diameter area of wet cell battery debris; it appears to have been car battery.
Location: Area 2 is located at E580765.7/N144702.4.

The SubSite is Part Of:

Code: 600-318
Names: 600-318; Wet Cell Batteries

Code: 600-318:3 **Classification:** Discovery
Names: 600-318:3; Wet cell Batteries in Area 3 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The siteconsists of lead battery debris in an area less than 1 meter (3 feet) in diameter next to a 4 meter by 15 meter (13 by 50 feet) concrete slab with smaller slab, there is also a 3.8 centimeter (1.5 inch) iron pipe and automotive debris present.
Location: Area 3 is at E584263.8/N140330.5.

The SubSite is Part Of:

Code: 600-318
Names: 600-318; Wet Cell Batteries

Code: 600-318:4 **Classification:** Discovery
Names: 600-318:4; Wet cell Batteries in Area 4 **Reclassification:** None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of lead battery debris in area less than 1 meter (3 feet) in diameter.

Location: Area 4 is E584421.9/N139110.4.

The SubSite is Part Of:

Code: 600-318

Names: 600-318; Wet Cell Batteries

Code: 600-318:5

Classification: Discovery

Names: 600-318:5; Wet cell Batteries in Area 5

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of a 4 meter by 8 meter (13 by 26 feet) automotive shop dump area with lead battery debris.

Location: Area 5 is at E584684.6/N138951.9.

The SubSite is Part Of:

Code: 600-318

Names: 600-318; Wet Cell Batteries

Code: 600-319

Classification: Accepted

Names: 600-319; Miscellaneous Debris

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site has areas of surface debris consisting of ferrous metal, stained soil and dried paint. Many items are believed to have supported Army Tent Camp 230. One location consists of a 0.5 by 0.5 meter (2 by 2 feet) wooden lined below grade structure that is 0.5 meters (2 feet) deep. It contains empty paint and paint thinner cans. One empty can of military paint thinner has a date of 1956.

Location: The coordinates for the debris sites are: E580195.5/N144963.8 E581558.7/N142840.4 E585655.5/N139710.0

Waste Type: Misc. Trash and Debris

Waste Description: Sulfur based cutting oils in the metal turnings and lead in the paint may be present.

Description:

This Site has the Following SubSites:

Code: 600-319:1

Names: 600-319:1; Miscellaneous Debris Area 1

Code: 600-319:2

Names: 600-319:2; Miscellaneous Debris Area 2

Code: 600-319:3

Names: 600-319:3; Miscellaneous Debris Area 3

Code: 600-319:1 **Classification:** Accepted
Names: 600-319:1; Miscellaneous Debris Area 1 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a 7 m (23 ft) diameter area of concentrated ferrous metal turnings, broken glass and orange stained soil.
Location: E580196.8 N144963.2
The site is located south of Route 1 and west of Route 2 North.

**Process
Description:**

Waste Type: Soil

**Waste
Description:**

Waste Type: Misc. Trash and Debris

**Waste
Description:**

The SubSite is Part Of:

Code: 600-319
Names: 600-319; Miscellaneous Debris

Code: 600-319:2 **Classification:** Accepted
Names: 600-319:2; Miscellaneous Debris Area 2 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: Miscellaneous Debris Area 2, The subsite consists of a 0.5 by 0.5 m (2 by 2 ft) wooden lined below grade structure that is 0.5 m (2 ft) deep. It contains empty paint and paint thinner cans. One empty can of military paint thinner has a date of 1956.
Location: E581558.1 N142841.0
The site is located west of Route 2 North and north of Route 11A.

The SubSite is Part Of:

Code: 600-319
Names: 600-319; Miscellaneous Debris

Code: 600-319:3 **Classification:** Accepted
Names: 600-319:3; Miscellaneous Debris Area 3 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a small area of suspected dried paint. It is approximately 2 m by 4 m (6 by 13 ft).
Location: E585655.5 N139710.0. The site is located south of Avenue A and west of Division Street in the

Hanford Construction Camp. It is located 90 m (295 feet) west of the Richfield Oil Company Gas Station.

The SubSite is Part Of:

Code: 600-319

Names: 600-319; Miscellaneous Debris

Code: 600-320

Classification: Accepted

Names: 600-320; Oil Stains

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is described as nine areas with petroleum based material released to the ground surface.

Location: The coordinates for the soil stains are:

E580231.4/N144524.1

E581892.6/N142045.3

E583067.60/N140269.38

E583131.98/N140209.13

E583217.14/N140082.43

E583472.12/N140270.74

E585666.2/N140052.5

E587461.7/N137843.3

Process Description: Materials found at these locations suggest that petroleum liquid was dumped from an oil accumulation container or was released from large equipment during lubricant change-out.

Waste Type: Oil

Waste Description: These areas may contain ICP metals, PAHs, TPH and possible PCB contamination.

Waste Type: Soil

Waste Description: The waste is potentially contaminated soil. These sites may contain ICP metals, PAHs, TPH and possible PCB contamination within the release areas.

This Site has the Following SubSites:

Code: 600-320:1

Names: 600-320:1; Oil Stains Area 1

Code: 600-320:2

Names: 600-320:2; Oil Stains Area 2

Code: 600-320:3

Names: 600-320:3; Oil Stains Area 3

Code: 600-320:4

Names: 600-320:4; Oil Stains Area 4

Code: 600-320:5

Names: 600-320:5; Oil Stains Area 5

Code: 600-320:6

Names: 600-320:6; Oil Stains Area 6

Code: 600-320:7
Names: 600-320:7; Oil Stains Area 7
Code: 600-320:8
Names: 600-320:8; Oil Stains Area 8
Code: 600-320:9
Names: 600-320:9; Oil Stains Area 9

Code: 600-320:1 **Classification:** Accepted
Names: 600-320:1; Oil Stains Area 1 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: Oil Stains Area 1: The subsite is a suspected oil dump area that is approximately 3 by 4 m (10 by 13 ft). The soil is crusted and no vegetation is growing in the affected area.

Location: E580231.4 N144522.9
The site is located west of Route 2 North and south of Route 1.

Waste Type: Soil
Waste Location suspected of being contaminated with petroleum products.
Description:

The SubSite is Part Of:

Code: 600-320
Names: 600-320; Oil Stains

Code: 600-320:2 **Classification:** Accepted
Names: 600-320:2; Oil Stains Area 2 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: Oil Stains Area 2: The subsite consists of an oil dump area that is approximately 8 by 5 m (26 by 16 ft). There are 2 oil filters on the ground and the soil is crusted with no vegetation growing in the affected area.

Location: E581895.4 N142044.5
The site is located west of Route 2 North and north of Route 11A.

Waste Type: Soil
Waste Location suspected of being contaminated with petroleum products.
Description:

The SubSite is Part Of:

Code: 600-320
Names: 600-320; Oil Stains

Code: 600-320:3 **Classification:** Accepted
Names: 600-320:3; Oil Stains Area 3 **Reclassification:** None
Type: Unplanned Release **Start Date:**

Status: Inactive

End Date:

Description: Oil Stains Area 3: The subsite consists of a suspected oil and tar dump area that is approximately 3 m (10 ft) in diameter. The soil is crusted and no vegetation is growing in the affected area.

Location: E583068.1 N140269.8
The site is located west of Route 2 North and north of Route 11A.

Waste Type: Soil

Waste Area suspected to be contaminated with petroleum products.

Description:

The SubSite is Part Of:

Code: 600-320

Names: 600-320; Oil Stains

Code: 600-320:4

Classification: Accepted

Names: 600-320:4; Oil Stains Area 4

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: Oil Stains Area 4: The subsite is a suspected oil dump area that is approximately 2 m (6 ft) in diameter. The soil is crusted and no vegetation is growing in the affected area.

Location: E583131.6 N140209.2
The site is located west of Route 2 North and north of Route 11A.

Waste Type: Soil

Waste Location suspected of being contaminated with petroleum products.

Description:

The SubSite is Part Of:

Code: 600-320

Names: 600-320; Oil Stains

Code: 600-320:5

Classification: Accepted

Names: 600-320:5; Oil Stains Area 5

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: Oil Stains Area 5: The subsite is a suspected oil dump area that is approximately 2 m (6 ft) in diameter. The soil is crusted and no vegetation is growing in the affected area.

Location: E583217.0 N140082.5
The site is located west of Route 2 North and north of Route 11A.

Waste Type: Soil

Waste Location suspected of being contaminated with petroleum products.

Description:

The SubSite is Part Of:

Code: 600-320

Names: 600-320; Oil Stains

Code: 600-321:4
Names: 600-321:4; Suspect ACM Sites Area 4

Code: 600-321:1
Classification: Accepted
Names: 600-321:1; Suspect ACM Sites Area 1
Reclassification: None
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of an area approximately 10 m by 7 m (23 by 33 ft) area of suspect friable asbestos insulation, metal, fire brick and pipe lagging.

Location: E580231.4 N144522.9
The site is located west of Route 2 North and south-southeast of Route 1.

The SubSite is Part Of:

Code: 600-321
Names: 600-321; Suspect Asbestos Containing Material and Debris

Code: 600-321:2
Classification: Accepted
Names: 600-321:2; Suspect ACM Sites Area 2
Reclassification: None
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of an area approximately 1.5 m (5 ft) in diameter of suspect friable asbestos insulation.

Location: E581895.4 N142044.5
The site is located east of Guadalcanal Street and south of Doolittle Avenue in the Hanford Construction Camp.

The SubSite is Part Of:

Code: 600-321
Names: 600-321; Suspect Asbestos Containing Material and Debris

Code: 600-321:3
Classification: Accepted
Names: 600-321:3; Suspect ACM Sites Area 3
Reclassification: None
Type: Unplanned Release
Start Date:
Status: Inactive
End Date:

Description: This subsite consists of an area approximately 1.4 m (5 ft) in diameter of suspect friable asbestos insulation.

Location: E583068.1 N140269.8
The site is located west of 4th Street north of Avenue D in the Hanford Construction Camp.

Related Sites/ Structures: The site is located adjacent to the Welding Shop.

The SubSite is Part Of:

Code: 600-321
Names: 600-321; Suspect Asbestos Containing Material and Debris

Code: 600-321:4 **Classification:** Accepted
Names: 600-321:4; Suspect ACM Sites Area 4 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: This subsite consists of an area approximately .4 by 2 m (1.5 by 6 ft) of suspect friable asbestos insulation.
Location: E583131.6 N140209.2
The site is located south of Avenue A and east of 4th Street in the Hanford Construction Camp.

The SubSite is Part Of:

Code: 600-321
Names: 600-321; Suspect Asbestos Containing Material and Debris

Code: 600-322 **Classification:** Accepted
Names: 600-322; Rail Spur Pipe **Reclassification:** No Action (4/26/2011)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is described as an 8 inch (20 centimeter) diameter carbon steel pipe with a diamond hatched cover plate. The pipe and cover are flush with the ground surface. The pipe drains to the south under a rail spur.
Location: This site is located approximately 350 meters (1150 feet) south west of WIDS site 600-240 (Debris in Gravel Pit 17). The coordinates for the pipe are E583129.93/N140262.979.
Related Sites/ Structures: This pipe is located adjacent to a rail system that was constructed between 1943 through 1945. The rail spur possibly transported construction materials from nearby gravel pits.
Closure Info: Based on observations during the site visit and review of the history of the 600-322 waste site, confirmatory sampling was performed in November 2010. The results indicated that the waste site achieved compliance with the remedial action objectives (RAOs) and remedial action goals (RAGs) for the 600-322 waste site; therefore, remediation was not necessary. The results of the confirmatory sampling are used to make reclassification decisions for the 600-322 waste site in accordance with the TPA-MP-14 procedure in the Tri-Party Agreement Handbook Management Procedures (DOE-RL 2007).

Code: 600-323 **Classification:** Accepted
Names: 600-323; Suspect Bermed Area **Reclassification:** No Action (4/26/2011)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site is described as a bermed area with coal cinders and an apparent ditch running east and west within the area.
Location: This site is located approximately 300 meters (985 feet) west of Route 2 North and 400 meters (1,300 feet) east of WIDS site 600-240 (gravel pit 17). The center point coordinates for the berm are E584073.7/ N140263.2.

Code: 600-324 **Classification:** Accepted

Code: 600-325:2 **Classification:** Accepted
Names: 600-325:2; Burned Roofing Materials Area 2 **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of a 5 by 20 m (16 by 65 ft) area of burned roofing material.

Location: E585344.7 N139138.4
The site is located east of Guadalcanal Street and south of Doolittle Avenue in the Hanford Construction Camp

Related Sites/ Structures: The site was located between the Auditorium and the Service Station.

The SubSite is Part Of:

Code: 600-325
Names: 600-325; Burned Roofing Materials

Code: 600-326 **Classification:** Accepted
Names: 600-326; Odorous Black Material **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of two subsites. areas of the underlying soil and material that appear to be brittle, with some angular pieces, black in color and has a hydrogen sulfide odor. Field visits were performed by the Orphan Site Evaluation team in May and July 2007. The two subsites include: 1. 600-326:1, Black Material Area 1, and 2. 600-326:2, Black Material Area 2

Location: The subsites are located along the Columbia River in the Hanford Construction Camp .

Waste Type: Construction Debris

Waste Description: The waste consists of the black material. There is also brown staining of the soil around and within these piles of material.

The contaminants of potential concern are unknown. The material may be Foamglas Insulation (Registered Trademark of Pittsburgh Corning Corporation). The material is also called cellular glass. This material contains hydrogen sulfide, carbon monoxide, carbon dioxide, glass dust, crystalline silica. (See MSDS for Foamglas Insulation.)

This Site has the Following SubSites:

Code: 600-326:1
Names: 600-326:1; Black Material Area 2

Code: 600-326:2
Names: 600-326:2; Black Material Area 1

Code: 600-326:1 **Classification:** Accepted
Names: 600-326:1; Black Material Area 2 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: This subsite consists of a 2 by 4 m (6 by 13 ft) area of charcoal gray suspected insulating

material. It has a sulfur smell.

Location: The subsite is approximately 76 m SW of the former 145 Bldg (CMX) facility in the Hanford townsite.

The SubSite is Part Of:

Code: 600-326

Names: 600-326; Odorous Black Material

Code: 600-326:2

Classification: Accepted

Names: 600-326:2; Black Material Area 1

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 6 m (20 ft) diameter area of unknown black porous material. There is no vegetation growing in the affected area.

Location: The subsite is approximately 220 m (720 ft) northwest of site 600-186 Hanford Construction Camp Septic Tanks.

The SubSite is Part Of:

Code: 600-326

Names: 600-326; Odorous Black Material

Code: 600-327

Classification: Accepted

Names: 600-327; Suspect Dichromate Facility

Reclassification: No Action (4/13/2011)

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The site is a large depression filled with Russian thistle, a 2.5 cm (1 inch) water pipe stub located on the north side of the depression and the underlying soil.

Location: This site is located approximately 1.8 kilometers (1.2 miles) northwest of the intersection of Route 2 North and Route 11A and approximately 70 meters NW of the 145 Water Treatment Building. The coordinates for the site are E585905.425, N139845.264.

Process Description: Its function is not known. Document # IN-163, Monthly Field Report for November 1943, indicates this area contained coal storage and five locomotives that supported the 145 building.

Waste Type: Soil

Waste Description: Sodium dichromate and other chemicals that were utilized in the 145 Building (CMX) processes.

Code: 600-328

Classification: Accepted

Names: 600-328; Lead Slag

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This site consists of the underlying soil and scattered lead slag with a small stained soil area. The vegetation appears to be stressed.

Location: This site is located approximately 1.75 kilometers (1.1 miles) southeast of the intersection of

Location: Route 2 North and Route 11A and approximately 900 meters (0.55miles) east of Route 2. This site is approximately 50 meters southeast of Boiler House #5 of the Hanford Construction Camp. The coordinates for the site are E586117.759, N138520.321.

Process Description: The lead may have been used for pouring joints in cast iron sewer systems.

Waste Type: Soil
Waste Description: This site is potentially contaminated with lead, TPH, PAHs and RCRA metals.

Code: 600-329 **Classification:** Accepted

Names: 600-329; Concrete Outfall Structure **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of the an unknown concrete structure underlying soils near the Construction Shop of the Hanford Town-site operations, on the high water line of river the edge.

Location: The site is an unknown concrete structure near the Construction Shop of the Hanford Town-site operations. The location of this site is approximately 2 kilometers northwest of intersection Route 2 North and Route 11A. The coordinates for the site are E586323.755, N139532.792.

Process Description: This site appears to be related to the movement of water (spillway from possible storm drain).

Code: 600-331 **Classification:** Accepted

Names: 600-331; Lime Sulfur Barrel Site **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is described as the previous location of the lime sulfur barrel location. The site consists of the underlying soil that is the previous location of the lime sulfur barrel location (UPR-600-19). The site was remediated in 1997, however, sample data (Hanford Environmental Information System (HEIS)) sample number B0MJ58 indicates that high levels of lead remain.

Location: The coordinates for the site are E582488.312, N142072.094. The site is located 402 m (1320 ft) west of Route 2 North and approximately 183 m (600 ft) south of mile marker 3 at the old Herriford (Buckholdt Ranch) home site. The lime sulfur was located about 0.91 m (3 ft) off the access road, approximately in front of the house foundation and southeast of the well house foundation.

Process Description: The site was an unplanned release. An old wooden barrel that pre-dated Manhattan Engineering District (MED) operations deteriorated and collapsed, spilling the contents (about 45 kilograms) [100 lbs] of powdery lime sulfur onto the ground. The site was abandoned when the DeWitt Buckholdt Ranch was taken over by the U.S. Army Corps of Engineers in 1943. This site is located at a pre-Hanford Operations homestead, the Herriford (Buckoldt Ranch) home site.

Related Sites/Structures: This site is located at a pre-Hanford Operations homestead, the Herriford (Buckoldt Ranch) home site.

Code: 600-332	Classification: Accepted
Names: 600-332; Gable Mountain Firing Range Septic System	Reclassification: None
Type: Sanitary Sewer	Start Date:
Status: Inactive	End Date:
Description:	The site consists of the underlying soil, septic tank, associated piping and drain field for a septic system. The Orphan Site's evaluation of historical features identified the septic system that supported the small arms firing range at Gable Mountain. A field investigation was conducted on 2/19/2008 to locate a potential site for the septic system. Based upon the Photo # D-4882-NEG (See photo #1.) and the field investigation, the above Washington State Plane coordinates listed for the site are of a potential location of the Range Building (not the coordinates for the septic system) shown in the photo. A fence like object seen in the photo on the northwest side of the building could be the septic tank location.
Location:	The site is located in 600-149 (Small Arms Range), which did not previously identify this feature. 600-149 is located north of the east end of Gable Mountain. It is west of Route 2 North and the former Hanford Airport.
Process Description:	The septic system supported the Range House building at the firing range, and this building was located on the opposite side of the access road from the firing ranges (HAN-10970 Volume IV). This was a septic tank, associated piping and drain field that supported the Range House building at the firing range. Hanford patrolmen were trained in the use of small arms (HAN-10970 Volume IV).
Related Sites/ Structures:	The site was related to the Range House which has been demolished (year unknown).
Waste Type:	Equipment
Waste Description:	The waste includes the septic tank, associated piping, and drain field underlying soil. There is no reference to a drain field, however it is assumed that one exists. Contaminants of potential concern include heavy metals.

Code: 600-333	Classification: Accepted
Names: 600-333; Underground Concrete Structure	Reclassification: Rejected (3/16/2011)
Type: Process Unit/Plant	Start Date:
Status: Inactive	End Date:
Description:	The waste site consists of a below grade concrete structure with three vertical 0.5 by 0.5 meters (1.6 by 1.6 feet) shafts that are 2.4 meters (8 feet) deep and are open to the surface. The orphan sites evaluation team originally believed that the concrete structure was a septic tank that was associated with the former 101 Building graphic machining facility operations. Further investigation determined it was not a septic tank.
Location:	The 600-333, Underground Concrete Structure waste site was located in the 100-IU-6 Operable Unit, near the site of the former 101 Building. The coordinates for the site are E584750.19, N140382.7.
Process Description:	On November 2, 2010, the site was evaluated and it was determined that the 600-333 concrete structure is not a septic tank. The concrete structure was observed to be very large in dimension. It extends deeper than 3.7 meters (12 feet) below ground surface, and is 9.8 meters (32 feet) long and 4.9 meters (16 feet) wide. A very large pipeline enters the east end of the concrete structure. There were no liquids, staining, or hazardous debris observed within the

underground concrete structure. Due to the depth, size, and the nature of this concrete structure, no samples were collected from this waste site. The structure is suspected to be an underground facility rather than a septic tank.

Related Sites/ The structure is associated with the demolished 101 Graphite Machining Facility.

Structures:

Code: 600-334

Classification: Accepted

Names: 600-334; CMX Building

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: This site consists of four areas divided into two subsites: 1. CMX Building and Surface Anomalies, 2. Burn area near CMX Building, both located in the vicinity of the former CMX Building.

Location: The site is located next to the bank of the Columbia River approximately 275 m (902 ft) upstream of the Hanford town site former ferry landing at the end of Division Street (C-127).

Process Description: The CMX Building was constructed between June and September 1943. The original purpose of the facility was to perform experiments to determine the corrosion rate of reactor tubes and jackets under simulated operating conditions (IN-6263 Volume 1). The test equipment included six 3.05 m (10 ft) long aluminum tubes built according to the design specifications for the production piles. In early 1944, two of these tubes were replaced with full-length 12.2 m (40 ft) pile tubes. Auxiliary facilities consisted of a water laboratory, a completely equipped dark-room for photographic work, softening equipment for water used in steam generation, and office and locker-room space (HAN-73214-14). Although the initial purpose of CMX was to investigate corrosion of aluminum and evaluate equipment design, it was found, after a short period of operation, that iron and aluminum compounds were depositing on process equipment. The deposits were sufficiently heavy to cause a marked reduction in flow rate and would certainly cause high slug surface temperatures under plant conditions. Therefore, the program was expanded to include a fundamental study of film formation and its removal. In addition, it was found necessary to include in the program the development of several analytical procedures to ensure the precision required for several determinations (HW-7-4444). Columbia River water was supplied to the CMX Building by two 1,136 LPM (300 GPM) self-priming pumps mounted in a moveable shelter at the river's edge on the downstream side of the facility (HAN-73214-14). Alum or an alkali was added prior to being passed through closed settling tanks and sand filters. The water was further treated by passing through one of three treatment systems: a secondary filtered water treatment system, a deaerated water treatment system, or a demineralized water treatment system. These systems fed high-head pumps which produced 350 psi water to the process tubes. The treated water was also heated to the temperatures expected in pile operation. Between September 1, 1943 and October 30, 1944 the optimum concentrations of critical anti-corrosion (sodium dichromate) and anti-scaling (sodium silicate) chemicals were tested and perfected. Other chemicals used in the process were sulfuric acid, which was used extensively in the building for pH adjustments, ferric sulfate which was used during the development of coagulants, oxalic acid which was used as a film removal agent, and hydrogen peroxide which was used during testing for film removal. Much of the piping was either rubber-lined or stainless steel. Five railroad locomotives were connected in parallel to a single header just northwest of the 145 Building to furnish 1,500 boiler hp and process/heating steam. Air for the instruments and lab was supplied by a steam-driven compressor. Electric power and light was obtained from the Hanford Construction Site system (DUH-11843, HW-7-4444). In June 1944, a flocculator (with agitator) and a 95,635 L (25,000 gal) clearwell were added to CMX to study the removal of iron and aluminum from river water. Building 145 was

shut down October 30, 1944, when final CMX runs were concluded. The facilities remained in standby condition until January 1945 when satisfactory pile operations in 100-B and 100-D Areas had indicated that no major film or corrosion problems were to be anticipated. The equipment was subsequently dismantled and declared excess by Construction (HAN-73214-14). Similar experimental work continued through the use of flow laboratories that were installed adjacent to the production piles.

Waste Type: Soil

Waste Description: The waste is potentially contaminated soil and abandoned in-ground piping. The contaminants of potential concern include sodium dichromate, ferric sulfate, lead (from sulfuric acid), mercury (from the sulfuric acid), sulfuric acid and petroleum products.

This Site has the Following SubSites:

Code: 600-334:1

Names: 600-334:1; CMX Building and Surface Anomalies

Code: 600-334:2

Names: 600-334:2; Burn area near CMX Building

Code: 600-334:1

Classification: Accepted

Names: 600-334:1; CMX Building and Surface Anomalies **Reclassification:** No Action (4/26/2011)

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The 600-334:1 subsite consisted of the following three: Area 1 is a raised footprint where the 145 Building Complex was once located. Area 2 is located on the northwest, upstream side of area 1, and is a 5- by 5-m (16- by 16-ft) depression that is approximately 1.5 m (5 ft) deep. Area 3 is on the north, riverbank side of area 1, and consists of three open-ended outfall pipes that protrude horizontally from what appears to have been the middle of the CMX Building. Two of these are vitrified clay pipe, and the southernmost is stainless steel. It was originally thought that these pipes may have carried contaminants from experimental procedures to the river.

Location: This site is located next to the bank of the Columbia River approximately 275 m (902 ft) upstream of the Hanford town site former ferry landing at the end of Division Street (C-127).

Process Description: Refer to the parent waste site (600-334) for a process description of the 145 building complex. The site was identified during the Orphan Site Evaluation field walkdowns for the 100-IU-2 and 100-IU-6 areas on May 10, 2007 (EL-1616, OSR-2008-0001). The two vitreous pipes were sewers; one was the sanitary sewer for the 145 building and the other was the process sewer used to return the treated water back to the Columbia River (M-2899). The purpose of the cast iron pipe is unknown.

Geophysics investigation GI# 0585886 was conducted at this site January 2008 using ground penetrating radar (GPR) and a high sensitivity metal detector (EM-61). The results are as follows: The footprint of the 145 building is relatively clear in the geophysical data. All three of the exposed pipes were traced from the riverbank to the eastern edge of the building, suggesting that they are indeed associated with the building. Two additional linears were also identified that extend from the river bank to the building footprint.

The SubSite is Part Of:

Code: 600-334

Names: 600-334; CMX Building

Code: 600-334:2 **Classification:** Accepted
Names: 600-334:2; Burn area near CMX Building **Reclassification:** None
Type: Process Unit/Plant **Start Date:**
Status: Inactive **End Date:**
Description: Subsite two consists a 4.6 m (15.1 ft) diameter burn area of unknown origin found off the northwest corner of the former CMX Building complex.
Location: This site is located next to the bank of the Columbia River approximately 275 m (902 ft) upstream of the Hanford town site former ferry landing at the end of Division Street (C-127).
Process Description: The parent site was identified during the Orphan Site Evaluation field walkdowns for the 100-IU-2 and 100-IU-6 areas on May 10, 2007 (EL-1616, OSR-2008-0001). The nearest facility to the site is the CMX Building (Building 145). Refer to the parent waste site (600-334) for a process description of Building 145.

The SubSite is Part Of:

Code: 600-334
Names: 600-334; CMX Building

Code: JA JONES 1 **Classification:** Accepted
Names: JA Jones 1; JA JONES 1; JA Jones Construction Pit #1; JA Jones Dumping Pit #1 **Reclassification:** Interim Closed Out (11/8/2001)
Type: Dumping Area **Start Date:** 1/1/1975
Status: Inactive **End Date:** 1/1/1979
Description: The site has been remediated and closed out. The site originally consisted of a trench dug from east to west, located on the west side of a depression and used by the J.A. Jones Company.
Location: The JA Jones 1 site is located north of the 300 Area, east of the point where the railroad tracks cross Route 4 South, in the 100-IU-6 Operable Unit of the Hanford Site in southeastern Washington State.
Release Description: In 1980, 77 cubic meters (100 cubic yards) of contaminated soil excavated from the 305-B Berm were placed in this pit (see UPR-600-11). When the contamination was identified, the soil was removed from this pit and taken to the 200 Area for proper disposal.
Process Description: This site was used by the JA Jones company for the disposal of miscellaneous debris, construction waste and paint products. An interview with an employee revealed that in 1977, seven to ten pick up truck loads of overstocked paint and solvents were disposed of in this pit. The containers were opened and the contents emptied onto the ground in the pit. The empty containers were then thrown into the pit.
Related Sites/Structures: This site is associated with UPR-600-11 which was an area within the JA Jones Pit #1 where contaminated material was mistakenly disposed. The contaminated material was removed in 1980 and the area released from radiological control. The site has been Closed Out. Another associated WIDS waste site is 600-1, a trench located adjacent to and east of the JA Jones #1 Pit. It was used by the 300 Area Westinghouse facilities as a disposal site for tumbleweeds that collected on the 300 Area fences. The site status is Rejected.
Waste Type: Construction Debris
Waste: This site contains miscellaneous nonradioactive solid wastes from various construction sites. It

-
- Description:** contains wood scraps, concrete, miscellaneous construction wastes and paint products.
- Waste Type:** Chemical Release
- Waste Description:** In 1977, seven to ten pick up truck loads of over stocked paint and solvents were disposed of into a pit located north of the 300 Area. A site visit with the employee who dumped the paint indicates it was placed in the trench known as JA Jones Pit 1. He indicated that latex, epoxy and enamel paints, as well as paint thinners were discarded. He opened the containers (one and 5 gallon cans) and emptied the contents into the pit. He then threw the empty containers into the pit.
- Waste Type:** Misc. Trash and Debris
- Waste Description:** The site may contain some low level uranium contaminated materials. However, this information can not be confirmed because of the uncertainty the location where the material was dumped.
- Closure Info:** Remedial action objectives and goals for the JA Jones 1 site were established by the U.S. Environmental Protection Agency and the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These goals and objectives are documented in the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (Remaining Sites ROD) (EPA 1999) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17). The relocation of the JA Jones 1 site from the 300-FF-2 Operable Unit to the 100-IU-6 Operable Unit and remedial action decision are documented in the June 2000 Explanation of Significant Difference for the 100 Area Remaining Sites ROD (EPA 2000).

The selected remedial action for the JA Jones 1 site included (1) excavating the site to the extent required to meet specified soil cleanup levels and (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility in the 200 Areas of the Hanford Site. Material excavated from the site included soil, concrete, construction-type debris, crushed paint cans, dried paint debris, sandblast material, and flame-retardant-like material. The site will be backfilled and recontoured using clean soil and concrete debris excavated from the site. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

Radiological surveys and Industrial Hygienist monitoring was performed throughout the excavation process. With the exception of the suspect flame retardant, no radioactive material above background levels was identified for the excavated material, anomalous waste, or residual soil. Field instruments used for IH monitoring did not detect any organic vapors in the excavated material, anomalous waste, or residual soil. Visual observation of the excavated material did not identify any areas of discolored soil or concrete.

For the respective points of compliance, remedial action goals (RAGs) were established to identify contaminants of concern (COCs). The COCs for this site were identified based on site history, type of material found during excavation, radiological surveys, industrial health monitoring, and visual observations made during remedial excavation. The COCs, which include nonradionuclides only, are listed in the Proposed Closeout Plan for the JA Jones Site (BHI 2001) and include the following: barium, cadmium, total chromium and lead.

The remedial action at the JA Jones 1 site has achieved the RAOs and corresponding RAGs established in the Remaining Sites ROD and RDR/RAWP. The remaining soils at the JA Jones 1 site have been sampled, analyzed, and modeled. The results of this effort indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The JA Jones 1 site is verified to be remediated in accordance with the Remaining Sites ROD and may be backfilled and recontoured. Based on

agreement between EPA and DOE and on concrete sample analyses results, remaining site concrete debris will be used to partially backfill the site excavation.

Code: UPR-600-11 **Classification:** Accepted

Names: UPR-600-11; Contaminated Soil Dumped at JA Jones Pit #1 **Reclassification:** Closed Out (1/27/1999)

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:** 1/1/1980

Description: The site was an area within the JA Jones Pit #1 where contaminated material was mistakenly disposed. The contaminated material was removed in 1980 and the area released from radiological control. There is no visual evidence of this occurrence.

Location: The release occurred in the JA Jones Pit #1, which is located about 1.2 kilometers (2 miles) north of 300 Area.

Release Description: On May 29, 1980, during a routine radiological survey, low-level beta-gamma contamination (approximately 600 counts per minute) was detected in a small amount of discarded blacktop rubble laying on the south end of the 305-B Berm. Some of the contaminated blacktop had mixed with the disturbed earthwork. JA Jones subcontractor workers had excavated 76.5 cubic meters (100 cubic yards) of soil from the 305-B Berm, which was thought to be uncontaminated, and taken it to the JA Jones Pit #1 before the contamination was detected. The JA Jones Pit #1 was designated as a non-radioactive landfill. Work was stopped immediately and the appropriate personnel were notified.

Related Sites/Structures: UPR-600-11 was associated with the 305-B Berm (WIDS Site 300-29) and the JA Jones Pit #1 (WIDS Site JA Jones 1).

Waste Type: Soil

Waste Description: The waste included soil and blacktop rubble. Surveys of the blacktop rubble revealed contamination with a maximum reading of 1000 counts per minute. Soil at the dump site had readings of less than 200 counts per minute. This is believed to be the field instrument detection limit. Blacktop and soil samples (quantity unknown) were collected for a laboratory counting. The blacktop had a maximum reading of 600 counts per minute natural uranium. The soil measured at less than detectable.

Closure Info: Following the discovery of the contaminated material, the two affected areas (the 305-B Berm and the JA Jones dump site) were roped off, surveyed and posted as radiation zones. The subcontractor personnel and equipment were carefully surveyed and found to be free of contamination. The subcontractor personnel were given whole body and lung counts. All were found to be below detection levels. The contaminated soil dumped into the pit was removed and taken to the 200 Area for disposal. Further soil excavation at the 305-B Berm was closely surveyed by a radiation monitor.

Code: UPR-600-16 **Classification:** Accepted

Names: UPR-600-16; P-11 Fire and Contamination Spread; UN-600-16; UN-616-16 **Reclassification:** Interim Closed Out (10/28/2008)

Type: Unplanned Release **Start Date:** 1/1/1951

Status: Inactive **End Date:**

Description: Fire and Contamination Spread waste site is an unplanned release that occurred on December 4, 1951, when plutonium contamination was spread by a fire that ignited inside the 120 Experimental Building. The area is currently a flat, featureless field that has been sown with

rye grass. The P-11 Laboratory structure has been removed but its location is marked with a permanent concrete benchmark.

Location: The 120 Building was located approximately 4.8 kilometers (3 miles) southeast of 100-F Area, approximately 0.48 kilometers (0.3 mile) west of Route 2 North.

Release Description: The P-11 Facility was a laboratory for plutonium criticality studies. In November 1951, a criticality excursion resulted in extensive plutonium contamination inside the laboratory building (120 Building). Activities in the laboratory were suspended to conduct decontamination work. On December 4, 1951 decontamination was in the final stages when a spontaneous ignition of decontamination materials caused a fire that gutted the entire building. Plutonium contamination was spread by the fire and also washed into the soil by the waster used to extinguish the fire. The area was stabilized with clean soil and gravel to prevent wind from spreading the contamination further. The 120 Building and its crib were removed in 1974 and the area was released from radiological posting.

Related Sites/ Structures: The site was associated with the 120 Building and the P-11 Crib (site code 600-111).

Waste Type: Ash

Waste Description: An estimated amount of 1 to 4 grams (0.035 to 0.14 ounces) of plutonium was deposited over an area approximately 1,660 square meters (18,000 square feet) from a structure fire in 1951.

Closure Info: 600-111 and UPR-600-16 were addressed as a group. The information below documents information for the group of sites.

In accordance with the Remaining Sites Verification Package for site 600-111 and UPR-600-16, the confirmatory and verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions have achieved the remedial action objectives (ROAs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan (RDR) for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (ROD).

To track results of confirmatory sampling, the lab complex waste site was stratified into the following seven areas for evaluation and sample collection: Area 1: Former 120 Experimental Building location, Area 2: Former P-11 Crib location, Area 3: Former 123 Control Building location, Area 4: Geophysical anomaly, Area 5: Septic Drain Field, Area 6: Septic Tank, and Area 7: Surface Depression. The identification of the sample areas is based on evidence encountered during confirmatory sampling and differs from that based on historical information presented in the work instruction.

Remedial action of the septic system tank and drain field (Areas 5 and 6) located at 600-111 was performed between February 25, 2008 and March 25, 2008. The site was excavated to approximately 4.6 m (15 ft) below grade (at the deepest portion), resulting in a combined volume of approximately 2,755 m³ (3,603 yd³) of material removed and disposed at the Environmental Restoration Disposal Facility. Verification soil samples for the septic system remediation were collected on April 21, 2008.

All test pits/trenches were excavated and sampled in late April 2004 through early May 2004 as specified in the sampling work instruction. During excavation, field monitoring for VOCs was performed and no constituents were detected. In addition, FIDLER radiological surveys were performed during excavation, and no detectable radiological contamination above background was found.

The Contaminants of Concern (COCs) were PCBs, arsenic, cadmium, and lead. Other metals include barium, chromium, copper, manganese, mercury, molybdenum, selenium, silver, vanadium, and zinc. The ROD and the RDR/RAWP identify the contaminants of potential concern (COPCs) as "undetermined radionuclides." Review of the historical information and process knowledge during planning for confirmatory sampling resulted in the following list of COPCs: isotopic plutonium, americium-241, gamma-emitting radionuclides, polychlorinated biphenyls (PCBs), inductively coupled plasma (ICP) metals, mercury, and semivolatile organic compounds (SVOCs). Although asbestos was a COPC, it was only to be sampled if suspect asbestos material was observed during sampling activities. Volatile organic compounds (VOCs) were not COPCs; however, field screening using an organic vapor meter was performed during excavation. From the work instruction if field-detectable VOCs were found, volatile organic analysis would be added to the sample analyses. During the excavation and sampling activities, the organic vapor meter did not indicate the presence of VOCs.

The confirmatory samples were analyzed by offsite laboratories using EPA-approved analytical methods. After sampling was completed, all of the laboratory data from one sampling data group were validated to level C in accordance with BHI-EE-01, Environmental Investigation Procedures. A data quality assessment (DQA) review was performed to compare the sampling approach and resulting analytical data with the sampling and data quality requirements specified by the project objectives and performance specifications. The results of this review are reported in Appendix B of the RSVP.

These results illustrate that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) The UPR-600-16 and 600-111 waste sites have been evaluated and remediated in accordance with the Remaining Sites ROD and the RDR/RAWP. Confirmatory sampling results for Areas 1, 2, and 3 and radiological surveys performed at the UPR-600-16 waste site supported no action. Only the septic system (tank, drain field, and interconnecting pipeline) required remediation. Statistical sampling to verify the completeness of remediation was performed, and analytical results were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Accordingly, an interim closure reclassification is supported for 600-111 and UPR-600-16 waste sites. The site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

100-KR-1

Code: 100-K-57 **Classification:** Accepted

Names: 100-K-57; 107-KE Drainage Ditches **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1967

Status: Inactive **End Date:** 1/1/1971

Description: The site appears as a dry, shallow ditch which extends from the 116-K-3 (1904-K Outfall Structure) and the 116-K-1 Crib. A second ditch extends from the culvert to the Columbia River. The culvert conveyed process effluent leakage from the area surrounding the 107-KE Basins under the road and to the ditch. The two ditches intersect below the bank located just north of the basins. The ditch at the bottom of the bank is approximately 300 meters (980 feet) long and 2 meters (6.6 feet) wide and the ditch leading from the culvert to the river is approximately 270 meters (890 feet) long and the width is generally 2 meters (6.6 feet) wide but widens significantly in the middle section. The southern portion of the ditch is located in an area posted as a "Soil Contamination Area." The ditch is barricaded from the river by a three strand barbed wire fence and is posted with "Keep Out" signs.

Location: The site is located north of 100-K Area, north of the 107-KE Retention Basins. It is between the Columbia River and security road inside the 100 KE Flood Plain.

Related Sites/ Structures: The drainage ditch received process effluent from the 107-KE Retention Basins. It is associated with 100-K-64.

Waste Type: Process Effluent

Waste Description: The site received process effluent from the 107-KE Retention Basins when the site was active.

Waste Type: Soil

Waste Description: The soil in and around the ditch is contaminated with radionuclides as a result of conveying reactor process effluent to the river.

Code: 100-K-63 **Classification:** Accepted

Names: 100-K-63; 100-KW Flood Plain Contamination Area; 100-KW Floodplain; UN-116-KW-1 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a large portion of the flood plain, along the shore of the Columbia River, north of 100-K West Reactor Area that is posted as a radiological contamination area. Most of it is posted as an Underground Radioactive Material Area, but there are two sections that remain posted as Soil Contamination Areas.

Location: The site is located along the Columbia River shoreline, north of the 107-KW Basins.

Release Description: The 107-KW Basins developed leaks over time. Leaks were estimated to be as great as 18,900 to 75,700 liters/minute (5,000 to 20,000 gallons/minute). A metal culvert to an open ditch diverted the water to the river shoreline.

Related Sites/ Structures: The 116-KW-3 (107-KW Basins) are related to this site.

Code: 100-K-64 **Classification:** Accepted
Names: 100-K-64; 100-KE Flood Plain Contamination Area; 100-KE Floodplain; UN-116-KE-1 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site is the portion of the flood plain, along the shore of the Columbia River, north of 100-K East Reactor Area that is posted as a radiological contamination area, Soil Contamination Area and Underground Radioactive Material. It is inside an 8 foot chain link fence. The gate has an Underground Radioactive Material sign posted on it.
Location: The site is located north of the 107-KE Retention Basins, along the Columbia River shoreline, just west of the 116-K-1 Crib.
Release Description: The 107-KE Basins developed leaks over time. Leaks were estimated to be as great as 18,900 to 75,700 liters/minute (5,000 to 20,000 gallons/minute). A metal culvert to an open ditch diverted the water to the river shoreline. (see UPR-100-K-1)
Related Sites/ Structures: The 116-KE-4 (107-KE Basins) and 100-K-57 Drainage Ditch are related to this site.

Code: 100-K-78 **Classification:** Accepted
Names: 100-K-78; Fenced Contamination Area **Reclassification:** No Action (4/6/2011)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: In April 2000, the site was enclosed within a post and chain area and posted with Contamination Area signs.
Location: The site is located northeast of the 116-K-1 Crib.
Waste Type: Soil
Waste Description:
Closure Info: A surface radiological survey was performed at the 100-K-78 waste site on February 25, 2010. A sodium-iodide probe was used to collect information on potential contamination. Although the survey record notes direct beta/gamma readings up to 3.5 times background, no removable contamination above radiological control limits was present at the site.

Confirmatory sampling was performed at 100-K-78 on April 19 and November 5, 2010. During the first sampling event, two samples plus one duplicate were collected of surface soil. One sample was collected at a location previously identified as having the highest radiological readings at the site. The second sample and duplicate were collected from material composited from five locations within the waste site. Field instruments did not detect elevated radiological or organic vapor readings in the sample material.

During the second sampling event, a test pit was excavated near the center of the site. Soil samples were taken in approximate 0.8 -meters (2.5-feet) intervals from the surface to 3 meters (10 feet) below ground surface (bgs). Excavated material from 2.1 meters (7 feet) bgs exhibited slightly elevated radiological readings. Background was noted as ~400 counts per minute (cpm); the material was reading ~550 cpm. This material was collected for the 1.5- to 2.3 - meters (5.0- to 7.5-feet) bgs sample. No other elevated radiological or organic vapor readings were detected.

No debris, anomalous material, or stained soil was observed during sampling activities.

Code: 100-K-80 **Classification:** Accepted

Names: 100-K-80; 100KW River Effluent Pipeline; 100KW River Line; River Line (West) from 116-K-3 Outfall **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: This site is one of two adjacent, 213 centimeters (84 inches) diameter, carbon steel river effluent pipelines that extend from the face of 116-K-3 outfall structure to the river shoreline. This waste site is the inactive pipeline from 105-KW.

Both pipelines (100-K-80 and 100-K-96) are exposed along most of the run, protruding 0.3 to 0.9 meters (1 to 3 feet) above the riverbed. The pipelines are approximately 122 centimeters (48 inches) apart. They were originally covered by a minimum of 0.6 meter (2 feet) of soil over their entire length. The initial 142 meters (467 feet) (from the reactors to the outfall inlet) are concrete piping, and the remainder welded steel piping.

Location: The 100-K-80 river pipeline is located on the Columbia River shore, adjacent to the 100K Area. It is west of the adjacent, active 100-K-96 pipeline.

Process Description: 105-KW reactor cooling water was collected and temporarily stored in the 107-KW Retention Basins. The cooling water was discharged to the river, bypassing (underneath) the 116-K-3 (1908-K) outfall structure, through the 100-K-80 river pipeline. Process sewer waste, from both 100-KE and 100-KW facilities, entered the outfall structure and dropped into the 100-KE river pipeline (see 100-K-96) through large-diameter, vertical standpipes welded onto the pipelines.

Retention basins lines (100-K-55 and 100-K-56) did not discharge through the outfall structure, but passed under it. They are a continuous line that become the river effluent pipelines downstream of the outfall structure. The pipelines discharge into a recessed, sloped riprap river bed structure, measuring 9 meters (30 feet) wide by 12 meters (40 feet) long and 1 meter (3 feet) thick. The total drop from the face of the outfall structure to the discharge end of the pipelines is 18 meters (60 feet).

In 1955, the lines began to float and break. Both lines were damaged. To remedy the problem, a 2 to 3 meter (6 to 10 feet) thick riprap jetty was placed over the lines from the shoreline to a point approximately 320 meters (1050 feet) from the face of the outfall structure.

Related Sites/Structures: The pipeline site is associated with the 116-K-3 Outfall Structure, the 100-K-83 Spillway, the 100-K-47 process sewer, 100-K-56 process effluent lines, 100-K-55 process effluent lines, the 100-K-60 process sewer, the 116-KW-3 Retention Basins, the 100-K-96 river pipeline, and the 100-K-113 river pipeline.

Waste Type: Process Effluent

Waste Description: The waste includes the pipeline and the contaminated scale contained within it. The effluent included both reactor cooling water and process sewer waste.

The Contaminants of Potential Concern are based on the 116-K-3 outfall, and include Co-60, Cs-137, Eu-152, Eu-154, Pu-239/240, and Sr-90.

Code: 100-K-81 **Classification:** Accepted

Names: 100-K-81; Contamination Area West of 116-K-3 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a large cylindrical piece of equipment surrounded by a rope and posted as Soil Contamination Area.
Location: The posted Soil Contamination area is adjacent to 116-K-3 Outfall Structure, approximately 6.1 meters (20 feet) west of the Outfall Structure fence.
Process Description: The large cylindrical piece of equipment could be lowered into the top of the outfall structure. It was used to plug the outfall structure and prevent water from going through the structure.
Related Sites/Structures: The site is associated with the 116-K-3 Outfall, 100-K-83 spillway, the 116-KE-4 and 116-KE-3 retention basins, the 100-K-55 and 100-K-56 process effluent lines, the 100-K-47 process sewer, and the 100-K-80 river effluent pipelines.
Waste Type: Construction Debris
Waste Description: The Contaminants of Potential Concern include Co-60, Cs-137, Eu-152, Eu-154, Pu-239/240, and Sr-90.

Code: 100-K-83 **Classification:** Accepted
Names: 100-K-83; 116-K-3; 1904-K Flume; 1904-K Outfall Structure; 1904-K Spillway **Reclassification:** None
Type: Outfall **Start Date:**
Status: Inactive **End Date:**
Description: The 100-K-83 spillway (also referred to as a flume) was a combination of a three-sided, reinforced concrete trough beginning at the 116-K-3 Outfall, followed by an open earthen trench extending from the end of the concrete trough to the Columbia River shore.
Location: The concrete portion of the spillway exits the east side of the 116-K-3 Outfall, takes an immediate 45-degree turn in the downstream direction. An earthen trench continues in the same direction from that point to the river shoreline.
Process Description: The spillway was an alternate discharge point for the 116-K-3 Outfall structure. It was planned to be used only if the River Effluent Pipelines (sitecodes 100-K-80 and 100-K-96) were blocked, damaged, or undergoing maintenance. There is no corroborated physical or historical evidence that the spillway was ever used.
Related Sites/Structures: The site is associated with 100-K-80, 100-K-96 (100-K River Effluent Pipelines) and 116-K-3 (1904-K) Outfall structure.
Waste Type: Construction Debris
Waste Description: If ever put into service, the COPCs for the 100-K-83 spillway would be the same as for the 116-K-3 outfall, including Cobalt-60, Cesium-137, Europium-152/154, Plutonium 239/240, and Strontium-90. There is no corroborated physical or historical evidence that the spillway was ever used.

Code: 100-K-86 **Classification:** Accepted
Names: 100-K-86; Four Areas of Stained Soil in 100-K Area; 100-K Stain Areas **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of stained soil in four areas with, surface debris and the underlying soil.

Location: The coordinates for the areas are: Area 1. N 568381.27, E 146009.94, Area 2. N 568923.50, E 145541.86, Area 3. N 568443.18, E 145437.89, Area 4. N 568848.48, E 145301.50

Waste Type: Soil

Waste Description: The waste is potentially contaminated soil. There was no information describing the release of the observed materials.

Code: 100-K-87 **Classification:** Accepted

Names: 100-K-87; 100-K Asbestos Lagging **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a 0.6 m (2 ft) segment of suspected friable asbestos pipe lagging and any contaminated soil related to the asbestos.

Location: The site is located in the 100K Area in the 100-KR-2 Operable Unit, approximately 285 meters (935 ft) south of the southern most corner of the 100 K perimeter fence, and approximately 440 meters (1440 ft) north of Route 1. The site is located approximately 15 meters (50 ft) outside the boundary of the 600-29 waste site (100-K Construction Lay-down Area). The Washington State Plane coordinates for the site are E 568610.61, N 145586.62.

Process Description: This is most likely just an excess section of pipe left on the ground. It is probably related to the adjacent 600-29 Construction Lay-Down Area.

Waste Type: Asbestos (friable)

Waste Description: The waste is soil with potential friable asbestos. The contaminant of potential concern is asbestos.

Code: 100-K-88 **Classification:** Accepted

Names: 100-K-88; Yellow and White Granular Material **Reclassification:** No Action (4/6/2011)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of stained soil, scattered yellow granular material and the underlying soil. There is no vegetation within the release area.

Location: The site is located in the 100K Area in the 100-KR-1 Operable Unit. The site is located approximately 422 m (1,385 ft) north of Route 1 and approximately 25 m (82 ft) east of the access road to the 100-K pump and treat facility. The site is located approximately 75 m (250 ft) west of the boundary of the 600-29 waste site (100-K Construction Laydown Area). The site is located at Washington State Plane coordinates E 568356.47, N 145569.09.

Waste Type: Soil

Waste Description: The contaminants of potential concern are unknown. The waste is potentially contaminated soil.

Closure Info: Confirmatory sampling was initiated and performed in November 2010. The confirmatory sampling results indicated that the waste site achieved compliance with the remedial action

objectives (RAOs) and remedial action goals (RAGs), and remediation was not necessary. A summary of the cleanup evaluation for the soil results against the applicable criteria was presented in Table ES-1 of the RSVP. The results of the confirmatory sampling were used to make reclassification decisions for the waste site in accordance with the TPA-MP-14 procedure in the Tri-Party Agreement Handbook Management Procedures (RL-TPA-90-0001, rev. 1)

Code: 100-K-89 **Classification:** Accepted
Names: 100-K-89; 100-K Burn Site **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: This site consists of burned debris (wood, metal and roofing material) and the underlying soil.
Location: The site is 60 m (197 ft) south of site 600-29. The Washington State Plane coordinates for the site are E 568597.54, N 145529.56.
Waste Type: Construction Debris
Waste Description: Contaminants of potential concern may include asbestos and petroleum products. The waste is burned debris (wood, metal and roofing material) and any potentially contaminated soil.

Code: 100-K-90 **Classification:** Accepted
Names: 100-K-90; 100-K White Granular Material **Reclassification:** No Action (4/6/2011)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of white granular material and the underlying soil. The vegetation at the site appears to be unaffected by the presence of the substance.
Location: The site is located in the 100K Area in the 100-KR-1 Operable Unit. The site is located approximately 365 m (1,200 ft) north of Route 1 and 32 m (105 ft) east of the access road to the 100 K pump and treat facility. The site is approximately 105 m (345 ft) west of the 600-29 waste site boundary (100-K Construction Lay-down Area). The Washington State Plane coordinates for the site are E 568347.54, N 145512.27.
Closure Info: In November 2010 a focused sampling approach was used to evaluate the white granular material at 100-K-90 and determine if there is any soil contamination due to its presence (WCH 2010b). One shallow soil sample (0 to 0.15 meters [0 to 6 in.] below ground surface) and one duplicate soil sample were collected from the waste site. No radiological activity or volatile organic compounds (VOCs) were detected during confirmatory sampling. Furthermore, no stained soil or anomalous material was observed during sampling. Analysis was performed to evaluate if contamination associated with the white granular material was present. Confirmatory sampling at the 100-K-90 waste site indicated that environmental contamination above cleanup levels was not present, and remedial action was not necessary. The confirmatory sampling data has been used for a No Action determination.

Code: 100-K-91 **Classification:** Accepted
Names: 100-K-91; 100-K Battery **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of one intact vehicle battery, partially buried, and the underlying soil. The

surrounding vegetation appears to be unaffected by its presence.

Location: The site is located off of an unpaved secondary road west of the 100 K operable unit. Traveling west on Route 1 from the intersection with K Avenue proceed 2.3 km (1.4 m) to the unpaved road on the right. Turn right and travel approximately 355 meters (1165 ft). The site is located approximately 33 meters (110 ft) east of the road in an open area. The Washington State Plane coordinates are E 567290.29, N 145486.16.

Process Description: The origin of this battery, whether from the pre-Hanford or Hanford eras, is unknown. It appears to have been random littering.

Waste Type: Batteries

Waste Description: The contaminants of potential concern may contain lead and possibly sulfuric acid in the soil.

Description: The waste is the battery and potentially contaminated soil.

Code: 100-K-92 **Classification:** Accepted

Names: 100-K-92; 100-K Reddish Stained Gravels **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of two areas containing reddish crusted soil and the underlying soil. Area 1. The site is reddish crusted soil indicating that a liquid may have been dumped to the ground. There is little or no vegetation growing in the stained area. Area 2. The site is reddish stained soil, metal debris and the remnants of a crushed drum. There is little or no vegetation growing in the affected area. (Logbook EL-1628 page 17.)

Location: The Washington State Plane coordinates for each area are: Area 1. E 568334.35, N 145456.30 Area 2. E 568355.99, N 145418.29.

Process Description: It is suspected that this material is similar to that of 100-K-84 which was described as: crushed iron ore, a component of the concrete used in reactor and other facility construction because it provided additional shielding. The material is highly magnetic.

Waste Type: Construction Debris

Waste Description: The waste is the spilled/abandoned red material.

Description:

Code: 100-K-93 **Classification:** Accepted

Names: 100-K-93; 100-K Drum Remnant **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a 208 L (55 gal) drum remnant with approximately .03 m³ (1 ft³) of solidified gray/black tar like substance and the underlying soil. (Logbook EL-1628 page 17.)

Location: The site is located approximately 162 m (530 ft) north of the 116-K-1 crib and 610 m (2000 ft) northeast of the 181 KE river pump house. The site is approximately 90 m (300 ft) from the Columbia River. The site is located at Washington State Plane coordinates E 569226.34, N147476.24.

Waste Type: Sludge

Waste Description: The waste is the abandoned drum, tar like substance, and any contaminated soil

Description:

Description:

Code: 100-K-94 **Classification:** Accepted

Names: 100-K-94; 1702-KE and 1702-KW Guard House **Reclassification:** None
Dry Wells

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: There are two identical dry wells, one at the 1702-KE guard house and one at the 1702-KW guard house. Each 76 centimeter (30 inch) dry well received drinking water through a 7.6 centimeter (3 inch) cast iron pipe that exited guard houses.

Location: The dry well associated with 1702-KE is approximately north of the facility, centered at Washington State Plane coordinates E 569083.43, N 146600.77. The dry well associated with 1702-KW is approximately north of the facility, centered at Washington State Plane coordinates E 568808.6, N 146453.6.

Process Description: Excess drinking water effluent flowed from the drinking fountain in each guard house through underground piping to the dry well.

Waste Type: Water

Waste Description: No evidence of hazardous or dangerous waste being discharged to these sites was discovered.

Description: The waste was excess (unconsumed) water coming from the drinking fountains at both guard houses.

Code: 100-K-95 **Classification:** Accepted

Names: 100-K-95; 100-K Tar Dump **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This waste site is a large area, approximately 150 meters (500 ft) in diameter, with tar dumps scattered throughout. The site consists of scattered areas of tar and the underlying contaminated soil. The area is approximately 150 meters (500 ft) in diameter. The nearest maintained road is 270 meters (900 ft) away. A field walkdown of the site was conducted on July 07, 2008. (Logbook EL-1616-1 page 63.)

Location: The site is located in the 100K Area in the 100-KR-1 Operable Unit at coordinates E569072.38, N145469.5. It is about 60 meters (200 feet) south of the 600-29 Construction Lay-down Area.

Process Description: These tar dumps, located south of the 600-29 Construction Lay-down Area, probably occurred as a way of disposing of excess oil and tar during 100-K Area Construction.

Related Sites/ Structures: Analogous sites include 600-280 and 600-190.

Waste Type: Construction Debris

Waste Description: The waste is construction debris. The contaminants of potential concern consist of PAHs and

Description: PCBs.

Code: 100-K-99 **Classification:** Accepted

Names: 100-K-99; 116-KE-4 Contaminated Soil and **Reclassification:** None

Items; Radioactive Material Area Remaining
After 107-KE Basin Removal

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The 107-KE Retention Basins had been located in this area, but were removed in 1995 (see sitecode 116-KE-4).

Location: The site is located north of the 105-KE Reactor building, inside the 100-K fence.

Related Sites/ Structures: The waste site is associated with 116-KE-4.

Waste Type: Misc. Trash and Debris

Waste Description: Radioactively contaminated soil, Griffon material and a concrete block was found while excavating an area adjacent to the remediated 116-KE-4 basins. 24,000 dpm per 100 centimeters (squared) beta/gamma was found on the Griffon material. 6,000 dpm per 100 centimeters (squared) beta/gamma was found on the soil around the concrete block.

Code: 100-K-100

Classification: Accepted

Names: 100-K-100; 116-KW-3 Remaining Contaminated Soil and Items; Radioactive Material Area Remaining After 107-KW Basin Removal

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The 107-KW Retention Basins had been located in this area, but were removed in 1995 (see sitecode 116-KW-3).

Location: The site is located north of the 105-KW Reactor building, inside the 100-K Area fence.

Code: 116-K-1

Classification: Accepted

Names: 116-K-1; 116-K-1 Trench; 100-K Crib; 100-K Emergency Pond; 100-K Pond; 107-K Pond; 107-K(E) Sump

Reclassification: Interim Closed Out (5/17/2004)

Type: Crib

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1956

Description: The site has been remediated and interim closed out.

Location: The site was northeast of 116-KE-4 (107-KE Retention Basins).

Process Description: The unit was a structure within a structure, the dimensions were 61 meters (200 feet) by 61 meters (200 feet) at the bottom and 122 meters (400 feet) by 122 meters (400 feet) at the top of diked sides. The inner structure rested within a sand-filled excavation that was 3 meters (10 feet) wide at the sides, 3 meters (10 feet) deep (parallel to the excavation) with 0.3-meter (1-foot) of underlying gravel. Both the inner and outer structures had a side slope ratio of 4:1. The 41-centimeter (16-inch) sewer entered 8 meters (27 feet) below the top of grade. A 107-centimeter (42-inch) drain line entered north of the 41-centimeter (16-inch) line, and 6 meters (20 feet) below the top of the structure. The natural ground elevation was 406 feet (124 meters) above mean sea level (MSL). An earthen dike with a slope ratio of 4:1 surrounded the unit from 2.1 meters (7 feet) below grade (bottom of outer structure) to 8 meters (26 feet) above the natural ground surface (top of structure). A 0.6-meter (2-foot) layer of riprap surrounded the earthen dike from natural grade to 3.4 meters (11 feet) above grade.

- Related Sites/ Structures:** The crib was related to the 107-KE/KW Retention Basins (116-KE-4, 116-KW-3). The crib received cooling water from the reactor via 100-K-55 and 100-K-56 cooling water effluent pipelines.
- Waste Type:** Process Effluent
- Waste Description:** The site received reactor coolant water from the 107-K Retention Basins during reactor outages due to fuel ruptures. The site received 107-K Basin cleanout slurry from February 1955 to May 1956.
- Closure Info:** Remedial action objectives and goals for the 116-K-1 site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives are documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (ROD) (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) (DOE-RL-96-17).

For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and nonradionuclide contaminants of concern (COCs). Waste site COCs identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (DOE RL 2001). The COCs for this site consisted of the following: cesium-137, cobalt-60, europium-152, europium-154, strontium-90, hexavalent chromium and total chromium.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern. Shallow zone samples (J01565 through J01574) were collected on November 24, 2003. Deep zone samples (J01541 through J01550) were collected on November 25, 2003. The overburden samples (J01552 through J01564) were collected December 2, 2003. Sample results are in the HEIS database.

At the completion of the remedial action, the total excavation was approximately 15,700 meters squared (168,900 square feet) in area with a maximum depth of approximately 11 meters (36 feet) below the uphill ground surface elevation. Approximately 101,396 metric tons (111,536 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

During remediation of the 116-K-1 Crib portions of 100-K-55 and 100-K-56 cooling water effluent pipelines that were within the remedial excavation footprint were removed. Excavations of these pipelines were terminated at the notched portion of the 116-K-1 Crib excavation along the southwest wall. Remediation of the remaining pipelines will be included in a future CVP.

The CVP demonstrated that remedial action at the 116-K-1 site has achieved the RAOs and corresponding RAGs established in the ROD (EPA 1997) and RDR/RAWP. The remaining soils (including overburden) at the 116-K-1 site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 116-K-1 site containing COCs at concentrations exceeding the RAGs have been excavated and disposed of at ERDF. These results also indicate that residual concentrations will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 116-K-1 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

Code:	116-K-2	Classification:	Accepted
Names:	116-K-2; 116-K-2 Trench; Bypass Crib Ditch; K Trench; 100-K Emergency Trench; 100-K Mile Long Trench; 107-K Effluent Trench	Reclassification:	Interim Closed Out (3/28/2006)
Type:	Trench	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The site has been remediated and interim closed out. The site has been backfilled and stabilized using the original spoil piles that were located on either side of the trench.		
Location:	The site was located northeast of 116-KE-4 (107-KE Retention Basins) and ran parallel to the river.		
Release Description:	During reactor operation, several washout areas were created along the river side of the unit. The unit was at a much higher elevation than the area between it and the Columbia River. The washout areas resulted from extensive seepage through the north side of the unit, which ran along the surface of the ground until reaching the river.		
Process Description:	The trench was fed by a 40.6 centimeter (16 inch) pipe that was part of the retention basin drain system. The trench was originally 1250 meters (4100 feet) long, 17.2 meters (56.5 feet) wide at the top, 1.2 meters (4 feet) wide at the bottom, and 5.3 meters (17.5 feet) deep. The side slope ratio was 1.5:1. The spoil piles on both sides of the trench originally had a top width of approximately 3.7 meters (12 feet). The site received all contaminated effluent from floor drains in the 105-KE and 105-KW Reactors, 105-KE and 105-KW Reactors metal storage basin overflow, Until 105-KE and 105-KW shut down around February 1, 1970, an undetermined amount of Retention Basin effluent leaked through 107-centimeter (42-inch) butterfly valves in the tank bottoms. Other periodic flows included low volume, neutralized, dummy decontamination waste, process-cooling water during charge/discharge; occasional special disposals; and occasional tanks of process cooling water that was collected after a fuel cladding failure. In 1972, a minor construction tractor and hydride tanks removed from 100-K Area facilities were buried in the trench. In 1978, the radioactive inventory at the site was calculated at 2,100 curies.		
Related Sites/ Structures:	The site was associated with 116-KE-4 and 116-KW-3 Retention Basins via the 100-K-55 and 100-K-56 pipelines.		
Waste Type:	Process Effluent		
Waste Description:	The site received all contaminated effluent from floor drains in the 105-KE and 105-KW Reactors (low volume) and approximately 1893 liters (500 gallons) per minute of 105-KE and 105-KW Reactors metal storage basin overflow. Until 105-KE and 105-KW shut down around February 1, 1970, an undetermined amount of Retention Basin effluent leaked through 107-centimeter (42-inch) butterfly valves in the tank bottoms. Leakage was estimated at 37,854 to 75,708 liters (10,000 to 20,000 gallons) per minute. The valve leakage showed a history of increase until the 1968 valve and tank renovation. Leakage gradually increased again after these repairs. Other periodic flows included low volume, neutralized, dummy decontamination waste, process-cooling water during charge/discharge; occasional special disposals; and occasional tanks of process cooling water that was collected after a fuel cladding failure. In 1972, a minor construction tractor and hydride tanks removed from 100-K Area facilities were buried in the trench. In 1978, the radioactive inventory at the site was calculated at 2,100 curies.		
Closure Info:	The site has been remediated in accordance with the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, (EPA 1997), (ROD Amendment). Remedial action objectives (RAOs) and remedial action goals (RAGs) for this site were originally documented in the Interim Action Record of Decision for the 100-BC-1,		

100-DR-1, and 100-HR-1 Operable Units, (EPA 1995), (ROD) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Soil cleanup levels were established in the interim action ROD based on a limited ecological risk assessment. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which included a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final ROD for this site.

The trench received liquid effluent waste via the retention basin drain system (100-K-55 and 100-K-56 pipelines). The liquid consisted of reactor cooling water effluent, overflow from the 105-KW and 105-KE Reactor Building fuel storage basins, contaminated liquid from the 105-KW and 105-KE Reactor Building floor drains, dummy decontamination waste, process cooling water following fuel cladding failures, and some special disposal. Up to 76,000 Liters per minute (20,000 gallons per minute) of leakage through the 100-K retention basin butterfly valves was also discharged to the trench. The 100-K Area was deactivated in 1971 and 1972, at which time the 116-K-2 trench was backfilled with the soil from the original excavation. A small construction tractor and all (empty) 100-K Area hydride tanks were also disposed in the trench during deactivation.

The waste site Contaminants of Concern (COCs) were refined from the list presented in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) for the site and included: carbon-14, cesium-137, cobalt-60, europium-152, europium-154, nickel-63, plutonium-239/240, strontium-90 and hexavalent chromium. The final cleanup verification sampling was conducted from July 6, 2005, to November 2, 2005, following variance analyses. The final verification samples were submitted to offsite laboratories for analysis. The cleanup verification sample analytical data are summarized in Appendix A of the Cleanup Verification Package (CVP-2006-00001) and will be stored in the Hanford Environmental Information System at a future date.

Remedial action activities were conducted from February 17, 2004, to October 27, 2005. Remediation involved excavation and staging of clean overburden material and removal of contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. The construction tractor and a small amount of concrete and steel debris were also excavated at the western end of the former trench.

Pre- and post-remediation topographic maps included in the CVP have been attached to the WIDS site in the photo tab. Approximately 55,540 meters squared (597,830 square feet) of plan area was excavated, including excavation within the deep zone (greater than 4.6 meters [15 feet] below ground surface) up to 7.6 meters (25 feet) below ground surface. Approximately 410,000 metric tons (451,900 U.S. tons) of contaminated material from the site was removed and disposed at the ERDF.

The CVP has documented that remedial action has achieved the RAOs and corresponding RAGs established in the ROD Amendment (EPA 1997) and the RDR/RAWP. The remaining soils at the site have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River. Institutional controls are required for the site to prevent drilling or excavation into deep zone soils. [NOTE: The statement of protectiveness contained within the CVP incorrectly cites that remediation achieved the RAOs/RAGs as cited in the 1995 ROD instead of the 1997 ROD Amendment as cited on the reclassification form.]

Code: 116-K-3	Classification: Accepted
Names: 116-K-3; 1904-K Outfall Structure; 1908-K Outfall Structure	Reclassification: None

Type:	Outfall	Start Date:	1/1/1955
Status:	Active	End Date:	
Description:	This site includes the concrete outfall structure. Differing from designs at other early reactors, two 213 centimeter (84 inch) retention basin lines do not discharge into the outfall structure, but passed directly and continuously under it, becoming the river effluent pipelines. In the event a pipeline became plugged downstream of the outfall structure, overflow standpipes inside the outfall would divert effluents into the concrete structure, and ultimately out the spillway.		
Location:	The site is located in the 100-K Area between the 100-K Area perimeter fence and the Columbia River.		
Process Description:	Process sewer wastes, and reactor cooling water collected and temporarily stored in the 116-KE-4 and 116-KW-3 retention basins, were pumped to the river via the outfall structure's associated 100-K-80 river effluent pipelines.		
Related Sites/Structures:	The site is associated with the 100-K-83 spillway, the 116-KE-4 and 116-KE-3 retention basins, the 100-K-55 and 100-K-56 process effluent lines, the 100-K-47 process sewer, and the 100-K-80 and 100-K-96 river effluent pipelines.		
Waste Type:	Construction Debris		
Waste Description:	The unit received reactor coolant water from the 107-K Retention Basins. The radionuclide content is unknown. The structure also received general area wastes through the concrete box sewer. The concrete box sewer wastes went into the single chamber of the structure and then drained into the two pipelines into the river.		
	The Contaminants of Potential Concern include Co-60, Cs-137, Eu-152, Eu-154, Pu-239/240, and Sr-90.		

Code:	116-KE-4	Classification:	Accepted
Names:	116-KE-4; 107-KE; 107-KE Retention Basins	Reclassification:	Interim Closed Out (6/30/2005)
Type:	Retention Basin	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The site has been remediated and interim closed out.		
Location:	The site was located northeast of 118-KE-1 (105-KE Reactor Building).		
Release Description:	The basins and their 1.5-meter (5-foot) diameter effluent line developed leaks during the site's operating life. The leakage rate from the butterfly valves (which went to an adjacent trench) could have been as high as 18,930 to 37,850 liters/minute (5,000 to 10,000 gallons/minute). Most of the basin leakage was diverted to an open canal and disposed to the river.		
Process Description:	The site consisted of three open top, carbon-steel tanks with steel bottoms. The circular basins were 6.1 meters (20 feet) apart. The basins received 105-KE reactor effluent via a 183-centimeter (72-inch) pipe. Additional effluent from the 150-KE Building was received via 61-centimeter (24-inch), 46-centimeter (18-inch), 10-centimeter (4-inch) and 7.6-centimeter (3-inch) steel pipes. Basin effluent was discharged to the outfall structure via a 152-centimeter (60-inch) pipe. Discharges to the 116-K-1 and 116-K-2 Trenches could be made through 91-centimeter (36-inch) pipes that combined flows in a 106-centimeter (42-inch) pipe.		
Related Sites/Structures:	The associated sites include 100-K-64 (100 KE Contaminated Flood Plain), 100-K-57 (107-KE Drainage Ditch), 100-K-41, 150-KE and 105-KE.		

Waste Type: Process Effluent

Waste Description: This site received cooling water effluent from the 105-KE Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Eighty percent of the total radionuclide inventory was contained within the soil adjacent to the basin.

Closure Info: The cleanup verification package documents that the site was remediated in accordance with the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, (ROD). Remedial action objectives and goals for the site were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP). The ROD provides the U.S. Department of Energy, Richland Operations Office the authority, guidance, and objectives to conduct this remedial action.

For the respective points of compliance, remedial action goals (RAGs) were established for the radionuclide and nonradionuclide contaminants of concern (COCs) in the RDR/RAWP. Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern. The COCs were identified in the 100 Area Remedial Action Sampling and Analysis Plan (SAP), they are: plutonium-239/240, cesium-137, cobalt-60, europium-152, europium-154, strontium-90c, uranium-233/234 and hexavalent chromium. Sample numbers reported to HEIS and listed in the CVP include: J026T5, J026T6, J026V0 through J026V9, J026W0 and J026W1.

Site excavation and waste disposal were complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the remedial action goals. Results of the sampling, laboratory analyses, and data evaluations for the site indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met. The remaining soils at this site have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River. This site has no deep zone; therefore, no deep zone institutional controls are required. The site was verified to be remediated in accordance with the ROD and may be backfilled.

Code: 116-KW-3	Classification: Accepted
Names: 116-KW-3; 107-KW; 107-KW Retention Basin	Reclassification: Interim Closed Out (4/12/2004)
Type: Retention Basin	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1970

Description: The site has been remediated and closed-out. The unit consisted of three open-top, carbon steel tanks with steel bottoms. The tanks were 61 meters (20 feet) apart. Decommissioning activities included removal of large steel access plates.

Location: The site was located north of 118-KW-1 (105-KW Reactor Building).

Release Description: The basins and their effluent lines developed leaks during their operating life. The leak rate from the butterfly valves (that went to an adjacent trench) could have been as high as 18,930 to 37,850 liters/minute (5,000 to 10,000 gallons/minute). Most of the basin leakage was diverted to an open canal and discharged to the Columbia River.

Process Description: The basins received 105-KW Reactor effluent via a 183-centimeter (72-inch) pipe. Additional effluent from the 150-KW Building was received via 61-centimeter (24-inch), 45.72-centimeter (18-inch), 10-centimeter (4-inch) and 7.6-centimeter (3-inch) steel pipes. Basin effluent was discharged to the outfall structure via a 152.4-centimeter (60-inch) pipe. Discharges to the 116-K-1 and 116-K-2 Trenches could be made through 91.4-centimeter (36-inch) pipes that combined flows in a 106-centimeter (42-inch) pipe.

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- Related Sites/ Structures:** The structures associated with the basins were 100-K-63 (100 K West Contaminated Flood Plain), 118-KW-1 (105-KW Reactor Building) and 116-KW-4 (150-KW Heat Recovery Station).
- Waste Type:** Process Effluent
- Waste Description:** This site received cooling water effluent from the 105-KW Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the basin.
- Closure Info:** Remedial action objectives and goals for the site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives were documented in the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units (EPA 1997) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

Waste site contaminants of concern (COCs) identified through process knowledge were listed in the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE/RL-96-22). The COCs identified in the SAP for this site consisted of cesium 137, cobalt-60, europium-152, europium-154, plutonium 239/240, strontium-90, uranium-233/234, uranium-235, hexavalent chromium, and semivolatile organic compounds (SVOCs).

Analytical results from verification sampling showed elevated values of SVOCs typically associated with asphalt. Asphalt was visibly present in the soil of the 116-KW-3 remedial excavation, and is known to have been a material used in the construction of the retention basins. Based on this information, the EPA agreed to exclude SVOCs as COCs (BHI 2003).

Cleanup verification samples, including QA/QC samples were collected from the basins and analyzed for the established COCs to verify attainment of the RAGs. Although shallow zone samples were collected between October 20, 2003 and October 22, 2003, only results for sample numbers J010N3 to J010N9, J010P8 and J010P9 have been reported to the HEIS database.

The pipelines beneath the retention basin floor will be addressed during the closeout of the effluent pipelines (100-K-55).

At the completion of remedial action, the excavation was approximately 17,240 meters squared (185,570 square feet) in area with an average depth of approximately 7.5 meters (25 feet). Approximately 171,898 metric tons (169,893 tons) of material, including soil, debris, and piping were removed from the 116-KW-3 site and disposed of at the Environmental Restoration Disposal Facility (ERDF).

The CVP demonstrates that remedial action at the site has achieved the RAOs and corresponding RAGs established in the approved ROD (EPA 1997) and RDR/RAWP (DOE/RL-96-17). The analytical and modeling results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The 116-KW-3 site is verified to be remediated in accordance with the ROD (EPA 1997) and may be backfilled.

100-KR-2

Code: 100-K-1 **Classification:** Accepted

Names: 100-K-1; 100-K-45; 119-KW Exhaust Air Sample Building French Drain; 119-KW French Drain **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 0.46 meter (1.5 foot) diameter concrete french drain that extends approximately 15 centimeters (6 inches) above the surrounding grade. It had a blue metal cover that is posted with "Confined Space" and "Surface Contamination" warning signs. A site visit in April 2000 found the area had been covered with cobble and surrounded with posts and chain. A sign reading "116-KW-1 Storage Basin French Drain is still marking the area.

Location: The site is located to the east of the 105-KW Reactor Building, north of the 116-KW Stack, and south of the 119-KW Exhaust Air Sample Building.

Waste Type: Water

Waste Description: The unit received heat exchanger cooling water from sample equipment in the 119-KW Building, wastewater from a swamp-type cooler and effluent from a floor drain also located in the 119-KW Building.

Code: 100-K-3 **Classification:** Accepted

Names: 100-K-3; 1706-KE Fish Pond Heat Exchanger Pit and Pump Pit; Water Studies Semi-Works **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1965

Description: This site includes two concrete pits, two concrete manholes, concrete encased pipelines and non-encased pipelines. This site includes those pipelines that were specific to the 1706-KE Water Studies Semi-Works, and does not include the large 0.9-meter (36-inch) or 1.8-meter (72-inch) 105-KE Reactor effluent pipelines. Heat Exchanger Pit: The Heat Exchanger Pit presently appears as a concrete pad. The structure is entirely below grade. A 1.2 by 3.0-meter (4 by 10-foot) access hatch is located at the south end. Adjacent to the access hatch is a square inlet ventilation pipe. At the north end is an exhaust vent pipe approximately 61 centimeters (24 inches) in diameter. On the west side of the pad, a 7.6-centimeter (3-inch) pipe extends approximately 0.3 meters (1 foot) above the surface of the pad. It is surrounded by a 4.9 by 7.3-meter (16 by 24-foot) yellow wooden fence and a light duty post and chain barricade posted with "Surface Contamination" signs. Pump Pit: Approximately 9.1 to 12.2 meters (30 to 40 feet) to the east of the Heat Exchanger Pit is a related structure, the Pump Pit, that also appears as a concrete pad. This structure is entirely below grade. The Pump Pit is approximately 2.4 by 2.4 meters (8 by 8 feet), including 15 to 20-centimeter (6 to 8-inch) thick walls. The pump is labeled on H-1-24913KE as PIE (Pile Effluent Water) Pump No. 2. The Pump Pit above-grade structure has been painted and is marked as a "Confined Space". Pipelines: The main 0.9-meter (36-inch) and 1.8-meter (72-inch) 105-KE Reactor effluent lines have been connected to smaller 0.9-meter (36-inch) diversion pipelines at the Pump Pit and just west of the Pump Pit and inline with the 1.8-meter (72-inch) effluent pipeline. These two pipelines, 7.6 centimeters (3 inches) in diameter from the 0.9-meter (36-inch) pipeline (identified on H-1-24974KE as PIE #2) and 7.6 centimeters (3 inches) in diameter from the 1.8-meter (72-inch) pipeline (identified on H-1-24974KE as PIE #1), enter the Heat Exchanger Pit. A 2.54-centimeter (1-inch) pipeline leaves the 105-KE Reactor close to the same location as the two main effluent lines and goes

directly to the Heat Exchanger Pit. This pipeline is labeled PIEX (Pile Effluent from Experimental Tubes) on H-1-24974KE. The Heat Exchanger egress pipelines run from the Heat Exchanger Pit to the 1706-KE Building where they enter the 1706-KE Building at the northwest corner of the building. These were the pipelines used to provide raw water and "cooled" process effluent to the fish troughs in the 1706-KE Wet Fish Studies Laboratory (Site: 100-K-52). They are a 20-centimeter (8-inch) raw water pipeline, a 2.54-centimeter (1-inch) PIE pipeline, and a 5.1-centimeter (2-inch) PIEX pipeline. A 3.8-centimeter (1.5-inch) PIE pipeline and a 5.1-centimeter (2-inch) pipeline leave the Heat Exchanger Pit and run to the Valve Pit at the front of the rectangular Fish Pond (Site: 100-K-4). Manholes: Two manholes, 1706-KE-1 and 1706-KE-2, are located at the inflections (elbows) in the pipelines running from the Heat Exchanger Pit to the 1706-KE Building. Each (electrical service - H-1-24913KE) manhole is a below-grade concrete-reinforced structure 1.6 meters long by 1.6 meters wide by 2.6 meters deep (4.6 feet long by 4.6 feet wide by 8.6 feet deep). Each manhole has a 15.2-centimeter (6-inch) sump in the bottom filled with 30.5 centimeters (12 inches) of 7.6 to 10-centimeter (3 to 4-inch) field stone below the bottom of the sump. The manholes extend above grade about 15 centimeters (6 inches).

Location: The 1706-KE Heat Exchanger Pit is located west of the northwest corner of the 105-KE Reactor Building. The Pump Pit is located to the east of the Heat Exchanger Pit.

Related Sites/ Structures: The site is related to 100-K-52, 1706-KE Wet Fish Studies Laboratory, 100-K-4, 1706-KE Wet Fish Studies Ponds and Valve Pit.

Waste Type: Process Effluent

Waste Description:

Code: 100-K-4	Classification: Accepted
Names: 100-K-4; 1706-KE Wet Fish Studies Ponds and Valve Pit	Reclassification: Interim Closed Out (8/4/2010)
Type: Pond	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1965

Description: This waste site has been demolished and removed. The site was two 9.1 meter (30 foot) diameter circular ponds separated by a 2.7 by 9.1 meter (9 by 30 foot) rectangular pond and valve pit. All ponds contained drains which presumably discharged to the process sewer.

Location: The ponds were located approximately 50 meters (164 feet) west of the northwest corner of the 105-KE Reactor Building.

Process Description: Waste Site 100-K-4, 1706-KE Wet Fish Studies Ponds and Valve Pit, supported the 1706-KE Wet Fish Studies Laboratory (Waste Site 100-K-52) and the 1706-KE Heat Exchanger Pit (Waste Site 100-K-3). Waste Site 100-K-52 was a small laboratory consisting of long troughs used to conduct wet fish studies using a mixture of raw water and heated effluent water from the 105-KE Reactor, which normally flowed to the Heat Exchanger Pit (100-K-3). Originally the laboratory was constructed to function as a backup laboratory in the event of shutdown of the 105-F Reactor and its associated aquatic biology laboratory. The 100-K-4 ponds were constructed in 1956 and operated intermittently through 1965, receiving mixed water effluents from the Laboratory (100-K-52).

Related Sites/ Structures: The site was related to the 1706-KE Wet Fish Studies Laboratory (Site: 100-K-52) and the 1706-KE Heat Exchanger Pit (Site: 100-K-3). Process piping connected the ponds to the Heat Exchanger Pit (100-K-3).

Waste Type: Water

**Waste
Description:**

Closure Info: The selected remedy for waste site 100-K-4 was Remove, Treat and Dispose. This was achieved through removal and disposal of the 1706-KE Wet Fish Studies Ponds and Valve Pit and remediation of underlying contaminated soil. DOE/RL-2010-43 demonstrates that the 100-K-4 Waste Site meets the objectives to achieve the Interim Closed Out status as established in the RDR/RAWP for the 100 Area (DOE/RL-96-17) and the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses and allow for unrestricted use of shallow-zone soils (i.e. surface to 4.6 meters or 15 feet deep) and deep-zone soils (i.e. below surface >4.6 meters or >15 feet deep). The results demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. Completion of this remedial action, satisfies the interim waste site remedial requirements under CERCLA by meeting the Remedial Action Goals/Objectives and requirements set forth in the 100 Area Remaining Sites Record of Decision (EPA/ROD/R10-99/039) and the RDR/RAWP for the 100 Area DOE/RL-96-17).

The Contaminants of Concern (COC) for the 100-K-4 Waste Site include radioactive contaminants Co-60, Eu-155, Sr-90, Cs-137, Pu-238, Pu-239/240, U-235, U-234, Eu-152 and Eu-154. Nonradioactive contaminants include Pb, Cd, Cr+6, Hg and Cr (total). The COCs were selected based on the COCs for 100-K-52 (1706-KE Wet Fish Studies Laboratory) as an analogous site because 100-K-52 and 100-K-4 shared the same influent systems.

The waste site excavation was initiated in January of 2010 and completed in February of 2010. Scans for radioactivity during the remediation indicated minor residual radioactivity in the drains. The concrete ponds and associated piping were removed and disposed. The waste site was excavated to a maximum depth of approximately 5.37 meters (17.6 feet) in the deep zone of the excavation. A total of 2,989.26 tons of soil and debris were disposed of at the ERDF. No cracking was noted in the concrete and the piping appeared to be intact. The 100-K-4 Waste Site remediation coincided with the ongoing remediation of the 100-K-3, 100-K-47, and 100-K-56 Waste Sites.

Code: 100-K-5	Classification: Accepted
Names: 100-K-5; 1705-KE French Drain	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site is a french drain consisting of a 0.9 meter (3 foot) diameter vitrified clay pipe which protrudes approximately 0.3 meter (1 foot) above grade and has a heavy wooden cover.	
Location: The site is located just east of the 1705-KE Water Treatment Facility.	
Waste Type: Process Effluent	
Waste Description: The site received waste effluent from floor drains, overflows, and drainage from the 1705-KE Experimental Water Treatment Basin and facilities.	

Code: 100-K-6	Classification: Accepted
Names: 100-K-6; 105-KE Vacuum Pit; Cyclone Separator; Vacuum Pit	Reclassification: None
Type: Process Unit/Plant	Start Date:
Status: Inactive	End Date:
Description: The vacuum pit contains a cyclone separator in a vertically oriented 3-meter (10-foot) diameter	

culvert which extends from grade level to 9.2 meters (30 feet) below grade.

Location: The site is located on the east side of the 105-KE Reactor Building and just south of the reactor stack.

Process Description: The cyclone separator was used to separate solids from the vacuum air stream.

Related Sites/ Structures: The site is associated with the Turco Pit in the 105-KE Reactor Building.

Waste Type: Soil

Waste Description: The soil beneath the steam turbine is reported to have been contaminated with radioactive materials and was covered with about 0.3 meters (1 foot) of gravel. The dose rate at the pit opening on January 20, 1994 was slightly less than 2 millirad/hour, suggesting a higher dose rate at the pit bottom.

Code: 100-K-13 **Classification:** Accepted

Names: 100-K-13; French Drain West of the 166-KW Oil Storage Tank Facility **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is a 1.5 meter (5-foot) diameter vertical concrete pipe filled with gravel. Prior to the construction of the Cold Vacuum storage Facility, the drain had been almost flush with the ground surface. Facility construction required the area to be graded. The construction project has scraped the ground down about 1.8 meters (6 feet) leaving the french drain about 2.3 meters (7.5 feet) above ground level. The french drain is now covered by a corrugated metal caisson to protect the french drain structure. Prior to current construction activities, the drain extended above grade about 0.46 meters (1.5 feet) and was surrounded by a yellow wooden barricade. The french drain has no markings of any kind. No other documentation or drawings could be found that identify the site or its purpose. Prior to current construction, no facilities were close to the site.

Location: The site was located on a small rise that is west of the southwest corner of the 166-KW Oil Storage Tank Facility and 10.4 meters (34 feet) west of the small access road that runs along side of the 166-KW. The Cold Vacuum Storage Facility was recently built in this area and graded the area to accommodate construction.

Code: 100-K-14 **Classification:** Accepted

Names: 100-K-14; 183-KE Acid Neutralization Pit and Overflow French Drain **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The pit is 4.6 meters (15 feet) deep with a bottom dimension of 1.5 meters (5 feet) in diameter. Eight to thirteen-centimeter (3 to 5 inch) aggregate was placed to a depth of 2.1 meters (7 feet). A 0.76 meter (2.5 foot) diameter, 2.4-meter (8 foot) long vitrified clay pipe (VCP) was placed vertically in the center of the pit and 1.2 meters (4 feet) of aggregate were placed around the pipe exterior. Approximately 1.5 meters (5 feet) of limestone chips were added to the pipe interior. A 5.1-centimeter (2 inch) schedule 80 polyvinyl chloride (PVC) pipe enters through the side 1 meter (3.3 feet) below grade. The pipe is an overflow and drain line for the 183-KE Day Use Acid Tank. The pit was then backfilled to grade. The VCP is exposed a few inches

above grade and is covered with a 0.64 centimeter (0.25 inch) steel plate with four 2.54 centimeter (1 inch) vent holes. Four steel yellow corner posts surround the above grade VCP.

Location: The site is located near the 183-KE Alum Storage Tanks, 11 meters (36 feet) southeast of the railroad track, and directly south of the 183-KE Head House.

Related Sites/ Structures: The site received overflow and drainage from the 183-KE Day Use Acid Tank.

Waste Type: Chemicals

Waste Description: The site received sulfuric acid overflow and drainage from the 183-KE Day Use Acid Tank.

Code: 100-K-18 **Classification:** Accepted

Names: 100-K-18; 183-KW Caustic Neutralization Pit **Reclassification:** None

Type: Sump **Start Date:**

Status: Inactive **End Date:**

Description: The pit is a 2.54 meter (8.3 foot) long, 1.93 meter (6.3 foot) wide, 0.9 meter (3 foot) deep brick lined concrete box with a wooden cover. The pit was constructed in such a way that small volumes of waste chemicals could be held up in a brick lined compartment for neutralization. After neutralization, waste was flushed to a larger compartment within the structure, which then drained to the process sewer.

Location: The site is northeast of the 183-KW Head House, northwest of the railroad tracks running in front of 183-KW, and southeast of the grade-level concrete base of the old caustic soda storage tank.

Waste Type: Process Effluent

Waste Description: The pit received, neutralized, and disposed of caustic (sodium hydroxide) waste from overflow and transfers associated with the 183-KW water treatment system.

Code: 100-K-19 **Classification:** Accepted

Names: 100-K-19; 183-KW Caustic Soda Storage Tank Site **Reclassification:** None

Type: Foundation **Start Date:** 1/1/1954

Status: Inactive **End Date:**

Description: The site was originally an above-ground, cylindrical, vertical steel storage tank on a concrete base. The above-ground tank was 7.8 meters (25.5 feet) in diameter with a 287,660 liter (76,000 gallon) capacity. Some time in the past (date unknown) the tank was removed. Today, the site is the 9.1-meter (30-foot) diameter grade-level concrete tank base and the soil surrounding the base.

Location: The site is located 12.2 meters (40 feet) northeast of the southeast corner of the 183-KW Head House and 4.6 meters (15 feet) northwest of the railroad tracks in front of 183-KW.

Release Description: Spills may have occurred near the tank and the piping system may have developed leaks. This is likely to have resulted in sodium hydroxide leaking to the soil beneath and around the tank. No known sampling has been performed at this site.

Process Description: Caustic soda (sodium hydroxide) was injected into the filtered water as a pH correction. It was proportioned and metered in a single step operation. Caustic soda was injected into a softened water stream in the 183-KE Head House. The softened water was used as a dilutant and as a

vehicle to transport the caustic to the injection point at the clearwells. Since caustic soda was injected at only two points, the proportioning was regulated by the half plant effluent rate. Sodium hydroxide was also used to regenerate the ion exchange columns in the water softener system and for maintaining a neutral pH of the reactor cooling water. It was most likely the neutralizing agent for excess or spilled sulfuric acid that was used in the 183-K facilities.

Related Sites/ Structures: The site was related to the 183-KW Head House that controlled and monitored water quality. The site was also related to the 100-K-18 Neutralization Pit. Overflow and transfer waste from this tank was routed to the nearby caustic neutralization pit.

Waste Type: Chemical Release

Waste Description: The unit was used to store sodium hydroxide. Spills may have occurred near the unit. The piping system may have developed leaks. This is likely to have resulted in sodium hydroxide in the soil beneath and around the unit.

Code: 100-K-25 **Classification:** Accepted

Names: 100-K-25; 183-KE Caustic Neutralization Pit **Reclassification:** None

Type: Sump **Start Date:**

Status: Inactive **End Date:**

Description: The 183-KE Caustic Neutralization Pit is an underground concrete structure used to neutralize caustic waste prior to disposal. The structure has been backfilled and covered to grade with gravel. The "pit" is a concrete box that is lined with acid-proof bricks. A 10.2-centimeter (4-inch) vitrified tile drain was located in the bottom of the pit and discharged the neutralized waste to the process sewer. The top of the pit was level with the surface and had a 7.6-centimeter (3-inch) plank cover.

Location: The site is located near the 183-KE Head House, southeast of the 183-KE Caustic Soda Storage Tank Site (100-K-27).

Process Description: The pit received, neutralized, and disposed of caustic waste from overflow and transfers associated with water treatment at 183-KE. The method of caustic neutralization is not known.

Related Sites/ Structures: The pit was used to neutralize and dispose of caustic overflow and transfer waste associated with the caustic soda tank and the 183-KE water treatment process. After neutralization, the waste was drained to the process sewer.

Waste Type: Chemicals

Waste Description: The pit received and neutralized sodium hydroxide waste.

Code: 100-K-27 **Classification:** Accepted

Names: 100-K-27; 183-KE Caustic Soda Storage Tank Site **Reclassification:** None

Type: Foundation **Start Date:** 1/1/1954

Status: Inactive **End Date:**

Description: The site was originally an above-ground, cylindrical, vertical steel storage tank on a concrete base. The above-ground tank was 7.8 meters (25.5 feet) in diameter with a 287,660-liter (76,000-gallon) capacity. Some time in the past (date unknown) the tank was removed. Today, the site is the 9.1-meter (30-foot) diameter grade-level concrete tank base and the soil surrounding the base.

Location:	The site is located 12.2 meters (40 feet) northeast of the southeast corner of the 183-KE Head House and 4.6 meters (15 feet) northwest of the railroad tracks in front of 183-KE.
Release Description:	Spills may have occurred near the tank and the piping system may have developed leaks. This is likely to have resulted in sodium hydroxide leaking to the soil beneath and around the tank. No known sampling has been performed at this site.
Process Description:	Caustic soda (sodium hydroxide) was injected into the filtered water as a pH correction. It was proportioned and metered in a single step operation. Caustic soda was injected into a softened water stream in the 183-KE Head House. The softened water was used as a dilutant and as a vehicle to transport the caustic to the injection point at the clearwells. Since caustic soda was injected at only two points, the proportioning was regulated by the half plant effluent rate. Sodium hydroxide was also used to regenerate the ion exchange columns in the water softener system and for maintaining a neutral pH of the reactor cooling water. It was most likely the neutralizing agent for excess or spilled sulfuric acid that was used in the 183-K facilities.
Related Sites/ Structures:	The site was related to the 183-KE Head House that controlled and monitored water quality. The site was also related to the 100-K-25 Neutralization Pit. Overflow and transfer waste from this tank was routed to the nearby caustic neutralization pit.
Waste Type:	Chemical Release
Waste Description:	The tank was used to store sodium hydroxide. There is a possibility the tank and/or piping may have leaked.

Code:	100-K-29	Classification:	Accepted
Names:	100-K-29; 183-KE Sandblasting Site	Reclassification:	Interim Closed Out (6/24/2004)
Type:	Dumping Area	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and Interim Closed Out. Before remediation the site surface was gravel/cobble and purple garnet. It was irregularly shaped and covered an area of 46 meters (50 yards) x 127 meters (30 yards).		
Location:	Located 40-feet SW of the 183-KE Chlorine Storage Vault and just west of the 183-KE Alum Storage Tanks (126-KE-1 and 126-KE-2).		
Process Description:	In the early 1980s, steel components from the 183-KE settling basins were sandblasted at this site prior to being sold as scrap. The site consisted of surface gravel/cobble and red/purple garnet.		
Waste Type:	Chemicals		
Waste Description:	At this site in the early 1980's, steel components from the 183-KE settling basins were sandblasted prior to being sold as scrap. Sampling in 1989 indicated the material present to be nonregulated for EP Toxicity.		
Closure Info:	Sampling and evaluation of this site has been performed in accordance with remedial action objectives and goals established by the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (Remaining Sites ROD).		
	The contaminants of concern (COCs) included in verification sampling were total chromium, lead, hexavalent chromium, and polychlorinated biphenyls (PCBs) (Aroclor 1254).		

A phased sampling approach was implemented at the site based on site photographs, historical use information, suspected waste materials, and statistical information. Confirmatory sampling was conducted during April 2003. The analytical laboratory results for total chromium, lead, hexavalent chromium, and Aroclor-1254 exceeded action levels, indicating that site remediation (remove, treat, and dispose) was required. A cleanup action was implemented during December 2003, removing the sandblast media and approximately 5.1 centimeters (2 inches) of underlying soil from the site. Verification sampling was also conducted during December 2003.

A total of 187 metric tons (206 tons) of sandblast media and underlying soil were removed and disposed of it at the Environmental Restoration Disposal Facility. The maximum detected results from underlying soil samples collected at locations suspected of having the greatest potential for contamination were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection.

The current site conditions have achieved the RAOs and the corresponding RAGs established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL 2004) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA 1999). These results also show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario, and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. The site was not a deep zone site (i.e., below 4.6 meters [15 feet]); therefore, deep zone institutional controls are not required.

Code:	100-K-30	Classification:	Accepted
Names:	100-K-30; 183-KE Sulfuric Acid Tank Bases (West Tank)	Reclassification:	Interim Closed Out (8/2/2004)
Type:	Storage Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed out. The site consisted of two above ground U-shaped concrete bases and above ground piping. A cylindrical tank laid horizontally on the two concrete U-shaped bases. The tank measured 3 meters (10 feet) in diameter, 10 meters (33 feet) long and had a 77,140-liter (20,380-gallon) capacity. It is unknown when the tank was removed.		
Location:	The site was located in the 100-K Area. It was 8.2 meters (27 feet) northeast of 120-KE-4.		
Process Description:	The 183-KE Sulfuric Acid Storage Tank was associated with 183-KE Water Treatment Plant. West of this tank were two smaller sulfuric acid tanks (120-KE-4 and 120-KE-5) which were used for the same purpose. East of the tank was another tank the same size, that was used for the same purpose.		
Related Sites/ Structures:	The site was associated with 100-K-31 and the 183-KE Water Treatment Plant.		
Waste Type:	Chemicals		
Waste Description:	The tank bases held a tank that was used to store sulfuric acid.		
Closure Info:	Results from confirmatory sampling that had been conducted during April 2003 were used to make decisions for reclassifying the site in accordance with the waste site reclassification		

guideline TPA-MP-14 (DOE RL 1998) process. In January 2004, a remedial action activity was implemented to remove the stained concrete bases and felt material from the site for subsequent disposal at the Environmental Restoration Disposal Facility.

The phased sampling approach that was implemented at the waste site was based on site photographs, historical acid tank use information, suspected waste materials, and statistical information. The analytical laboratory results for the soil achieved compliance with the RAOs. However, the analytical laboratory results for concrete bases and felt material exceeded action levels, indicating that the concrete bases and felt material required removal. A waste removal action was implemented during January 2004, removing the concrete bases and felt material from the site. Since the soil already met the RAOs, no further verification sampling was required.

The sampling results supported a reclassification of the waste site to interim closed out. The maximum detected results from underlying soil samples collected at locations suspected of having the greatest potential for contamination were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The sample results are stored in the Environmental Restoration (ENRE) Project-Specific Database prior to archiving in the Hanford Environmental Information System (HEIS) and are summarized in the appendix B of the RSVP.

The site sample results demonstrated that the site achieved the remedial action objectives (RAOs) and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly called the Remaining Sites Record of Decision) (EPA 1999). These results also show that residual soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario; that residual concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]); and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 100-K-31	Classification: Accepted
Names: 100-K-31; 183-KE Sulfuric Acid Tank Bases (East Tank)	Reclassification: Interim Closed Out (8/2/2004)
Type: Storage Tank	Start Date:
Status: Inactive	End Date:
Description: The site has been remediated and interim closed out. The site consisted of two above ground U-shaped concrete bases and above ground piping.	
Location: The unit was located 14.3 meters (47 feet) northeast of 120-KE-4 (60 degrees).	
Process Description: The Sulfuric Acid Storage Tank was associated with 183-KE Water Treatment Plant. West of this tank are two smaller sulfuric acid tanks (120-KE-4 and 120-KE-5) and another tank the same size as the one described here, all of which were used for the same purpose.	
Related Sites/Structures: This site was associated with sites 100-K-30 and 100-K-32 and the 183-KE Water Treatment Plant.	
Waste Type: Chemicals	
Waste Description: The tank was used to store sulfuric acid.	

Closure Info: Results from confirmatory sampling that had been conducted during April 2003 were used to make decisions for reclassifying the site in accordance with the waste site reclassification guideline TPA-MP-14 (DOE/RL-1998) process. In January 2004, a remedial action activity was implemented to remove the stained concrete bases and felt material from the site for subsequent disposal at the Environmental Restoration Disposal Facility.

The confirmatory sampling analytical laboratory results for barium, hexavalent chromium, lead, and mercury exceeded the direct exposure and/or groundwater protection action levels for soil. For the concrete samples, the maximum detected results for barium, cadmium, and hexavalent chromium exceeded the applicable RAGs. This indicated that site remediation (remove, treat, and dispose) was required. A cleanup action was implemented during December 2003, removing the concrete bases and about 0.61 meters (2 feet) of contaminated soil from the 100-K-31 site and disposing of them at the Environmental Restoration Disposal Facility. The COCs included in verification sampling were chromium (hexavalent and total), arsenic, barium, cadmium, lead, and mercury. Although arsenic, cadmium, and total chromium did not exceed the RAGs during confirmatory sampling of site surface soils, they were included in the verification sampling to ensure that they were not present above action levels below the ground surface.

The sampling results supported a reclassification of the waste site to interim closed out. The maximum detected results from underlying soil samples collected at locations suspected of having the greatest potential for contamination were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. The sample results are stored in the Environmental Restoration (ENRE) Project-Specific Database prior to archiving in the Hanford Environmental Information System (HEIS) and are summarized in the appendix B of the RSVP.

The sample results demonstrated that the site achieved the remedial action objectives (RAOs) and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington (commonly called the Remaining Sites Record of Decision) (EPA 1999). Evaluation of sampling results also demonstrate that residual soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario; that residual concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]); and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code: 100-K-32	Classification: Accepted
Names: 100-K-32; 183-KW Sulfuric Acid Tank Bases (East Tank)	Reclassification: Interim Closed Out (7/27/2004)
Type: Storage Tank	Start Date:
Status: Inactive	End Date:
Description:	The site has been remediated and interim closed out. The unit consisted of two above-ground U-shaped concrete bases and aboveground piping. The U-shaped bases were 3.7 meters (12 feet) wide, 1.2 meters (4 feet) long, 1.8 meters (6 feet) high, and 10 meters (33 feet) apart. The surface soils were stained with what appeared to be acid residue.
Location:	The site was located east of the 183-KW Head House, south of the end of the railroad tracks and 14.3 meters (47 feet) northeast (60 degrees) of 120-KW-4.
Process	A cylindrical tank (which appeared at the site in a March 1962 photograph) laid horizontally on

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- Description:** two concrete U-shaped bases. The tank was 3 meters (10 feet) in diameter, 10 meters (33 feet) long and had a 77,140-liter (20,380-gallon) capacity. It was unknown when the tank was removed.
- Related Sites/ Structures:** The Sulfuric Acid Storage Tank was associated with 183-KW Water Treatment Plant. West of this tank were two smaller sulfuric acid tanks (120-KW-3 and 120-KW-4) and another tank (100-K-33) the same size as the one described here, all of which were used for the same purpose.
- Waste Type:** Soil
- Waste Description:** The soil was contaminated from sulfuric acid leaks or spills.
- Waste Type:** Equipment
- Waste Description:** Two concrete tank pedestals and associated sulfuric acid piping were at the site.
- Closure Info:** The results of the verification sampling event were used to make decisions for reclassifying the site in accordance with the Waste Site Reclassification Guideline TPA-MP-14 (DOE-RL 1998) process.

Verification sampling was conducted during December 2003 and January 2004. The verification sampling results indicated that the cleanup action had achieved compliance with the remedial action objectives (RAOs) for the site.

Confirmatory sampling was conducted during April 2003, using a phased sampling approach. Field screening for pH measurements following a systematic grid of the site, plus screening of soil-stained areas, was used to determine the focused/judgmental soil and waste material sample locations for laboratory analysis. The focused/judgmental sample strategy was also based on visual evaluation of the site, photographs, operational history, and suspected waste materials. In addition, biased samples of the remaining felt padding and stained areas on the concrete bases were collected. A total of four soil samples, two concrete samples, a felt sample, and field quality control samples were analyzed for contaminants of potential concern (COPC). The COPCs included arsenic, asbestos, barium, cadmium, chromium (hexavalent and total), lead, selenium, silver, mercury, sulfate, and pH. In addition, the felt sample was analyzed for polychlorinated biphenyls (aroclor).

The April 2003 analytical laboratory results for cadmium (concrete), total chromium (concrete), lead (soil), and mercury (soil) exceeded action levels, indicating that site remediation (remove, treat, and dispose) was required. A cleanup action was implemented during December 2003, removing the concrete bases (including the felt) and about 0.61 meters (2 feet) of contaminated soil from the site and disposing of it at the Environmental Remediation Disposal Facility.

This report demonstrated that the site has met the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (commonly called the Remaining Sites ROD) (EPA 1999).

Evaluation of sampling results from the site demonstrated that residual soil contaminant concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario, that residual concentration supports unrestricted future use of shallow zone soil (i.e., surface to 4.6 meters [15 feet]), and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River.

Code:	100-K-33	Classification:	Accepted
Names:	100-K-33; 183-KW Sulfuric Acid Tank Bases (West Tank)	Reclassification:	Interim Closed Out (8/24/2004)
Type:	Storage Tank	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and interim closed out.		
Location:	The unit was located 8.2 meters (27 feet) northeast (60 degrees) of 120-KW-4.		
Process Description:	The unit consisted of two above-ground U-shaped concrete bases and above-ground piping. The U-shaped bases were 3.7 meters (12 feet) wide, 1.2 meters (4 feet) long, 1.8 meters (6 feet) high, and 10 meters (33 feet) apart. A cylindrical tank laying horizontally on the two concrete U-shaped bases was observed in a March 1962 photograph. The tank was 3 meters (10 feet) in diameter, 10 meters (33 feet) long and had a 77,140-liter (20,380-gallon) capacity. The tank was used to store sulfuric acid and was removed at an unknown date.		
Related Sites/ Structures:	The Sulfuric Acid Storage Tank was associated with 183-KW Water Treatment Plant. West of this tank were two smaller sulfuric acid tanks (120-KW-3 and 120-KW-4) which were used for the same purpose. East of the tank location described by this entry was another tank (100-K-32) the same size that was used for the same purpose.		
Waste Type:	Chemicals		
Waste Description:	The unit consisted of two above-ground U-shaped concrete bases and above-ground piping. The U-shaped bases were 3.7 meters (12 feet) wide, 1.2 meters (4 feet) long, 1.8 meters (6 feet) high, and 10 meters (33 feet) apart. A cylindrical tank laying horizontally on the two concrete U-shaped bases was observed in a March 1962 photograph.		
	The tank was used to store sulfuric acid and was removed at an unknown date.		
Closure Info:	A remedial action was implemented in December 2003, the concrete bases (including the felt) were removed and about 30 cubic meters (990 cubic feet) of contaminated soil. The soil was disposed of at the Environmental Restoration Disposal Facility.		
	A test pit was dug in the center of the excavation [depth of 4 meters (13 feet)] to collect soil data on mercury for RESidual RADioactivity (ANL 2002) modeling and characterize the potential depth of metals contamination beneath the other 100-K Area sulfuric acid tanks (100-K-30, 100-K-31, and 100-K-32).		
	Following remediation, verification sampling was conducted during December 2003 and January 2004. The post-remediation verification sampling contaminants of concern (COCs) for the 100-K-33 waste site were identified based on the results of the confirmatory sampling effort. The primary COCs that required soil remediation were mercury and hexavalent chromium. As additional information, the post-remediation verification samples were also analyzed for arsenic, barium, cadmium, total chromium, and lead. The verification sample analyte list did not include pH because it only served as an indicator of possible site contamination during confirmatory sampling. Selenium, silver, and sulfate were excluded from verification sample analysis based on their low confirmatory sample concentrations. Asbestos and PCBs were not included as verification sample COCs because they were associated with the felt and tar, which were removed. The verification sample results were stored in Bechtel Hanford's Environmental Restoration (ENRE) database prior to being archived in the Hanford Environmental Information System (HEIS) at a future time. The sample results are included in Appendix B of the RSVP. The results indicated that the remedial action achieved compliance with the remedial action objectives for the site. The results of the verification sampling were used to support decisions to reclassify the site in accordance with the waste site reclassification		

guideline TPA-MP-14 (DOE-RL 1998) process.

In accordance with this evaluation, the verification sampling results support a reclassification of this site to interim closed out. The current site conditions have achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA 1999). These results also indicate that the site will support future land uses that can be represented (or bounded) by a rural residential scenario, and that the site is protective of groundwater and the Columbia River.

Code: 100-K-34	Classification: Accepted
Names: 100-K-34; 183-KW Acid Neutralization Pit	Reclassification: None
Type: Sump	Start Date:
Status: Inactive	End Date:
Description: The unit consists of 2.5 by 1.9-meter (8.3 by 6.3-foot) brick-lined concrete boxes. The boxes are 1.5 meters (5 feet) deep and backfilled with crushed limestone. Drain pipes entered about 0.6 meters (2 feet) below grade and emptied into a 0.9-meter (3-foot) diameter vitrified clay pipe (VCP) placed vertically in limestone chips. The VCP is filled with limestone chips. The VCP is broken at the top.	
Location: The unit is located in the 100KW Area, adjacent and 0.6 meters (2 feet) west of 183-KW and 3.7 meters (12 feet) east of the 183-KW Chlorine Vault.	
Related Sites/ Structures: The site received transfer and overflow waste from nearby sulfuric acid tanks associated with the 183-KW Water Treatment Plant. The site drained to the process sewer.	
Waste Type: Chemicals	
Waste Description: The site was used to neutralize and dispose of overflow and transfer waste from nearby sulfuric acid tanks.	

Code: 100-K-35	Classification: Accepted
Names: 100-K-35; 183-KE Acid Neutralization Pit	Reclassification: None
Type: Sump	Start Date:
Status: Inactive	End Date:
Description: The site is a below grade 2.5 meter by 1.9 meter (8.33 feet by 6.33 feet) brick-lined concrete box, approximately 1.5 meters (5 feet) deep and backfilled with crushed limestone. Drain pipes entered the pit approximately 0.6 meters (2 feet) below grade and emptied into a vertical 0.9 meter (3 foot) diameter vitrified clay pipe. The vitrified clay pipe is also filled with limestone chips and appears to be broken at the top. The site is covered by a wooden lid labeled "Confined Space" and is surrounded by post and chain.	
Location: The site is located between the 183-KE Head House and the 183-KE chlorine vault.	
Related Sites/ Structures: The site received transfer and overflow waste from nearby sulfuric acid tanks associated with the 183-KE Water Treatment Plant. The site drained to the process sewer.	
Waste Type: Chemicals	
Waste Description: The site was used to neutralize and dispose of overflow and transfer waste from nearby sulfuric acid tanks.	

Code: 100-K-36	Classification: Accepted
Names: 100-K-36; 1706-KE Chemical Storage Facility Dry Well	Reclassification: None
Type: French Drain	Start Date: 1/1/1962
Status: Inactive	End Date:
Description:	The site is a dry well (french drain) that was added to the 1706-KE Building as part of the Chemical Storage Facility. The drain is located at grade level and centered between the 1706-KE Caustic Tank and the 1706-KE Sulfuric Acid Tank. The site is constructed from an 0.46 meter (18 inch) vitrified clay pipe that is 1.2 meters (4 feet) long and extends 7.6 centimeters (3 inches) above grade. The site is filled to grade with crushed limestone. Overflow and drain pipes [two 5.1 centimeter (2 inch) pipelines from each chemical storage tank] extend to just above the surface of the limestone fill.
Location:	The site is located in the southeast corner and adjacent to the 1706-KE Building. The site is between the 100-K-37, 1706-KE Sulfuric Acid Tank and 100-K-38, 1706-KE Caustic Soda Tank.
Release Description:	The dry well is located either directly above or near an underground tunnel to the 105-KE Reactor Building. At a point within the tunnel very near the drain a white crystalline material can be seen in the cracks of the tunnel ceiling. This may be sodium hydroxide from the 100-K-38, 1706-KE Caustic Soda Tank. A former site employee reports that small spills did occur during filling operations of the storage tanks on several occasions.
Process Description:	The chemical storage facility at 1706-KE was installed in 1963 to provide bulk quantities of 93 percent by weight sulfuric acid and 50 percent by weight sodium hydroxide. The chemicals were used to regenerate the ion columns in the 1706-KE demineralizer plant. The demineralizer plant supplied demineralized water to two experimental single pass process tube in the 105-KE reactor core. The demineralizer plant was a duplex unit with two sets of ion columns. It operated with one set in service and the other either being regenerated or in a ready-standby condition. Typically three regenerations were performed each day during this period. Shipping manifests indicate that approximately 7,948.5 liters (2100 gallons) of sulfuric acid and 10,976.5 liters (2900 gallons) of sodium hydroxide were delivered to 1706-KE at 4-6 week intervals. In 1971, the 100-K production reactors were shut down and the demineralizer plant was deactivated. It was reactivated some years later to provide demineralized water to the 100-K area fuel storage basins. The quantity of demineralized water produced during this period of operation was a small fraction of that produced during reactor operation. Thus, the number of regenerations was steadily reduced from an initial amount of approximately 12 times per year to 3 times per year when the demineralizer plant was finally taken out of service.
Related Sites/Structures:	The site is related to the 1706-KE Building, 100-K-37, 1706-KE Sulfuric Acid Tank, and 100-K-38, 1706-KE Caustic Soda Tank.
Waste Type:	Chemicals
Waste Description:	A white crystalline material that may be sodium hydroxide can be seen in cracks of the tunnel. This may indicate that large quantities of sodium hydroxide and/or water have been disposed to this drain.

Code: 100-K-37	Classification: Accepted
Names: 100-K-37; 1706-KE Sulfuric Acid Tank	Reclassification: Interim Closed Out (8/4/2010)
Type: Storage Tank	Start Date: 1/1/1963

Status: Inactive**End Date:** 1/1/1986

Description: The site consists of an above ground, vertical, stainless steel storage tank. The tank rests on a redwood timber deck above a 1.4 meter (4.45 foot) service space (at grade) that is protected by guard posts. A 5.1 centimeter (2 inch) fill line for tank truck usage is also located in the same area. Two 5.1 centimeter (2 inch) drain lines, one for vent and overflow and the other for valve leakage, enter a french drain (Site: 100-K-36) that is located (in the service area) between the caustic soda tank (100-K-38) and the sulfuric acid tank. The tank has a liquid level gauge, a 5.1 centimeter (2 inch) fill line, and a vent and overflow line. The top of the tank could be accessed via a ladder and platform at the top elevation of the tank. The tank was constructed with a bottom sloping towards the drain. When installed, the tank was shimmed to level it.

Location: The site is located southeast of the reactor and adjacent to the 1706-KE Building. 1706-KE Building, 0-Foot Level from the Part B Application shows the location of the tank.

Release Description: Site employees report that during operational history, the tank was rinsed down on a few occasions and the material went to the general soil area.

Process Description: The chemical storage facility at 1706-KE was installed in 1963 to provide bulk quantities of 93 percent by weight sulfuric acid and 50 percent by weight sodium hydroxide. The chemicals were used to regenerate the ion columns in the 1706-KE demineralizer plant. The demineralizer plant supplied demineralized water to two experimental single pass process tube in the 105-KE reactor core. The demineralizer plant was a duplex unit with two sets of ion columns. It operated with one set in service and the other either being regenerated or in a ready-standby condition. Typically three regenerations were performed each day during this period. Shipping manifests indicate that approximately 7,948.5 liters (2100 gallons) of sulfuric acid and 10,976.5 liters (2900 gallons) of sodium hydroxide were delivered to 1706-KE at 4-6 week intervals. In 1971, the 100-K production reactors were shut down and the demineralizer plant was deactivated. It was reactivated some years later to provide demineralized water to the 100-K area fuel storage basins. The quantity of demineralized water produced during this period of operation was a small fraction of that produced during reactor operation. Thus, the number of regenerations was steadily reduced from an initial amount of approximately 12 times per year to 3 times per year when the demineralizer plant was finally taken out of service.

Related Sites/ Structures: The site is related to the 1706-KE Building, 100-K-38, 1706-KE Caustic Soda Tank, and 100-K-36, 1706-KE Chemical Storage Facility Dry Well.

Waste Type: Chemicals

Waste Description: A heel of sulfuric acid remains on the bottom of the tank, and an unknown quantity of sulfuric acid remains in the transfer lines inside the 1706KE facility.

Closure Info: 100-K-37 and 100-K-38 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP) (DOE/RL-96-17) for 100-K-37 and 100-K-38 documents the remedial actions conducted under Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6 and 200-CW-3 Operable Units, (EPA/ROD/R10-99/039). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039) as documented in EPA, 2009, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 100-K-37 and 100-K-38 waste sites were removed using standard industrial equipment for structural demolition. The removed tanks and related debris were disposed at the Environmental Restoration Disposal Facility on November 19, 2009 and November 23, 2009. Verification sampling was not required to demonstrate protectiveness for waste sites 100-K-37 and

100-K-38. The CERCLA removal action for the 1706-KE Building will address the underlying foundation.

The cost for the deactivation, demolition, and waste disposal activities associated with the 1706-KE Facility, which included removal and disposal of waste sites 100-K-37 and 100-K-38, was approximately \$1.8 million. The effort to remove the waste sites is estimated at 5% of the project cost. This yields an estimated cost of \$90,000 for remediation of the two waste sites. A comparison of the ESD (EPA 2009) estimated cost and the estimated total project cost is provided in Table 8-1 of the RSVP.

In accordance with the RDR/RAWP for the 100 Area, removal and disposal of the waste sites support the land use assumption of "unrestricted use" based on the rural-residential exposure scenario that was used in the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039). By removing the entire source of the hazardous substances, protection of human health and the environment have been achieved.

Code:	100-K-38	Classification:	Accepted
Names:	100-K-38; 1706-KE Caustic Soda Tank	Reclassification:	Interim Closed Out (8/4/2010)
Type:	Unplanned Release	Start Date:	1/1/1963
Status:	Inactive	End Date:	1/1/1986
Description:	<p>The site consists of contaminated soil from spills related to a caustic soda storage tank. The tank is an above ground, vertical, stainless steel storage tank. The tank rests on a redwood timber deck above a 1.4 meter (4.45 foot) service space (at grade) that is protected by guard posts. A 5.1 centimeter (2 inch) fill line for tank truck usage is also located in the same area. Two 5.1 centimeter (2 inch) drain lines, one for vent and overflow and the other for valve leakage, enter a french drain (Site: 100-K-36) that is located (in the service area) between the caustic soda tank and the sulfuric acid tank (Site: 100-K-37). The tank is insulated, has a liquid level gauge, a 5.1 centimeter (2 inch) fill line, a vent and overflow line, thermostat, and heating element. The top of the tank could be accessed via a ladder and platform at the top elevation of the tank. The tank was constructed with a bottom sloping towards the drain. When installed, the tank was shimmed to level it</p>		
Location:	<p>The site is located in the southeast corner and adjacent to the 1706-KE Building. Figure B-4 1706-KE Building, 0-Foot Level from the Part B Application shows the location of the tank.</p>		
Release Description:	<p>Site employees report that during the operational history, spills occurred. The tank exterior was rinsed down after these spills and the material was released to the soil.</p>		
Process Description:	<p>The chemical storage facility at 1706-KE was installed in 1963 to provide bulk quantities of 93 percent by weight sulfuric acid and 50 percent by weight sodium hydroxide. The chemicals were used to regenerate the ion columns in the 1706-KE demineralizer plant. The demineralizer plant supplied demineralized water to two experimental single pass process tube in the 105-KE reactor core. The demineralizer plant was a duplex unit with two sets of ion columns. It operated with one set in service and the other either being regenerated or in a ready-standby condition. Typically three regenerations were performed each day during this period. Shipping manifests indicate that approximately 7,948.5 liters (2100 gallons) of sulfuric acid and 10,976.5 liters (2900 gallons) of sodium hydroxide were delivered to 1706-KE at 4-6 week intervals. In 1971, the 100-K production reactors were shut down and the demineralizer plant was deactivated. It was reactivated some years later to provide demineralized water to the 100-K area fuel storage basins. The quantity of demineralized water produced during this period of operation was a small fraction of that produced during reactor operation. Thus, the number of regenerations was steadily reduced from an initial amount of approximately 12 times per year to 3 times per year when the demineralizer plant was finally taken out of service.</p>		

Related Sites/ Structures: The site is related to the 1706-KE Building, 100-K-37, 1706-KE Sulfuric Acid Tank, and 100-K-36, 1706-KE Chemical Storage Facility Dry Well.

Waste Type: Chemicals

Waste Description: Site employees have reported that spills occurred at the site. The tank exterior was rinsed down after the spills and into the soil column. A white material that may be sodium hydroxide powder can be seen in the cracks of the lower level ceiling beneath the location of the tank base.

Closure Info: 100-K-37 and 100-K-38 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP) (DOE/RL-96-17) for 100-K-37 and 100-K-38 documents the remedial actions conducted under Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6 and 200-CW-3 Operable Units, (EPA/ROD/R10-99/039). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039) as documented in EPA, 2009, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 100-K-37 and 100-K-38 waste sites were removed using standard industrial equipment for structural demolition. The removed tanks and related debris were disposed at the Environmental Restoration Disposal Facility on November 19, 2009 and November 23, 2009. Verification sampling was not required to demonstrate protectiveness for waste sites 100-K-37 and 100-K-38. The CERCLA removal action for the 1706-KE Building will address the underlying foundation.

The cost for the deactivation, demolition, and waste disposal activities associated with the 1706-KE Facility, which included removal and disposal of waste sites 100-K-37 and 100-K-38, was approximately \$1.8 million. The effort to remove the waste sites is estimated at 5% of the project cost. This yields an estimated cost of \$90,000 for remediation of the two waste sites. A comparison of the ESD (EPA 2009) estimated cost and the estimated total project cost is provided in Table 8-1 of the RSVP.

In accordance with the RDR/RAWP for the 100 Area, removal and disposal of the waste sites support the land use assumption of "unrestricted use" based on the rural-residential exposure scenario that was used in the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039). By removing the entire source of the hazardous substances, protection of human health and the environment have been achieved.

Code: 100-K-42	Classification: Accepted
Names: 100-K-42; 105-KE Fuel Storage Basin; Irradiated Fissile Material Storage; K East Basin; Metal Storage Basin; 100 Area KE Basin; 100-K-40	Reclassification: None
Type: Storage	Start Date: 1/1/1955
Status: Inactive	End Date:
Description: The site is the fuel storage basin for the 105-KE Reactor. The fuel storage basin is located at the rear of the reactor. The concrete basin area served as a collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. Irradiated reactor fuel elements were stored at the bottom of large water filled storage basins pending their shipment to the chemical separations facilities in the 200 Areas. The water in the basins served both as coolant and as shielding. The basin consists of a discharge chute and fuel element pickup area, a storage area, a transfer area, and a wash pad area. The basin area is floored throughout at	

ground level with steel grating which is suspended from the steelwork of the roof above by means of vertical pipe columns. A grid of 32 monorails evenly spaced crosses the basin, overhead, from north to south, connects at the ends with a monorail which completely encircles the area. Bars suspended from trolleys which roll on these rails extend down through slots in the floor grating to a point near the bottom of the basin, where they support and carry buckets used for conveying the processed metal. Transverse rails extend from the outer rail loop into the transfer area at the west end of the basin, and the viewing and weasel pits at the east end. Crossovers are installed for switching the trolleys from track to track. The transfer area contains two sets of standard gauge railway tracks which extend into the building at ground level through the west wall. Adjacent to each track is a loading pit, which leads off from the main basin. As the system functions, irradiated metal slugs drop from the rear or discharge face of the reactor through a discharge gate of special design to the bottom of the bay between reactor and basin. A heavy rubber mattress is installed here to cushion the fall. The slugs are picked up by long handled tongs manipulated from the floor grating, and placed into buckets. The loaded buckets are suspended on the monorail conveyor system, by which they are conveyed across and around the storage basin to the loading pits. This transfer is timed in short moves over a lengthy period so that in effect the slugs are stored for some time in the storage basin, for the purpose of dissipating radioactivity. When the slugs reach the transfer area they are placed, still underwater, into large specially constructed containers called "casks". The loaded casks are hoisted from the bottom of the pits and placed on the cask cars, which are switched in on the adjacent tracks. The cars approximate standard railway equipment in size, and are designed and built for the cask freightage. The viewing and weasel pits at the other end of the storage basin contain equipment for manipulating and examining selected slugs while under water. The function of the entire basin installation is to provide for handling radioactive metal under a shielding layer of water. A number of irradiated uranium fuel elements were found in both fuel storage basins when sludge was removed in 1975 after reactor operations were terminated. Dorian and Richards (1978) reports that the 105-KW storage basin was cleaned, modified and being used for the storage of irradiated fuels from N Reactor. At the time of the report the 105-KE basin had been cleaned and was in the process of being modified for the same purpose. In 1974 and 1975, both basins were modified to a recirculating cooling system by the utilization of heat exchangers once used to transfer heat from the reactor cooling water elimination system to facility heating (Project H-501). The 105-KE basin has been used to store fuels in open storage containers. Consequently, the 105-KE basin is far more radioactively contaminated than the 105-KW basin.

Location: The storage basin extends from the north wall of the 105-KE Reactor Building to the open area behind the reactor, with its longitudinal axis running parallel to the north wall of the building. Its east-west location is roughly in the center of the building.

Release Description: The 105-KE Fuel Storage Basin was constructed with a secondary seepage barrier in the form of an asphalt membrane under the basin floor. The 5.1 centimeters (2 inches) thick membrane was installed under the entire storage basin except for the pickup chute area and was designed to collect leakage in perforated pipes that lie on top of the membrane. These pipes drain to a sump. During testing that was conducted in 1974, a 16 day basin drawdown established a 15.1 liters per minute (4 gallons per minute) seepage rate from the basin system. At least 90 percent of this seepage was thought to be collected by the membrane system and sump. Two automatic pumps were installed in the sump to return any seepage back to the basin. 10 percent of the seepage was assumed to discharge to the soil beneath the basin. In mid-February 1977, an unusually high seep rate 51.1 liters (13.5 gallons per minute) was identified. The increased seepage was determined to have been caused by reduced basin water temperature, which caused concrete contraction to expand existing minor cracks in the basin. Detailed analysis showed that no radioactivity was being released in liquid effluents from K Area and no water was being collected in the membrane drainage sump. Therefore, all of the seepage was assumed to be going to ground either through or past the membrane. A number of steps were taken to control and reduce the basin leakage, including maintaining higher basin temperatures, identification and repair of seep areas, use of ion exchange system to reduce cesium, and improving

monitoring. In spite of the repairs, drawdown testing in 1979 showed that the basin was still leaking (See Releases Section). Eventually, an expansion joint in the floor of the basin discharge chute was isolated by water-tight dams that reduced leakage to a "near zero" rate of 11.4 liters (3 gallons per minute). During the 16 year operating history of the 105-KE Reactor, radioactive material most likely seeped from the basin to the soil beneath the facility through the same pathway that is open today. No direct measurements have been taken of the radionuclide inventories beneath the basin. The total estimated radionuclide inventories in the soil beneath the 105-KE Fuel Storage Basin (from operations between 1975 and 1979) are: cobalt-60 - 3.6 curies; strontium-90 - 1470 curies; cesium-137 - 1050 curies; plutonium-238 - 0.21 curies; plutonium-239/240 - 1.3 curies.

Process Description: During the reactor refueling process, the fuel storage basins were used to receive the discharged fuel rods. New fuel elements were pushed into the process tube by a charging machine which caused the irradiated fuel elements in the tube to be displaced. The discharged irradiated fuel elements dropped into a water filled discharge chute and slid down into the metal pickup area at the end of the storage basin. The water in the chute area provided shielding as the elements accumulated and were sorted into buckets using long, hand-operated tongs. The buckets were then transferred by an overhead monorail system to the storage aisles where they were held for a time to allow the decay of short-lived radionuclides. Following the storage period, the buckets of fuel elements were moved by the overhead monorail system to the transfer area. At the transfer area, the irradiated fuel was loaded into a cask, then raised by a crane and placed in special railroad cars for shipment to the chemical reprocessing facilities in the 200 Area. Occasionally, fuel elements would rupture or become damaged during handling and storage, causing contamination to the basin shielding water. Experience at other Hanford reactors suggests that the occurrence and inspections of the fuel element ruptures almost certainly occurred at both 100-KE and 100-KW basins throughout their operating histories. Although the basins originally served the K Reactors, N Reactor fuel was accumulated from 1979 through 1987. Storage at K Basins was intended to be only as needed to sustain operation of N Reactor while the Plutonium and Uranium Recovery through Extraction Facility (PUREX) was placed in standby for refurbishment and restart. Although PUREX processed much of the N Reactor fuel as planned, the decision by the Department of Energy in December 1993 to deactivate the PUREX facility left approximately 2,100 metric tons (2,310 tons) of N Reactor spent nuclear fuel in the K Basins with no provision for near term removal and processing.

Related Sites/ Structures: The site is associated with the 105-KE Reactor Building and UPR-100-K-1.

Waste Type: Sludge

Waste Description: The spent nuclear fuel in the KE basin was in the form of irradiated uranium elements clad in aluminum or zirconium alloy and immersed in water. The fuel elements in the K East Basin were stored in open canisters. By-product material which includes corroded cladding, fuel particles, and insoluble plutonium and uranium metal had settled on the basin floor. Concrete debris resulting from erosion of the basin walls, transient soil and other types of dregs had also accumulated in the basins. This concurrent accumulation of various materials in the basins was commonly referred to by the Spent Nuclear Fuel (SNF) Project as the 100-K Basins sludge. The 100-K East Basin contained approximately 50 cubic meters of sludge.

Code: 100-K-43	Classification: Accepted
Names: 100-K-43; 105-KW Fuel Storage Basin; Irradiated Fissile Material Storage; K West Basin; KW Basin	Reclassification: None
Type: Storage	Start Date: 1/1/1955

Status: Active**End Date:** 1/1/1971

Description: The site is the fuel storage basin for the 105-KW Reactor. The fuel storage basin is located at the rear of the reactor. The concrete basin area served as a collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. Irradiated reactor fuel elements were stored at the bottom of large water filled storage basins pending their shipment to the chemical separations facilities in the 200 Areas. The water in the basins served both as coolant and as shielding. The basin consists of a discharge chute and fuel element pickup area, a storage area, a transfer area, and a wash pad area. The basin area is floored throughout at ground level with steel grating which is suspended from the steelwork of the roof above by means of vertical pipe columns. A grid of 32 monorails evenly spaced crosses the basin, overhead, from north to south, connects at the ends with a monorail which completely encircles the area. Bars suspended from trolleys which roll on these rails extend down through slots in the floor grating to a point near the bottom of the basin, where they support and carry buckets used for conveying the processed metal. Transverse rails extend from the outer rail loop into the transfer area at the west end of the basin, and the viewing and weasel pits at the east end. Crossovers are installed for switching the trolleys from track to track. The transfer area contains two sets of standard gauge railway tracks which extend into the building at ground level through the west wall. Adjacent to each track is a loading pit, which leads off from the main basin. As the system functions, irradiated metal slugs drop from the rear or discharge face of the reactor through a discharge gate of special design to the bottom of the bay between reactor and basin. A heavy rubber mattress is installed here to cushion the fall. The slugs are picked up by long handled tongs manipulated from the floor grating, and placed into buckets. The loaded buckets are suspended on the monorail conveyor system, by which they are conveyed across and around the storage basin to the loading pits. This transfer is timed in short moves over a lengthy period so that in effect the slugs are stored for some time in the storage basin, for the purpose of dissipating radioactivity. When the slugs reach the transfer area they are placed, still underwater, into large specially constructed containers called "casks". The loaded casks are hoisted from the bottom of the pits and placed on the cask cars, which are switched in on the adjacent tracks. The cars approximate standard railway equipment in size, and are designed and built for the cask freightage. The viewing and weasel pits at the other end of the storage basin contain equipment for manipulating and examining selected slugs while under water. The function of the entire basin installation is to provide for handling radioactive metal under a shielding layer of water. A number of irradiated uranium fuel elements were found in both fuel storage basins when sludge was removed in 1975 after reactor operations were terminated. Dorian and Richards (1978) reports that the 105-KW storage basin was cleaned, modified and being used for the storage of irradiated fuels from N Reactor. At the time of the report the 105-KE basin had been cleaned and was in the process of being modified for the same purpose. In 1974 and 1975, both basins were modified to a recirculating cooling system by the utilization of heat exchangers once used to transfer heat from the reactor cooling water elimination system to facility heating (Project H-501). The 105-KW basin has been used to store fuels in sealed storage containers. Consequently, the 105-KW basin is far less radioactively contaminated than the 105-KE basin.

Location: The storage basin extends from the north wall of the 105-KW Reactor Building to the open area behind the reactor, with its longitudinal axis running parallel to the north wall of the building. Its east-west location is roughly in the center of the building.

Process Description: During the reactor refueling process, the fuel storage basins were used to receive the discharged fuel rods. New fuel elements were pushed into the process tube by a charging machine which caused the irradiated fuel elements in the tube to be displaced. The discharged irradiated fuel elements dropped into a water filled discharge chute and slid down into the metal pickup area at the end of the storage basin. The water in the chute area provided shielding as the elements accumulated and were sorted into buckets using long, hand-operated tongs. The buckets were then transferred by an overhead monorail system to the storage aisles where they were held for a time to allow the decay of short-lived radionuclides. Following the storage period, the

buckets of fuel elements were moved by the overhead monorail system to the transfer area. At the transfer area, the irradiated fuel was loaded into a cask, then raised by a crane and placed in special railroad cars for shipment to the chemical reprocessing facilities in the 200 Area. Occasionally, fuel elements would rupture or become damaged during handling and storage, causing contamination to the basin shielding water. Experience at other Hanford reactors suggests that the occurrence and inspections of the fuel element ruptures almost certainly occurred at both 100-KE and 100-KW basins throughout their operating histories. Although the basins originally served the K Reactors, N Reactor fuel was accumulated from 1979 through 1987. Storage at K Basins was intended to be only as needed to sustain operation of N Reactor while the Plutonium and Uranium Recovery through Extraction Facility (PUREX) was placed in standby for refurbishment and restart. Although PUREX processed much of the N Reactor fuel as planned, the decision by the Department of Energy in December 1993 to deactivate the PUREX facility left approximately 2,100 metric tons (2310 tons) of N Reactor spent nuclear fuel in the K Basins with no provision for near term removal and processing.

Related Sites/ Structures: The site is related to the 105-KW Reactor Building and an Unplanned Release - sitecode 100-K-82.

Waste Type: Sludge

Waste Description: The spent nuclear fuel in the KW basin was in the form of irradiated uranium elements clad in aluminum or zirconium alloy and immersed in water. The fuel elements in the K West Basin were stored in closed canisters. By-product material which included corroded cladding, fuel particles, and insoluble plutonium and uranium metal gas settled on the basin floor. Concrete debris resulting from erosion of the basin walls, transient soil and other types of dregs had also accumulated in the basins. This concurrent accumulation of various materials in the basins was commonly referred to by the Spent Nuclear Fuel (SNF) Project as the K Basins sludge. The K West Basin contained relatively little sludge as compared with the K East Basin which had approximately 50 cubic meters (38.2 cubic yards) of sludge.

Code: 100-K-46

Classification: Accepted

Names: 100-K-46; 119-KE French Drain; Drywell

Reclassification: None

Type: French Drain

Start Date: 1/1/1959

Status: Inactive

End Date:

Description: The site is a drywell that received drainage from a floor drain in the 119-KE Sample Building. The site has been covered with crushed rock and there was no visible evidence of the drywell on the ground surface during a site visit by T. F. Johnson on October 31, 1996. The drywell is connected the 119-KE Sample Building by a 5 centimeter (2 inch) drainage pipe buried at least 0.9 meters (3 feet) below grade. A 1.9 centimeter (3/4 inch) drain line from the building's evaporative cooler connected into the 5 centimeter (2 inch) drain line near the southern edge of the building.

Location: The site is located 8.7 meters (28.5 meters) from the east side of the 105-KE Reactor Building and 8 feet (2.4 meters) south of the 119-KE Sample Building.

Process Description: The 119-KE Sample Building is situated over the intake and exhaust ducts to the 117-KE Filter Building and was used to sample effluent gases and particulates.

Related Sites/ Structures: The drywell is associated with the 119-KE Sample Building.

Waste Type: Process Effluent

Waste Description: The drywell received effluent from the building's evaporative cooler. It is likely that the floor

Description: drain also received sample waste and janitorial waste since the building had no other drains or connections to the process sewer system.

Code: 100-K-47 **Classification:** Accepted
Names: 100-K-47; 1904-K Process Sewer **Reclassification:** None
Type: Process Sewer **Start Date:** 1/1/1955
Status: Active **End Date:**

Description: This site includes those underground process sewer pipelines that begin at the 105-KE Reactor, 105-KW Reactor, 165-KE, 190-KE, 1706-KE, and terminate at either the 116-K-3 Outfall or join the 100-K-56 Pipeline south of the outfall. Manholes indicate the location of some sections of the process sewer. The main portion of the sewer that extends from the point of intersection with the 30.5 and 40.6 centimeter (12 and 16 inch) pipelines coming from 105-KW Reactor and 165-KE building to drop manhole #5 is a 1.68 meters by 1.68 meters (66 inches by 66 inches) concrete sewer. All other process sewer pipelines are constructed of carbon steel. The site does not include the facilities where the pipelines terminate, or pipelines that are housed within building structures, which are addressed separately. This site does not include the radioactive process sewer pipelines, water supply pipelines, glycol heat pipelines, or other reactor effluent underground pipelines addressed by other sites. This site does not include the 1.7 meter (66 inch) pipeline that originates at 165-KW and up to the point of intersection with the 30.5 and 40.6 centimeter (12 and 16 inch) pipelines coming from 105-KW Reactor. This component of the 1904-K Process Sewer is site 100-K-60. The site has been split because of the different programmatic responsibilities associated with the two sites.

Location: This pipeline system includes process sewer lines from both the 105-KE and 105-KW reactor areas. The process sewer piping originates on the south (pre-reactor) and north (post-reactor) sides of the 105-KE and 105-KW Buildings. Portions run in an east-west direction to a point just west of the KE facilities and east of the KW facilities. The pipelines then run in a northerly direction to a point just south of the 116-K-3 Outfall where they intersect into a single discharge line to the Outfall structure.

Related Sites/ Structures: These pipelines are associated with 165-KE, 190-KE, 105-KW, 105-KE, and 1706-KE. Pipeline 100-K-60 is the corresponding pipeline from 165-KW and joining 100-K-47 midway between the two reactors.

Waste Type: Process Effluent

Waste Description: Discharges included overflows from chemical makeup facilities that included chemical additives to reactor cooling water, e.g., aluminum sulfate (alum), with excess hydrated calcium oxide, sulfuric acid, and chlorine. Water pH was maintained at about 7.5, and free chlorine residual was about 0.3 milligrams per liter. Other discharges to the system included filter backflush waste water, coagulated sediments from the water treatment settling basins, demineralizer regeneration wastes, which included neutralized sulphuric acid and sodium hydroxide, brine wastes from water softeners, and pump cooling waste water.

Code: 100-K-48 **Classification:** Accepted
Names: 100-K-48; 100-KE Oil Contamination Areas **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site shows evidence of past fuel oil spills especially around the railroad tracks. The spills have been absorbed into the soil and have formed an asphalt like substance. Some areas may have been covered with clean soil.

Location: The site is located in 100-K Area just north of the 166-KE Oil Storage Tank at the rail car

Location: holding point and just west of the 166-KE Oil Storage Tank.

Release Description: The site appears to be oil spillage from rail car off loading procedures. The oil appears to have been absorbed by sand and has formed a hard asphalt-like covering on the surface. It appears that the oil substance has exceeded the capacity of the sand absorbent and has formed a few tar-like patches of liquid oil that appear to be Bunker C type oil. There are some oil stains on the concrete tank top as well.

Related Sites/ Structures: The site is related to the 166-KE Fuel Oil Storage Bunker.

Waste Type: Oil

Waste Description: The waste is oil solidified into a hard asphalt-like substance.

Code: 100-K-49 **Classification:** Accepted

Names: 100-K-49; 100-KW Oil Contamination Areas **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site shows evidence of past fuel oil spills especially around the railroad tracks. The spills have been absorbed into the soil and have formed an asphalt like substance. The area between the 166-KW and the road south of 166-KW was discovered to be contaminated with oil during excavation of a trench for the Cold Vacuum Drying Facility. An oil contaminated layer of soil about 7.6 to 10.2 centimeters (3 to 4 inches) thick was discovered a few inches below the surface.

Location: The site is located in 100K Area and adjacent to the 166-KW Oil Storage Tank, extending to the road off the north and west sides of 166-KW Oil Storage Tank. The site also extends to the northwest to a depression located 50 to 60 meters (140 to 170 feet) west of the 105-KW Reactor. Due to the discovery of subsurface oil contamination the full extent of the contamination is unknown.

Release Description: The site appears to have been created from spills of fuel oil that occurred during off loading operations. The largest portion of the contamination appears to have been absorbed by sand and formed a hard asphalt-like substance. This substance begins at the railcar offloading area and extends down gradient from the tank to an area west of the 105-KW Reactor Facility.

Related Sites/ Structures: The site is related to the 166-KW Fuel Oil Storage Bunker.

Waste Type: Oil

Waste Description: The waste is oil solidified into a hard asphalt-like substance.

Code: 100-K-50 **Classification:** Accepted

Names: 100-K-50; 1725-K & 1726-K Sanitary Sewer System Holding Tank **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1996

Status: Active **End Date:**

Description: The site is a sanitary sewage holding tank that services 1725-K and 1726-K. The site is marked

by eight red concrete posts. The tank is constructed of concrete and has three manholes on top and one hinged hatchcover. A 20.3 centimeter (8 inch) sanitary sewer pipeline runs in a north-south direction 9.1 meters (30 feet) east of the 1725-K (MO-293) and the 1726-K (MO-442) buildings into the south side of the holding tank. The tank is divided into two chambers. The normal operating volume is 11,355 liters (3000 gallons) and the total reserve volume is 17,032 liters (4500 gallons).

Location: The site is located approximately 35 meters (115 feet) south southeast of the southeast corner of the 183-KE Settling Basins and 9.1 meters (30 feet) east of 1725-K.

Process Description: The holding tank collects septage from 1725-K and 1726-K mobile offices. Periodically, the septage is pumped out and taken to the 124-N-10 Sewage Lagoon for disposal.

Related Sites/Structures: The site is related to 1725-K, 1726-K, and 124-N-10. Both 1725-K and 1726-K are mobile offices with alias names of MO-293 and MO-442, respectively.

Waste Type: Sanitary Sewage

Waste Description:

Code: 100-K-53 **Classification:** Accepted

Names: 100-K-53; 100-KE Glycol Heat Recovery Underground Pipelines **Reclassification:** None

Type: Product Piping **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: This site includes those underground pipelines that transported glycol solutions from the 116-KE-5 (150 KE Heat Recovery Station) to their entrance to the 165-KE Powerhouse (Power Control Building) facilities. The pipelines consist of two 0.46-meter (1.5-foot) steel supply and return pipelines. It does not include the above-grade pipelines at the 116-KE-4 Station, the 100-K-7 Storage Tanks and piping, or the pipelines housed within these facilities.

Location: The pipelines originate at the 116-KE-5 (150-KE Heat Recovery Station) and terminate at the 165-KE Building north wall. Generally, the pipelines run in a north-south direction (K-Area Hanford Plant Grid). Because the pipelines are housed within facilities from the point where they enter the 165-KE Building, the housed sections are not included as a part of this site

Process Description: This system was used to distribute heat taken, via a heat exchanger (116-KE-5, 150-KE Heat Recovery Station) to area buildings for space heating and process needs. The facilities, makeup and storage tanks where the pipelines terminated are not included.

Related Sites/Structures: The site was associated with 116-KE-5 (150-KE Heat Recovery Station) and 165-KE (Power Control Building).

Waste Type: Chemicals

Waste Description: The waste is pipelines that contained an ethylene glycol/water solution that was maintained at a slightly positive pressure to preclude leakage of reactor effluent water into the system via the 150-KE Heat Exchanger.

Code: 100-K-54 **Classification:** Accepted

Names: 100-K-54; 100-KW Glycol Heat Recovery Underground Pipelines **Reclassification:** None

the diversion valve station. This bypass pipeline tied into the inlet piping of one of the retention basins. During normal operation of the effluent system, flow was restricted in this bypass pipeline by an inverted 'U' bend which extended 9.1 meters (30 feet) higher than the elevation of the diversion valve station. If all the valves inadvertently closed, the effluent water flowed over the inverted 'U' bend and into the basin. The inlet 1.83-meter (72-inch) effluent piping ran to the side of a basin and discharged into an inlet chute, which in turn discharged to the bottom of the basin. The basin discharged to the river through a sump at the center of the basin. The basin discharge piping extended from the sump beneath the basins in reinforced concrete tunnels at the sides of the basins. The basin discharge piping was 1.7-meter (66-inch) carbon steel piping. The combined length of the discharge pipes from all three basins measured 478 meters (1,568 feet). The basin discharge piping combined into a common effluent pipeline. This pipeline discharged into the outfall structure (116-K-3). The common effluent from the 105-KW Reactor was a 1.83-meter (72-inch) pipeline. The effluent pipe system was Dresser coupling connected. Concrete anchors were provided at each turn in the pipeline. The motor operated valves in the effluent system were controlled from the 105-KW Building Control Room. Miscellaneous piping included pipes to the 116-K-1 Crib, 116-K-2 Trench, and process sewer and piping to and from the 150-KW Heat Recovery Building. Discharges to 116-K-1 and 116-K-2 were made via 910-millimeter (36-inch) pipes that combined to flow into a 1,070-millimeter (42-inch) steel main pipe. Discharges to the process sewer were made through 250-millimeter (10-inch) steel pipes that combined into a 360-millimeter (14-inch) steel main pipe. Effluent from the 150-KW Building consisted of a 610-millimeter (24-inch), 460-millimeter (18-inch), 100-millimeter (4-inch) and 76-millimeter (3-inch) steel effluent piping system. Effluent from the 105-KW and 150-KW Buildings could bypass the retention basins through a 910-millimeter (36-inch) or a 300-millimeter (12-inch) steel pipe. Pipe depth varied from 1.3 meters (4 feet) to 9.7 meters (32 feet). The deepest pipes ran under an elevated contour that coincided with the retention basin exclusion fence.

Related Sites/ Structures: The site was related to the 105-KW Reactor, the 116-K-3 Outfall, 100-K-83 Spillway, the 100-K-80 River Pipelines, the 116-K-1 Crib, the 116-K-2 Trench, and the 116-KW-3 Retention Basins.

Waste Type: Process Effluent

Waste Description: The waste was contaminated steel piping, concrete, and soil. Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, diatomaceous earth (a scouring agent), and sodium dichromate. Water pH was maintained at about 7.5, and free chlorine residual was about 0.2 milligrams per liter. Radionuclide content at the retention basin during sampling by Richards for UNI-946, included the following: cesium-134, plutonium 239/240, cesium-137, strontium-90, hydrogen-3, nickel-63, europium-152, europium-154, europium-155, and cobalt-60.

This Site has the Following SubSites:

Code: 100-K-55:1

Names: 100-K-55:1; Process Pipelines Outside of Reactor Fence to Outfall

Code: 100-K-55:2

Names: 100-K-55:2; Effluent Pipelines Inside 105KW Reactor Security Fence

Code: 100-K-55:1

Classification: Accepted

Names: 100-K-55:1; Process Pipelines Outside of Reactor Fence to Outfall

Reclassification: Interim Closed Out (9/23/2005)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Remedial action activities involving excavation and staging of overburden material and removal

of contaminated piping, debris, and soil began on December 9, 2002. Contaminated materials were disposed at the ERDF.

Subsite 1) included the underground process effluent pipelines located on the north side of 105 KW Reactor, from the outside of the security fence to the active utilities 116-K-1 Crib, 116-K-2 Trench and 116-KE-4 Retention Basin, and the Process Water Pipeline between Reactors.

The 100-K-55 pipelines consisted of the gravity-flow process effluent pipelines that formerly serviced the 105-KW Reactor, terminating at the 116-K-1 Crib, the 116-K-2 Trench, and the 116-KW-3 retention basins. The active 100-K-47 concrete culvert shown was not removed during remediation of the adjacent section of the 100-K-55:1 pipeline. Verification samples collected adjacent to the culvert did not indicate contamination associated with the culvert.

Location: Process Pipelines Outside of 105-KW Reactor Security Fence to 116-K-3 Outfall.

Waste Type: Not Specified

Waste Description: The waste is contaminated piping, debris, and soil.

Closure Info: 100-K-55:1, 100-K-56:1, 116-KW-4 and 116-KE-5 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities involving excavation and staging of overburden material and removal of contaminated piping, debris, and soil began on December 9, 2002.

The Cleanup Verification Package for the 100-K-55:1 and 100-K-56:1 Pipelines and the 116-KW-4 and 116-KE-5 Heat Recovery Stations, (CVP-2005-00006), documented that the 100-K-55:1 and 100-K-56:1 pipelines were remediated in accordance with the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (ROD) (EPA 1997). Remedial action objectives (RAOs) and remedial action goals (RAGs) for these sites were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 5). The 116-KW-4 and 116-KE-5 sites were also remediated as part of remedial efforts for the pipelines.

Final cleanup verification sampling was conducted from January 26, 2005, to June 23, 2005 following variance analysis. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency (EPA) analytical methods as required per the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 96-22, Rev. 3) for the 100-K-55 and 100-K-56 pipelines. Sample numbers were too numerous to report, sample numbers and results may be found in Appendix A of CVP-2005-00006. Each verification sample was composed of a composite sample formed by combining soil collected at the required number of randomly selected locations within each sampling area (excluding the quality assurance/quality control samples).

The CVP-2005-00006 demonstrated that remedial actions at the 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites have achieved the RAOs and corresponding RAGs established in the RDR/RAWP. The contaminated materials from these sites have been excavated and disposed at the ERDF. The remaining soils at the sites have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River.

The 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites were verified to be remediated in accordance with the ROD and may be backfilled

The SubSite is Part Of:

pond area, from which the effluent filtered through the ground before discharging to the river. Between the 105-KE Reactor Building downcomer outlet and the diversion valve box at the inlet of the 107-KE Retention Basins, the effluent pipeline was a single, 1.83-meter (72-inch), carbon steel pipeline measuring 277 meters (908 feet) in length. At the diversion valve box the flow could be diverted to any or all of the three retention basins by three, motor-operated, 1.83-meter (72-inch), butterfly valves. A 1.83-meter (72-inch) bypass pipeline was provided around the diversion valve station. This bypass pipeline tied into the inlet piping of one of the retention basins. During normal operation of the effluent system, flow was restricted in this bypass pipeline by an inverted 'U' bend which extended 9.1 meters (30 feet) higher than the elevation of the diversion valve station. However, if all the valves closed, the effluent water flowed over the inverted 'U' bend and into the basin. The inlet 1.83-meter (72-inch) effluent piping ran to the side of a basin and discharged into an inlet chute, which in turn discharged to the bottom of the basin. The basin discharged to the river through a sump at the center of the basin. The basin discharge piping extended from the sump beneath the basins in reinforced concrete tunnels at the sides of the basins. The basin discharge piping was 1.7-meter (66-inch) carbon steel piping. The basin discharge piping combined into a common effluent pipeline. This pipeline discharged into the outfall structure. The common effluent from the 105-KE Reactor was a 1.7-meter (66-inch) pipeline. The combined length of the discharge pipes from the three basins was 752 meters (2,469 feet). The effluent pipe system was Dresser coupling connected. Concrete anchors were provided at each turn in the pipeline. The motor operated valves in the effluent system were controlled from the 105-KE Building Control Room. Miscellaneous piping included pipes to the 116-K-1 Crib, 116-K-2 Trench, and process sewer and piping to and from the 150-KE Heat Recovery Building. Discharges to 116-K-1 and 116-K-2 were made via 910-millimeter (36-inch) pipes that combined to flow into a 1,070-millimeter (42-inch) steel main pipe. Discharges to the process sewer were made through 250-millimeter (10-inch) steel pipes that combined into a 360-millimeter (14-inch) steel main pipe. Effluent from the 150-KE Building consisted of a 610-millimeter (24-inch), 460-millimeter (18-inch), 100-millimeter (4-inch) and 76-millimeter (3-inch) steel effluent piping system. Effluent from the 105-KE and 150-KE Buildings could bypass the retention basins through a 910-millimeter (36-inch) or a 300-millimeter (12-inch) steel pipe. Pipe depth varied from 1.3 meters (4 feet) to 9.7 meters (32 feet). The deepest pipe ran under an elevated contour that coincided with the retention basin exclusion fence.

Related Sites/ Structures: The site was related to the 105-KE Reactor, the 116-K-3 Outfall, the 100-K-83 Spillway, the 100-K-80 River Pipelines, the 116-K-1 Crib, the 116-K-2 Trench, the 150-KE, and the 116-KE-4 Retention Basins.

Waste Type: Process Effluent

Waste Description: The waste was contaminated steel piping, concrete, and soil. Chemical additives to reactor cooling water included aluminum sulfate (alum) with excess hydrated calcium oxide, sulfuric acid, chlorine, diatomaceous earth (a scouring agent), and sodium dichromate. Water pH was maintained at about 7.5, and free chlorine residual was about 0.2 milligrams per liter. Radionuclide content at the retention basin during sampling by Richards for UNI-946, included the following: cesium-134, plutonium 239/240, cesium-137, strontium-90, hydrogen-3, nickel-63, europium-152, europium-154, europium-155, and cobalt-60.

This Site has the Following SubSites:

Code: 100-K-56:1

Names: 100-K-56:1; Process Water Pipeline Between Reactors, 116-K-2 Trench and 116-KE-4 Retention Basin; Reactor Process Effluent Pipelines from 105KE Reactor Security Fence to the Active Utilities 116-K-1 Crib

Code: 100-K-56:2

Names: 100-K-56:2; Effluent Pipelines Inside the 105-KE Reactor Security Fence

the ERDF. The remaining soils at the sites have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River.

The 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites were verified to be remediated in accordance with the ROD and may be backfilled

The SubSite is Part Of:

Code: 100-K-56

Names: 100-K-56; 100-KE Reactor Cooling Water Effluent Underground Pipelines

Code: 100-K-56:2

Classification: Accepted

Names: 100-K-56:2; Effluent Pipelines Inside the 105-KE Reactor Security Fence

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of the remaining portion of the underground effluent pipeline inside the reactor security fence and near the active utility features of the 116-K-1 Crib, the 116-KE-4 Retention Basin and the 116-K-2 Trench. A 0.61-meter (24-inch) process water pipeline connecting the two reactor buildings is also administratively part of this subsite.

The ends of the pipeline that were exposed when remediating 100-K-56:1 were covered with plywood prior to backfilling.

Location: Generally, the pipelines ran in a north-south direction, north of the 105-KW Reactor Building to inside the reactor security fence; process water pipeline is located between the two reactor buildings.

Waste Type: Not Specified

Waste Description: The waste is contaminated steel piping, concrete, and soil.

The SubSite is Part Of:

Code: 100-K-56

Names: 100-K-56; 100-KE Reactor Cooling Water Effluent Underground Pipelines

Code: 100-K-60

Classification: Accepted

Names: 100-K-60; 1904-K Process Sewer (165-KW)

Reclassification: None

Type: Process Sewer

Start Date: 1/1/1955

Status: Inactive

End Date:

Description: This site includes the underground process sewer pipeline that begins at 165-KW and runs up to the point of intersection with the 30.5 and 40.6-centimeter (12 and 16-inch) pipelines coming from 105-KW Reactor. The portion of the sewer that extends from the 165-KW Building to the point of intersection with the 30.5 and 40.6-centimeter (12 and 16-inch) pipelines coming from 105-KW Reactor is a 1.68 by 1.68-meter (66 by 66-inch) concrete sewer. This site does not include those underground process sewer pipelines that begin at the 105-KE Reactor, the 105-KW Reactor, the 165-KE, the 190-KE, or the 1706-KE, and terminate at the 116-K-3 Outfall. These components of the 1904-K Process Sewer are site 100-K-47. The site has been split because of the different programmatic responsibilities associated with the two sites. The site does not include the facilities where the pipelines terminate, or pipelines that are housed within

building structures, which are addressed separately. This site does not include the radioactive process sewer pipelines, water supply pipelines, glycol heat pipelines, or other reactor effluent underground pipelines addressed by other sites.

Location: The process sewer originates on the north side of 165-KW and runs east and then northeast to a point where it meets the process sewer pipelines coming from 105-KW. At that point the site is described in 100-K-47.

Related Sites/ Structures: The site is related to the 165-KW Building.

Waste Type: Process Effluent

Waste Description: Discharges included overflows from chemical makeup facilities that included chemical additives to reactor cooling water, e.g., aluminum sulfate (alum), with excess hydrated calcium oxide, sulfuric acid, and chlorine. Water pH was maintained at about 7.5, and free chlorine residual was about 0.3 milligrams per liter. Other discharges to the system included: filter backflush waste water; coagulated sediments from the water treatment settling basins; demineralizer regeneration wastes, which included neutralized sulphuric acid and sodium hydroxide; brine wastes from water softeners; and pump cooling waste water.

Code: 100-K-61 **Classification:** Accepted

Names: 100-K-61; 117-KW Filter Building **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1970

Description: The ventilation exhaust filter building houses blowers and particulate filters used to treat the ventilation exhausted from the 105-KW Reactor Building. Included in this site are the 117-KW Building, the intake ventilation duct from the 105-KW Reactor Building, and the exhaust ventilation ducts to the 116-KW Reactor Exhaust Stack. The building and duct work are all made of reinforced concrete, 0.3 to 0.6 meters (1 to 2 feet) thick. The building is 12.2 meters (40 feet) high with 2.4 meters (8 feet) above grade. A soil berm is built up around the building from grade level to the top of the structure. The hatch on the top of the above ground portion of the filter structure is posted as Contamination Area and Danger-Restricted Area, Multiple Hazards. The building is divided into two large filter cells with a smaller operating area between them. The filter cells each can hold six filter frames (two wide and three deep). The filter frames were designed to hold thirty-six filters that were 0.6 meters (2 feet) square by 0.3 meters (1 foot) thick. There are spaces between the frames to allow access for filter maintenance. The operating area between the two cells is divided into two levels. The upper level, called the access gallery has ten doors that lead from it. Four doors open into each of the filter cells and the two other doors provide access to the intake and exhaust ducts. The operating gallery is located below the access gallery. A sump is located at each end of the operating gallery to collect incidental drainage from above. A large open area extends the full length of the structure above the access gallery and the filter cells. It ranges in height between 2.5 and 2.4 meters (8.1 and 7.8 feet) due to the structure's sloping roof. The space provides access to the cement cover blocks that are positioned over each of the filter frames.

Location: The 117-KW Filter Building is located east of the 105-KW Reactor Building, northeast of the 116-KW Reactor Exhaust Stack.

Process Description: The 117-KW Building was constructed as part of the reactor confinement project. Prior to its use, unfiltered ventilation was exhausted directly from the reactor to the atmosphere. The confinement project diverted the exhaust just before the stack and routed it to the filter building where it passed through a series of filters. The filtered exhaust was then routed back to the ventilation exhaust stack where it was discharged to the atmosphere. Sealwells within the filter building provided the ability to direct the exhaust into one or both of the filter cells.

Related Sites/ Structures: The site is associated with the 105-KW Reactor (118-KW-1), the 116-KW Reactor Exhaust Stack (132-KW-1), the 119-KW Sample Building, and the 1904-K Process Sewer (100-K-47).

Waste Type: Equipment

Waste Description: The building contains radiologically contaminated equipment and surfaces that remain from when it was in use.

Waste Type: Demolition and Inert Waste

Waste Description: When the 116-KW Reactor Exhaust Stack was shortened, the debris was placed inside the stack. Some debris is probably within the exhaust duct connecting the filter building to the stack.

Code: 100-K-62

Classification: Accepted

Names: 100-K-62; 117-KE Filter Building

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1971

Description: The ventilation exhaust filter building houses blowers and particulate filters used to treat the ventilation exhausted from the KE Reactor Building. Included in this site are the 117-KE Building, the intake ventilation duct from the 105-KE Reactor Building, and the exhaust ventilation ducts to the 116-KE Reactor Exhaust Stack. Most of the filter structures are below grade. The building and duct work are all made of reinforced concrete, 0.3 to 0.6 meters (1 to 2 feet) thick. The building is 12.2 meters (40 feet) high with 2.4 meters (8 feet) above grade. The above ground portion of the filter structure is a soil berm is built up around the building from grade level to the top of the structure. There is an entry hatch on the top of the berm that is posted as Contamination Area and Danger-Restricted Area, Multiple Hazards. The building is divided into two large filter cells with a smaller operating area between them. The filter cells each can hold six filter frames (two wide and three deep). The filter frames were designed to hold thirty-six filter that were 0.6 meters (2 feet) square by 0.3 meters (1 foot) thick. There are spaces between the frames to allow access for filter maintenance. The operating area between the two cells is divided into two levels. The upper level, called the access gallery has ten doors that lead from it. Four doors open into each of the filter cells and the two other doors provide access to the intake and exhaust ducts. The operating gallery is located below the access gallery. A sump is located at each end of the operating gallery to collect incidental drainage from above. A large open area extends the full length of the structure above the access gallery and the filter cells. It ranges in height between 2.5 and 2.4 meters (8.1 and 7.8 feet) due to the structure's sloping roof. The space provides access to the cement cover blocks that are positioned over each of the filter frames.

Location: The 117-KE Filter Building is located east of the 105-KE Reactor Building, northeast of the 116-KE Reactor Exhaust Stack.

Process Description: The 117-KE Building was constructed as part of the reactor confinement project. Prior to its use, unfiltered ventilation was exhausted directly from the reactor to the atmosphere. The confinement project diverted the exhaust just before the stack and routed it to the filter building where it passed through a series of filters. The filtered exhaust was then routed back to the ventilation exhaust stack where it was discharged to the atmosphere. Sealwells within the filter building provided the ability to direct the exhaust into one or both of the filter cells.

Related Sites/ Structures: The site is associated with the 105-KE Reactor (118-KE-1), the 116-KW Reactor Exhaust Stack (132-KE-1), the 119-KE Sample Building, and the 1904-K Process Sewer (100-K-47).

Waste Type: Equipment

Waste Description: The building contains radiologically contaminated equipment and surfaces that remain from

Waste Description: when it was in use.

Waste Type: Misc. Trash and Debris

Waste Description: When the 116-KE Reactor Exhaust Stack was shortened, the debris was placed in the "below ground interior portion" of the stack. Some debris is probably within the exhaust duct connecting the filter building to the stack.

Code: 100-K-66

Classification: Accepted

Names: 100-K-66; 165-KW Power Control Building

Reclassification: None

Type: Control Structure

Start Date:

Status: Inactive

End Date:

Description: The building is painted a pink color and has three large stacks on the west end of the building. This site is a bomb resistant shelter without windows. All ventilation is supplied by fans. The building is posted Danger- Restricted Area- Asbestos.

Location: The 165-KW Building is located between the 183-KW Water Treatment Plant and the 105-KW Reactor Building. The 190-KW Main Pumphouse directly adjoins the south side of the 165-KW Power Control Building.

Process Description: The purpose of the 165-KW Power Control Building was to provide housing for the power house, control room, valve pit, and electrical switchgear of the water supply system. The control room and valve pit are located directly over the pipe tunnel that extends from the 183 Building to the 105 Building. This section is 15 meters (50 feet) wide, and the two rooms are separated by a 46-centimeter (18-inch) concrete wall. The valve pit contains most of the motor-operated valves included in the cooling water, service water, and raw water systems. Steel grating serves as a floor at the operating level above the pit. The electrical switchgear room houses all switchgear for the electrical system. Outside and adjoining the building is the 230 kilovolt Switchyard. Directly beneath the 165 Switchgear Room is the electrical cable room, occupied by two battery rooms, control panels for battery power, and 4,160 volt switchgear and building service transformers. The control room is the nerve center of the entire water and power plant, more so than the comparable 190 Control Rooms in any of the older reactor areas. The importance of this center to the continuity of operation of the area has been recognized by its placement within the bomb-resistant shelter that also encloses the boiler and turbine room, the electrical switchgear, and the valve pit. Virtually all important pieces of equipment pertaining to maintaining water flow are started, stopped, or positioned directly from the control board in this room. Steam is supplied by three complete package boilers. The steam is used to generate emergency power by three steam-driven turbo-generator sets, which provide 4.16 kilowatts of power to buses supplying selected low-lift pump motors in the 190-KW Building for reactor cooling and miscellaneous critical electrical components in the system. The power may also be used to operate river pumps to supply raw water to the 183-KW Water Treatment Plant. In addition to the electrically-operated pumping system, a separate steam turbine driven pump is provided in the 190 Building to supply emergency flow to the reactor in the event both primary Bonneville Power Administration (BPA) and turbo-generator electrical power fails.

Waste Type: Equipment

Waste Description: The building contains asbestos and has been cleaned twice (in 1993) for PCBs.

Code: 100-K-67

Classification: Accepted

Names: 100-K-67; 165-KE Power Control Building

Reclassification: None

Waste Type: water
Waste Description: Waste water from 105-KE Spent Fuel Storage Basin sub-basin drainage header.

Code: 100-K-69 **Classification:** Accepted
Names: 100-K-69; 105-KE Sump C **Reclassification:** None
Type: Sump **Start Date:**
Status: Inactive **End Date:**

Description: The structure is a concrete sump that receives water from the 105-KE fuel storage basin floor drains in the transfer area. Two electric powered sump pumps return the drain water to the basin.

Location: The sump is located just off the north side of the 105-KE Reactor Building and is near the NW corner of the building.

Waste Type: Process Effluent
Waste Description:

Code: 100-K-70 **Classification:** Accepted
Names: 100-K-70; 105-KE Waste Storage Tank; Holding Tank **Reclassification:** None
Type: Storage Tank **Start Date:** 1/1/1974
Status: Inactive **End Date:**

Description: The site is a steel storage tank for the 105-KE Spent Fuel Storage Basin radioactive drains. The tank is buried under a 1.8 meter (6 foot) deep earth berm. An absolute filter is located on the east end of the tank and a tank level gauge is located on the west end of the tank.

Location: The site is located approximately 8 meters (22.5 feet) north of the 105-KE Building.

Waste Type: Process Effluent
Waste Description:

Code: 100-K-71 **Classification:** Accepted
Names: 100-K-71; 105-KE Collection Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1953
Status: Inactive **End Date:**

Description: The 105-KE Collection Box collects effluent from nine underground process sewer lines that originate in the 105-KE Reactor Building. The effluent exits the Collection Box via 12 inch cast iron and a 16 inch cast iron process sewer pipelines. Sewer pipelines entering the "Collection Box" include the following: Six inch clean drain, 10 inch contaminated drain, 10 inch potentially contaminated drain, 6 inch rod cooling water, 6 inch drain to pluto crib, 12 inch basin drain line, 8 inch basin overflow line, 6 inch vent line, and 4 inch vitrified clay tile decon drain to filter.

Location: The site is located underground approximately 12 meters north of the 105-KE Reactor Building.

Waste Type: Process Effluent
Waste Description: The collection box received waste water from the contaminated drain, potentially contaminated

Waste Description: drain, clean drain, drain to pluto crib, basin drain line, ink system drain, rod cooling water drain, floor drains, the decon drain to filter and basin overflow drain.

Code: 100-K-72 **Classification:** Accepted

Names: 100-K-72; 105-KW Pump Gallery and Catch Tank; D Sump **Reclassification:** None

Type: Catch Tank **Start Date:**

Status: Active **End Date:**

Description: The structure is constructed of a 2.4 meter (8 foot) diameter corrugated steel caisson. A vinyl lined concrete catch tank is located at the bottom of the caisson. Located above the catch tank, is a pump gallery containing two sump pumps and a ladder for access. The total length of the caisson is 11 meters (35 feet 8 inches) and extends from just above grade level at elevation 464.50 feet to elevation 430.83 feet.

Location: The site is located approximately 22 meters (73 feet) north of the northwest corner of the 105-KW Reactor Building and is located just south of 116-KW-2 (105KW Storage Basin French Drain).

Related Sites/ Structures: The catch tank receives basin overflow from the 20 centimeter (8 inch) sub-basin drainage header and a 2" RDW (Radioactive Drain Water) and diverts the catch tank overflow to site 116-KW-2 (Sub basin drainage disposal system).

Waste Type: Water

Waste Description: Waste water from 105-KE Spent Fuel Storage Basin sub-basin drainage header.

Code: 100-K-73 **Classification:** Accepted

Names: 100-K-73; 105-KW Collection Box **Reclassification:** None

Type: Diversion Box **Start Date:**

Status: Inactive **End Date:**

Description: The 105-KW Collection Box collects effluent from nine underground process sewer lines that originate in the 105-KW Reactor Building. The effluent exits the Collection Box via 30 centimeter (12 inch) cast iron and a 41 centimeter (16 inch) cast iron process sewer pipelines. Sewer pipelines entering the "Collection Box" include the following: 15 centimeter (6 inch) clean drain, 25.4 centimeter (10 inch) contaminated drain, 25.4 centimeter (10 inch) potentially contaminated drain, 15 centimeter (6 inch) rod cooling water, 15 centimeter (6 inch) drain to pluto crib, 30 centimeter (12 inch) basin drain line, 20 centimeter (8 inch) basin overflow line, 15 centimeter (6 inch) vent line, and 10 centimeter (4 inch) vitrified clay tile decon drain to filter.

Location: The site is located approximately 6.5 meters (21 feet) north of the 105-KW Reactor Building. The site is underground and its location is not discernible from the ground surface.

Waste Type: Process Effluent

Waste Description: The collection box received waste water from the contaminated drain, potentially contaminated drain, clean drain, drain to pluto crib, basin drain line, ink system drain, rod cooling water drain, floor drains, the decon drain to filter and basin overflow drain.

Code: 100-K-74 **Classification:** Accepted

Names: 100-K-74; 105-KW Waste Storage Tank; **Reclassification:** None

Holding Tank

Type: Storage Tank

Start Date:

Status: Inactive

End Date:

Description: The site is a steel storage tank for the 105-KW Spent Fuel Storage Basin radioactive drains. The tank is buried under a 1.8 meter (6 foot) deep earth berm. An absolute filter is located on the east end of the tank and a tank level gauge is located on the west end of the tank.

Location: The site is located approximately 8 meters (26 feet) north of the 105-KW Building.

**Related Sites/
Structures:** A 5 centimeter (2 inch) line connects the waste storage tank to the Sump "C" (Site Code 100-K-75).

Waste Type: Process Effluent

Waste

Description:

Code: 100-K-75

Classification: Accepted

Names: 100-K-75; 105-KW Sump C

Reclassification: None

Type: Sump

Start Date:

Status: Inactive

End Date:

Description: The structure is a concrete sump that receives water from the 105-KW fuel storage basin floor drains in the transfer area. Two electric powered sump pumps return the drain water to the basin and/or the underground holding tank.

Location: The site is located just north of the 105KW Reactor Building and is near the northwest corner of the building.

**Related Sites/
Structures:** Sump "C" pumps return waste water from the floor drains in the 105-KW Basin Transfer Area to the 105-KW Basin and/or the Holding Tank (site code 100-K-74).

Waste Type: Water

Waste

Description:

Code: 100-K-77

Classification: Accepted

Names: 100-K-77; Underground Railroad Ties Southeast of 1706KE

Reclassification: Interim Closed Out (10/4/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The waste site has been remediated. The site was railroad ties discovered at the bottom of an open excavation. The excavation measured approximately 2.9 meters by 3.1 meters by 2.1 meters deep (9.5 feet by 10 feet by 6.9 feet deep). The sidewalls were braced with lumber. The open excavation had been backfilled, and the railroad ties at the bottom of the excavation were left in place. The sidewall braces were probably removed prior to backfilling. In June 2011, the area was re-excavated. The railroad ties and original backfill soil was removed. The second excavation was backfilled in July 2011.

Location: The site is located approximately 7 meters (23 feet) east southeast of the 1706KE building.

**Process
Description:** The sides of the excavation were braced with lumber to prevent cave in and the top was covered with a tarp to keep precipitation out. Ultrasonic testing was used to find any pipe leaks that

might have been causing the subsidences, but no leaks were identified.

Related Sites/ Structures: The reason for the railroad ties is not known, consequently associated structures are also unknown.

Waste Type: Misc. Trash and Debris

Waste Description: Buried railroad ties.

Closure Info: The exact location of the buried railroad ties was not known. Several areas near the 1706-KE Building were excavated while searching for the waste site location. When the correct location was identified, the railroad ties and original backfilled soil were removed. No visual evidence of spills or leaks was found during or after remediation in the excavation. No in-process sampling was conducted for this waste site. The excavation was backfilled in July 2011.

Code: 100-K-79 **Classification:** Accepted

Names: 100-K-79; Sodium Dichromate and Sulfuric Acid Product Pipelines at 100-K **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: This site includes: 1) the sodium dichromate product pipelines that run from the railroad offloading area to the dichromate storage tanks and then to the adjacent 183.1 Headhouses, at both KE and KW. 2) the sulfuric acid product pipelines that run from the sulfuric acid storage tanks to the 183.1 Headhouses, and the adjacent railroad offloading area, at both KE and KW, and 3) the treated water pipelines that run from the 165 Power Control Buildings to the 105 Reactors, also at both KE and KW. 4) the treated water pipeline connecting the 105KE and 105KW reactor buildings.

Location: These pipelines are located south of both the KE and KW 183.1 Buildings, and between the 165 Buildings and the Reactors in both KE and KW areas.

Release Description: No releases to the environment have been recorded from the pipelines enclosed in the tunnels. However, the railroad offloading facilities and pipe valves may have leaked at various times.

Process Description: Concentrated sodium dichromate and sulfuric acid flowed through the product lines, which are encased in concrete pipe tunnels. The sulfuric acid used had a very high content of mercury. No leaks to the environment are recorded for these pipelines. However, spills may have occurred at the ends of the pipes during offloading procedures. The pipelines between the 165 Buildings and the 105 Reactors held treated water with more dilute sodium dichromate.

Related Sites/ Structures: These pipelines are related to the 120-KW-5 and 120-KE-6 dichromate tank foundations; the 120-KE-4, 120-KE-5, 120-KW-3, and 120-KW-4 sulfuric acid tank foundations, the 183.1 Headhouses, 165 Power Control Buildings, and 105 Reactors.

Waste Type: Equipment

Waste Description: The waste is residual sodium dichromate (chromium 6) and mercury (from sulfuric acid) in the pipes and potential leaks from the offloading station.

Code: 100-K-82 **Classification:** Accepted

Names: 100-K-82; 105-KW Fuel Storage Basin Leak **Reclassification:** None

Code: 100-K-97 **Classification:** Accepted
Names: 100-K-97; 183-KW French Drain and Rail Spur **Reclassification:** None
Unplanned Release
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of a French Drain that was used to collect drainage from the chromate system transfer hose after unloading the railcar. It also includes an unplanned release along the railroad tracks on the Head House rail spur.

Location: The French Drain is located south of the 183 KW Head House, just south of the 100-K-19 (183-KW Caustic Soda Storage Tank Site), southwest of 100-K-18 (183-KW Caustic Neutralization Pit), and north of the railroad.

Process Description: The Head House rail spur was used for delivery of water treatment equipment and chemicals. Anecdotal information indicates that sodium dichromate and sulfuric acid spills were not uncommon during railcar unloading operations, which led to the assignment of the unplanned release along the rail spur. After railcar unloading operations were complete, the sodium dichromate transfer hose was placed into the open French Drain to collect excess product in a controlled manner.

Code: 100-K-98 **Classification:** Accepted
Names: 100-K-98; 183-KE French Drain and Rail Spur **Reclassification:** None
Unplanned Release
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of a French Drain that was used to collect the drainage from the transfer hose after unloading the railcar.

Location: The French Drain is located south of the 183 KE Head House, just south of the 100-K-25, 183-KE Caustic Neutralization Pit, southwest of 100-K-25, 183-KE Caustic Neutralization Pit, and north of the railroad.

Process Description: The Head House rail spur was used for delivery of water treatment equipment and chemicals. Anecdotal information indicates that sodium dichromate and sulfuric acid spills were not uncommon during railcar unloading operations, which led to the assignment of the unplanned release along the rail spur. After railcar unloading operations were complete, the sodium dichromate transfer hose was placed into the open French Drain to collect excess product in a controlled manner.

Code: 100-K-101 **Classification:** Accepted
Names: 100-K-101; French Drains and Mercury Stained **Reclassification:** None
Soils near the 183KE Sedimentation Basin
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of a French Drain surrounded by mercury stained soil adjacent to the KE Sedimentation Basin near the abutments. There is also a black hose assembly.

Location: The site is located in the KE area along the south face of the Sedimentation Basin.

Code: 100-K-102 **Classification:** Accepted
Names: 100-K-102; French Drains and Mercury Stained Soils near the 183KW Sedimentation Basin **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a French Drain surrounded by mercury stained soil adjacent to the Sedimentation Basin near the abutments. There is also a black hose acid delivery system.
Location: The site is located in the KW area between the Sedimentation Basin and the Headhouse.

Code: 100-K-103 **Classification:** Accepted
Names: 100-K-103; 1704-K and 1717-K Septic Systems; Additional Components of 1607-K4 **Reclassification:** None
Type: Settling Tank **Start Date:**
Status: Unknown **End Date:**
Description: This WIDS site addresses seven components of the 1717K Septic System that were not included in the Closed Out 1607-K4 waste site. 100-K-103 includes the Original Tile Field, the Replacement Septic Tank, one Leaching Trench and four distinct Replacement Tile Field, built in 1995.
Location: The additional septic system components surround the Closed Out 1607-K4 Septic Tank and Tile Field. All of the components are located north of the 1717K building, inside the 100-K Area.
Process Description: The leaching trench received waste from only the 1717-L Maintenance Building. The remaining components received waste from both 1717-K and the 1704-K office building.

Code: 100-K-104 **Classification:** Accepted
Names: 100-K-104; 166-KE French Drain **Reclassification:** None
Type: French Drain **Start Date:**
Status: Unknown **End Date:**
Description: A site visit in July 2008 could not visually identify the french drain. The drain was fed by approximately 30 meters (100 feet) of underground piping.
Location: The french drain is described on drawings to be approximately 30 meters (100 feet) west of the 166-KE building.
Process Description: The source of the effluent is a sump in the 166-KE Pump Room.

Code: 100-K-105 **Classification:** Accepted
Names: 100-K-105; Pit at Southeast Corner of 100K **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1955
Status: Inactive **End Date:**
Description: The pit cannot be visually identified at the present time. An open pit was clearly visible on

historical photograph 3346-NEG, taken in April 1955. Later photographs do not show any evidence of the pit. It is presumed to have been backfilled prior to 1965.

Location: The open pit is located in the southwest corner of 100-K West Area, near the perimeter road.

Process Description: There are no facilities near the open pit. It is not known what the pit was used for.

Code: 100-K-106 **Classification:** Accepted

Names: 100-K-106; 182-K Fuel Oil Crib **Reclassification:** None

Type: Crib **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground, rock filled drainage crib next to the 182-K Building.

Location: The centerline of the crib is approximately 6.1 meters (20 feet) west of the northwest corner of the 182-K building.

Process Description: The crib supported the 182-K midway pump station that contained three diesel powered pumps. Discharge to crib was via a 15 centimeter (6 inch) diameter crib drain, that exited the building in two locations. One exited on the north end of the building and entered the east end of crib. Upon entering the crib, the piping consists of a 6 inch diameter corrugated metal perforated pipe. The other source to the crib is through a floor drain that collected drainage from a fuel oil centrifuge and a refrigerated drinking fountain.

Code: 100-K-107 **Classification:** Accepted

Names: 100-K-107; 1706-KER Abandoned Drain Field **Reclassification:** None

Type: Drain/Tile Field **Start Date:**

Status: Inactive **End Date:**

Description: A fenced area 31 meters (102 feet) northwest of the northwest corner of the 1706-KER building is assumed to be this abandoned drain field.

Location: The abandoned drain field is located north and west of 1706-KER.

Process Description: The 1706-KER facility provided experimental data on the effect of water qualities, water temperature and pressure, and physical and chemical properties of materials of construction upon reactor operation and control, upon reactor tubes and slugs, and upon associated equipment when operating closed in-pile recirculation systems at elevated temperatures and pressures. It was also known as a decontamination and hot shop. Effluent from the building toilets and floor drains exited the facility via a 10.2 centimeter (4 inch) drain line to this drain field.

Code: 100-K-108 **Classification:** Accepted

Names: 100-K-108; 1706-KER Septic System; 1706-KER Septic Tank; Crib and Sewer Line **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Unknown **End Date:**

Description: The site consists of a septic tank, crib, and associated piping that received effluent from the hot

maintenance shop in 1706-KER building.

Location: The septic tank, crib, and associated piping are located northwest of the 1706-KER Building.

Process Description: The 1706-KER facility provided experimental data on the effect of water qualities, water temperature and pressure, and physical and chemical properties of materials of construction upon reactor operation and control, upon reactor tubes and slugs, and upon associated equipment when operating closed in-pile recirculation systems at elevated temperatures and pressures. It was also known as a decontamination and hot shop. The septic tank has a 2271 liter (600 gallon.) capacity tank, measuring 1.37 meters (54 inches) diameter by 1.78 meters (70 inches) depth. It is asphalt coated. The septic tank weighs 197 kilograms (435 pounds) and is constructed of 14 gauge steel. The crib is 1.8 meters (6 feet) wide by 2.1 meters (7 feet) tall. It was constructed of 15.2 by 15.2 centimeter (6x6 inch) treated (coal tar creosote) wooden timbers. The outside of the crib is covered with wire mesh. A 10.2 centimeter (4 inch) vent pipe exits the top of the crib. During operation of the building, the crib was surrounded by wood guard posts. The pipeline has a minimum soil cover of 0.8 meters (2.5 feet).

Waste Type: Chemicals

Waste Description: Contaminants of Potential Concern may include radionuclides (fission products), ICP metals, mercury, TPH and hexavalent chrome.

Code: 100-K-109

Classification: Accepted

Names: 100-K-109; Unplanned Chemical Release near 183.1KW Head House; Yellow Stained Soil adjacent to 183.1KW Head House

Reclassification: Interim Closed Out (11/18/2011)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The waste site has been remediated. It was an area of yellow stained soil, from an unplanned release that is adjacent to the railroad track, south, southwest of the demolished 183.1KW headhouse.

Location: The visible stained soil was located near the southwest corner of the demolished 183.1KW Head House building near the railroad track.

Process Description: The Head House rail spur was used for delivery of water treatment equipment and chemicals. Anecdotal information indicates that sodium dichromate and sulfuric acid spills were common during railcar unloading operations, which led to the unplanned releases along the rail spur. Historical drawings and photographs show this stained soil area is adjacent to a rail car unloading area. It is also adjacent to a 183.1KW head house and two alum storage tanks (previously removed).

Related Sites/ Structures: The area is associated with the 183.1KW Head House and the 100-K-15 and 100-K-16 Alum tanks.

Closure Info: Excavation of 100-K-109 began in August, 2010 to remove stained soils, and excavation was completed in June, 2011, when the last stained soil was removed and disposed at the Environmental Restoration Disposal Facility (ERDF). The original area, based on the posted Underground Radioactive Material Area, was estimated to be 48.7 meters (160 ft) long by 21.3 meters (70 ft) wide that equaled an area of 981 square meters (10,559 sq. ft.). The actual remediated area more than double the original estimate. 1,861 square meters (20,031.6 sq. ft.) was excavated, due to removal of a significant amount of stained soils. The excavation was anticipated to end at a depth of 4.6 meters (15 ft). However, the excavation the yellow-colored contaminated soil continued to the final depth of the remediation was 7.84 meters (25.7 ft), due

to the ongoing detection of mercury contamination at levels above the RAGs in the RDR/RAWP (DOE/RL-96-17).

Code:	118-K-1	Classification:	Accepted
Names:	118-K-1; 100-K Burial Ground; 118-K	Reclassification:	None
Type:	Burial Ground	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1975
Description:	The site runs northwest and southwest and contains approximately fifty trenches and pits and eleven silos. The trench and pit dimensions vary greatly. The silos range from 1.4 meter (4.5 feet) to 3 meters (10 feet) in diameter. Their depths range from 7.6 meters (25 feet) to 9.8 meters (32 feet deep). The site has two parts, the main burial ground and the area known as the CGI-791 addition.		
Location:	The site is located 244 meters (800 feet) northeast of 105-KE Reactor Building, outside the perimeter fence.		
Process Description:	This burial ground received solid waste from both the 100-K and 100-N Areas. A low level waste incinerator was located near the southeast corner of the burial ground. The incinerator was constructed of a steel plate box, measuring 1.8 meters (6 feet) by 6.1 meters (20 feet). It had a 2.4 meter (8 foot) high stack. Six silos received reactor hardware, three silos contain incinerator ashes and two silos contain irradiated nickel plated boron balls from the emergency 3X system.		
Related Sites/Structures:	A forced draft incinerator and associated stack with a fly ash screen on top was located in the southeast corner of the site.		
Waste Type:	Equipment		
Waste Description:	This unit contains numerous trenches and vertical steel pipes of various sizes that contain radioactive solid waste from 105-K and 105-N Reactors. The trenches miscellaneous debris. Some 100-N waste includes zirconium cladding hulls and basin n sludge. The incinerator operated for several years burning low-level contaminated combustible material. All contaminated burning was halted in October 1960. Six silos received reactor hardware, three silos contain incinerator ashes and two silos contain irradiated nickel plated boron balls from the emergency 3X system.		

Code:	128-K-1	Classification:	Accepted
Names:	128-K-1; 100-K Burning Pit	Reclassification:	Interim Closed Out (8/24/2004)
Type:	Burn Pit	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The site has been remediated and interim closed out. The site was a slight depression, about 0.91 meters (three feet) below the surrounding grade, with pieces of debris (mostly concrete and metal) showing at the surface.		
Location:	The site was located outside of the perimeter fence, southeast of the 100-K Burial Ground (118-K-1) and northeast of the 183-KE Settling Basins.		
Process Description:	This site was used for the disposal of nonradioactive combustible materials such as paint waste, office waste, and chemical solvents.		
Waste Type:	Misc. Trash and Debris		
Waste Description:	The site was used for the disposal of nonradioactive combustible materials such as paint waste		

Waste Description: office waste, and chemical solvents.

Closure Info: Remedial action at the site consisted of two phases of confirmatory sampling that was conducted at the site in April and May 2003. Phase I consisted of test trenches and a test pit to evaluate the potential presence of buried debris or contaminated soil. Phase II consisted of identification and removal of surface debris with waste characterization and soil sampling, as needed.

During the Phase II sampling, one location (P16) was found to have semivolatile organic contamination that required remediation. With agreement from the U.S. Environmental Protection Agency, the area with elevated levels of contamination was excavated during December 2003. The contaminated soil was disposed of at the Environmental Restoration Disposal Facility. After remediation, a verification sample of the underlying soil was collected to confirm that cleanup levels had been met. The results indicated that the waste removal action achieved compliance with the remedial action objectives for 128-K-1 site. The sample results are stored in the Environmental Restoration (ENRE) Project-Specific Database for Bechtel Hanford prior to archiving in the Hanford Environmental Information System (HEIS) and were summarized in Appendix B of the RSVP. The maximum detected residual contaminant levels from the soil samples were used to support site reclassification.

In accordance with the RSVP evaluation, the confirmatory sampling and verification sampling, results support a reclassification of this site to interim closed out. The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE-RL-96-17, Rev. 5) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units (EPA 1999). The results show that the residual soil concentrations support future unrestricted land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrate that residual contaminant levels in the soil are protective of groundwater and the Columbia River.

Code: 128-K-2	Classification: Accepted
Names: 128-K-2; 100-K Construction Dump	Reclassification: None
Type: Burn Pit	Start Date:
Status: Inactive	End Date:
Description: The site has not been covered with fill. A single chain fence with asbestos warning signs marks the area.	
Location: The site is located approximately 0.3 kilometers (0.2 miles) southwest of the K Area perimeter fence along the old Hanford Irrigation Project Canal.	
Waste Type: Misc. Trash and Debris	
Waste Description: A wide variety of trash is exposed on the ground surface. There is evidence of burning in many locations. Most of the material on the surface is scrap metal and glass. Office waste, paint, solvents, laboratory waste have also been found. The area is also covered with nonfriable and friable asbestos.	

Code: 130-K-2	Classification: Accepted
Names: 130-K-2; 1717-K Waste Oil Storage Tank	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1955

Status: Inactive**End Date:** 1/1/1972**Description:** The site was an underground waste oil storage tank oriented with the long axis of the tank in a north-south direction. The tank was used for storing used motor oil. The tank was left with a residual heel when the facilities were deactivated in 1971. The concrete pad over the top of the tanks was removed in July 1989. This allowed Pacific Northwest Laboratories to return to the tank site and perform Underground Penetrating Radar (UPR) to aid in locating the tank without the interference caused by the rebar in the concrete. The tank was excavated in July 1989. The soil around where the tanks had been located was sampled, the results analyzed, and the site backfilled to match the surrounding grade.**Location:** The site was located approximately 0.3 meters (1 foot) north of the 1717-K Maintenance and Transportation Service Building and 6.1 meters (20 feet) from the northwest corner of this building.**Related Sites/
Structures:** The site was related to the 1717-K Maintenance and Transportation Service Building.**Waste Type:** Oil**Waste** The unit was used for storage of used motor oil.**Description:**

Code: 1607-K1**Classification:** Accepted**Names:** 1607-K1; 1607-K1 Sanitary Sewer System; 1607-K1 Septic Tank; 1607-K1 Septic Tank and Associated Drain Field; 124-K-1**Reclassification:** None**Type:** Septic Tank**Start Date:** 1/1/1955**Status:** Active**End Date:****Description:** The sanitary sewer system is composed of a septic tank, leaching trench and associated piping. The septic tank and dosing chamber are composed of reinforced concrete per Hanford Standard E-5-11. There is a maximum of 1.5 meters (5 feet) of fill on the cover slab. There are 61 meters (200 feet) of 15 centimeter (6 inches) vitrified clay pipe to the septic tank, followed by 6.1 meters (20 feet) of 15 centimeter (6 inches) vitrified clay pipe to the leaching trench. The leaching trench contains 9.1 meters (30 feet) of 15 centimeters (6 inches) vitrified clay pipe laid with open joints.**Location:** The system is located east of 1701-K, outside the patrol road and inside the 100K area fence.**Related Sites/
Structures:** The system serviced the 1701-K (Badge House) and 1720-K (Offices and Telephone Exchange) buildings.**Waste Type:** Sanitary Sewage**Waste** This unit receives sanitary sewage from 1701-K Badgehouse (security checkpoint), 1720-K**Description:** Patrol Offices and Change Room, and 1721-K Trailer. The flow rate to this unit is estimated to have been 1,987 liters (525 gallons) per day.

Code: 1607-K2**Classification:** Accepted**Names:** 1607-K2; 1607-K2 Sanitary Sewer System; 1607-K2 Septic Tank; 1607-K2 Septic Tank and Associated Drain Field; 124-KE-1**Reclassification:** None**Type:** Septic Tank**Start Date:** 1/1/1955**Status:** Active**End Date:****Description:** The sanitary sewer system is composed of a septic tank, leaching trench and associated piping.

The septic tank is composed of steel per Hanford Standard E-5-11. There is a maximum of 1.5 meters (5 feet) of fill on the cover slab. There are 26 meters (85 feet) of 15 centimeter (6 inches) vitrified clay pipe to the septic tank, followed by 6.1 meters (20 feet) of 15 centimeter (6 inches) vitrified clay pipe to the leaching trench. The leaching trench contains 33.5 meters (110 feet) of 15 centimeters (6 inches) vitrified clay pipe laid with open joints.

Location: The site is located east of 183-KE (Head House) and northeast of the 183-KE Chlorine Vault.

Related Sites/ Structures: The site serviced the 183-KE building.

Waste Type: Sanitary Sewage

Waste Description: This unit receives sanitary sewage from 183-KE Water Treatment Plant. The flow rate is estimated to have been 1230 liters (325 gallons) per day.

Code: 1607-K3 **Classification:** Accepted

Names: 1607-K3; 1607-K3 Sanitary Sewer System; 1607-K3 Septic Tank; 1607-K3 Septic Tank and Associated Drain Field; 124-KW-2 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1970

Description: The tank and drain field are enclosed within a wooden fence and marked with Septic Tank and Drain Field signs.

Location: The site is located west of 183-KW (Head House) and northwest of the 183-KW Chlorine Vault.

Process Description: The sanitary sewer system is composed of a septic tank, leaching trench, and associated piping. The 1900-liter (500-gallon) septic tank is constructed of steel per Hanford Standard E-5-11. There is a maximum of 1.5 meters (5 feet) of fill on the cover slab. The inlet pipe is 26 meters (85 feet) long and is constructed of 15-centimeter (6-inch) vitrified clay pipe. The pipe from the tank to the leach trench is 6.1 meters (20 feet) long and is also constructed of 15-centimeter (6-inch) vitrified clay pipe. The leaching trench contains 33.5 meters (110 feet) of 15-centimeter (6-inch) vitrified clay pipe laid with open joints.

Related Sites/ Structures: The site serviced the 183-KW Building.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from 183-KW Water Treatment Plant. The flow rate is estimated to have been 1,230 liters (325 gallons) per day.

Code: 1607-K5 **Classification:** Accepted

Names: 1607-K5; 1607-K5 Sanitary Sewer System; 1607-K5 Septic Tank; 1607-K5 Septic Tank and Associated Drain Field; 124-KE-2 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1955

Status: Active **End Date:**

Description: The unit includes a tile field.

Location: This septic tank and drain field are east of the 105-KE Reactor and west of the 118-K-1 Burial Ground.

Related Sites/ Structures: KE Powerhouse, 105-KE Reactor Building, and 115-KE Gas Recirculation System.

Waste Type: Sanitary Sewage

Waste Description: This unit receives sanitary sewage from 1706-KER Flow Laboratory, 1706-K Water Treatment Laboratory, 165-KE Powerhouse, 105-KE Reactor Building, and 115-KE Gas Recirculation System. The flow rate to this unit is estimated at 700 gal/d.

Code: 1607-K6 **Classification:** Accepted

Names: 1607-K6; 1607-K6 Sanitary Sewer System; 1607-K6 Septic Tank; 1607-K6 Septic Tank and Associated Drain Field; 124-KW-1 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1955

Status: Active **End Date:**

Description: The unit includes a tile field and the piping from the facilities to the tile field.

Location: This facility is east of the 105-KW Reactor.

Related Sites/ Structures: This unit receives sanitary sewage from 105-KW Reactor Building, 115-KW Gas Recirculation Building, and 165-KW Powerhouse.

Waste Type: Sanitary Sewage

Waste Description: This unit receives sanitary sewage from 105-KW Reactor Building, 115-KW Gas Recirculation Building, and 165-KW Powerhouse.

Code: 116-KE-1 **Classification:** Accepted

Names: 116-KE-1; 115-KE Condensate Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The crib and pipeline have been removed and the site backfilled with clean soil to the average adjacent grade elevation.

Location: The crib was located north of 115-KE and east of 118-KE-1 (105-KE Reactor Building).

Process Description: The base of the crib was 1.8 meters (6 feet) in diameter and was positioned 7.8 meters (25.5 feet) below the ground surface. The top of the crib measures 12.2 meters (40 feet) in diameter. The crib was filled with coarse gravel to 3 meters (10 feet) above the base. The remainder of the crib was backfilled with dirt to grade. The site included the feed pipeline coming from the 115-KE Building.

Related Sites/ Structures: The distribution system was composed of a 10.2-centimeter (4-inch) pipe that led into an 20.3-centimeter (8-inch) corrugated galvanized steel perforated pipe, 3.2 meters (10.5 feet) long, with two 2-meter (6.5-foot) sections branching off at 45 degrees. The site received effluent from the 105-KE Reactor Buildings.

Waste Type: Process Effluent

Waste Description: The site received condensate and other waste from reactor gas purification systems. Beta/gamma concentrations within the crib, taken from two sample boreholes drilled in 1976, range from 4.5E+05 picocuries per gram to 8.6E+05 picocuries per gram. The radionuclide inventory curies decayed through April 1, 1986, includes tritium (56.5 curies), carbon-14 (110 curies), and small amounts of other elements.

Code: 116-KE-2 **Classification:** Accepted
Names: 116-KE-2; 1706-KER Waste Crib **Reclassification:** None
Type: Crib **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1971

Description: A wooden crib structure of dimensions 3 meters (10 feet) by 3 meters (10 feet) by 3 meters (10 feet) rests 0.9 meters (3 feet) above the bottom of an excavation. The length and width of the excavation measured approximately 9.1 meters (30 feet) by 9.1 meters (30 feet) at grade and 4.9 meters (16 feet) by 4.9 meters (16 feet) at the base, and was 10.5 meters (34.5 feet) deep. The bottom 3 meters (10 feet) of the excavation was filled with crushed stone then backfilled. The distribution pipes enter the crib structure 7 meters (23 feet) below grade. The side slope ratio was 1:1. The site also includes two 5.1-centimeter (20-inch) steel schedule 40 pipelines that terminate at the west wall of the 1706-KER Building approximately 6.1 meters (20 feet) below grade. The pipelines are approximately 55 meters (180 feet) long.

Location: The crib is located west of the 1706-KER Building.

Waste Type: Process Effluent

Waste Description: The site received wastes from cleanup columns in the 1706-KER loop. Drilling in the mid-1970's next to the crib revealed concentrations of radionuclides in the soil. The total estimated concentration was 38 curies. The radionuclide inventory decayed through April 1, 1986, was estimated at approximately 14.6 curies, and is composed predominantly of cobalt-60 and strontium-90. Approximately 100,000 kilograms (220,500 pounds) of sodium hydroxide may have been disposed of into the crib as well as 100,000 kilograms (220,500 pounds) of sulfuric acid.

Code: 116-KE-3 **Classification:** Accepted
Names: 116-KE-3; 105-KE Fuel Storage Basin Sub-Basin Drainage Disposal System Crib; 105-KE Storage Basin French Drain **Reclassification:** None
Type: Injection/Reverse Well **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1971

Description: The site is part of the sub-basin drainage disposal system for the 105-KE Fuel Storage Basin (100-K-42). The site includes the following components: a feed pipe, crib structure, dry well, and test hole. The area of the site is cobble covered and posted with "Underground Radioactive Material" warning signs. A mound of soil, installed in 1977 or 1978, is located nearby and covers some of the ancillary units related to this site. The test hole's 10.2-centimeter (4-inch) diameter steel casing that originally extended above finish grade level is no longer visible. A 20.3-centimeter (8-inch) corrugated galvanized steel feed pipe 8.8 meters (29 feet) below grade comes from the fuel storage basin. The feed pipe enters the crib structure at elevation 133 meters (435.5 feet). The crib structure, in plan view, is trapezoid shaped with the top at grade level (Elevation: 142 meters [464.5 feet]) and approximately 18.3 meters (60 feet) in width (excavation and backfill width) and the bottom (Elevation: 425.5 feet) 3.05 meters (10 feet) in width. The bottom 3.7 meters (12 feet) of the crib is filled with coarse gravel. The distribution system (drain field) within the crib is a central feeder with side feeders ("fishbone") located 8.8 meters (29 feet) below grade. All feeder piping is composed of 20.3-centimeter (8-inch) corrugated and perforated galvanized steel pipe. The main feeder pipe within the drain field is 6.1 meters (20 feet) long. The side feeders coming from each side of the central feeder are 2.7 meters, 3.2 meters, 2.6 meters, and 1.5 meters (9.0 feet, 10.5 feet, 8.5 feet, and 5.0 feet) in length, 1.75 meters, 1.7 meters, and 1.3 meters (5.75 feet, 5.5 feet, 4.25 feet) apart, and set at an angle of 30 degrees (Drawing #H-1-23207 is labeled 30 degrees, however, it appears on the

drawing to be closer to 60 degrees.) The drain field is 6.1 meters (20 feet) in diameter. A dry well (injection well) was installed at the midpoint (Washington State Plane Coordinates: Easting 569130.985, Northing 146753.534) of the drain field main feeder pipe. The dry well is constructed of 20.3-centimeter (8-inch) schedule 40 steel well casing. The dry well casing runs from elevation 435.5 feet (8.8 meters/29 feet below grade) downward to a point 3.05 meters (10 feet) below the mean water table. The bottom 6.1 meters (20 feet) of the well casing is perforated. The 10.2-centimeter (4-inch) steel test hole extended from the surface to the head end of the drain field. The test hole piping was the only part of site's structure that was above grade. The construction of the "D" catch tank modification would have covered the test hole.

Location: The site is located north of the 105-KE Reactor Building (118-KE-1) about 23 meters (75 feet).

Process Description: The site operated from 1955 to 1971 as an overflow crib for sub-basin drainage from the 105-KE Fuel Storage Basin (100-K-42).

Waste Type: Process Effluent

Waste Description: The waste is contaminated structures and soil from the fuel storage basin sub-basin drainage system.

Code: 116-KE-5	Classification: Accepted
Names: 116-KE-5; 150-KE Heat Recovery Station	Reclassification: Interim Closed Out (9/23/2005)
Type: Process Unit/Plant	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1971

Description: The site has been remediated and interim closed out. The facility was constructed on a concrete pad and consisted of heat exchangers and associated piping. The heat exchangers had been removed and are being used elsewhere. Exposed piping had wooden covers installed over the open ends.

Location: The site was located north of 118-KE-1 (105-KE Reactor Building) and east of the reactor cooling effluent lines near 116-KE-4 (107-KE Retention Basins).

Release Description: There were no known releases from this heat exchange station. Only surface contamination is on the remaining pipes.

Process Description: The heat recovery station was used to transfer heat from the 105-KE Reactor cooling water effluent. The station used an ethylene glycol solution as the heat exchanger medium. The system was no longer intact.

Waste Type: Equipment

Waste Description: Trace amounts of radioactive contamination remain on piping.

Description:

Closure Info: 100-K-55:1, 100-K-56:1, 116-KW-4 and 116-KE-5 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities involving excavation and staging of overburden material and removal of contaminated piping, debris, and soil began on December 9, 2002.

The Cleanup Verification Package for the 100-K-55:1 and 100-K-56:1 Pipelines and the 116-KW-4 and 116-KE-5 Heat Recovery Stations, (CVP-2005-00006), documented that the 100-K-55:1 and 100-K-56:1 pipelines were remediated in accordance with the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units,

Hanford Site, Benton County, Washington (ROD) (EPA 1997). Remedial action objectives (RAOs) and remedial action goals (RAGs) for these sites were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 5). The 116-KW-4 and 116-KE-5 sites were also remediated as part of remedial efforts for the pipelines.

Final cleanup verification sampling was conducted from January 26, 2005, to June 23, 2005 following variance analysis. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency (EPA) analytical methods as required per the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 96-22, Rev. 3) for the 100-K-55 and 100-K-56 pipelines. Sample numbers were too numerous to report, sample numbers and results may be found in Appendix A of CVP-2005-00006. Each verification sample was composed of a composite sample formed by combining soil collected at the required number of randomly selected locations within each sampling area (excluding the quality assurance/quality control samples).

The CVP-2005-00006 demonstrated that remedial actions at the 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites have achieved the RAOs and corresponding RAGs established in the RDR/RAWP. The contaminated materials from these sites have been excavated and disposed at the ERDF. The remaining soils at the sites have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River.

The 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites were verified to be remediated in accordance with the ROD and may be backfilled

Code:	116-KE-6A	Classification:	Accepted
Names:	116-KE-6A; 1706-KE Condensate Collection Tank; 1706-KE Waste Treatment System	Reclassification:	Interim Closed Out (8/4/2010)
Type:	Storage Tank	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1987
Description:	The unit consisted of a 96 gallon condensate collection tank, which was part of the 1706-KE Waste Treatment System installed in 1984.		
Location:	The tank was located northwest of the 1706-KER building.		
Release Description:	On August 18, 1986, a 30 gallon epoxy vessel overheated. The event resulted in the forcible ejection of some of the resin material from the treatment unit. The epoxy overheating caused the emission of thick white vapors but no fire was observed. The ejected waste material was slightly radioactive. The material was cleaned up and packaged for low-level burial by operations personnel. No radioactivity was found outside the radiation zone. The area was cleaned to background radiation levels. (see Event Investigation Report D/T-86-01)		
Process Description:	In 1984, a new system of radioactive waste treatment was initiated that consisted of an evaporation and epoxy encapsulation unit. During the original operation, a small stream of waste water was fed into a drum of hot epoxy at a constant rate. The water flashed to steam and traveled to a condenser where it was cooled and collected in the condensate collection tank. The liquid was sampled to determine if the radionuclide content was below releasable limits. Solids were collected in the epoxy. When a sufficient volume of epoxy (containing solid waste) was accumulated, a catalyst was added to harden the epoxy in the drum. The drum of solid epoxy was sealed and transported to a radioactive burial ground. This process ended in August 1986 when an ion exchange column was attached the accumulation tank. This process circulated the radioactive waste water through the ion exchange column until the radionuclide		

content was below the releasable limit.

**Related Sites/
Structures:** Other WTS sites were 116-KE-6B, 6C, 6D.

Waste Type: Equipment

**Waste
Description:** The unit was used to treat radioactive wastes generated from sample analysis and test activities conducted in the laboratories of the 1706-KE Building. The system stopped operating in 1987. All of the waste was removed in 1994.

Closure Info: 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D were addressed as a group. The information below documents information for the group of sites.

Interim remedial actions for 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D waste sites, which collectively comprised the 1706-KE Waste Treatment System (WTS), have been successfully completed to mitigate hazardous chemical and radioactive releases to the environment. The interim remedial action Remaining Sites Verification Package (RSVP) (DOE/RL-2010-42) documents the remedial actions conducted under the EPA/ROD/R10-99/039, Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (referred to as the 100 Area Remaining Sites ROD). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039) as documented in EPA, 2004, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 1706-KE Waste Treatment System (WTS), was a Treatment, Storage and Disposal (TSD) unit located in the 1706-KER Building under the Resource Conservation and Recovery Act of 1976 (RCRA) and subject to RCRA corrective action requirements. As documented in the 100 Area Remaining Sites ROD, the RCRA corrective actions and CERCLA remedial actions were coordinated such that the result of the remedial action satisfied both sets of requirements. RCRA closure of the WTS was completed in 2009 in accordance with the approved closure plan, Hanford Facility Dangerous Waste Closure/ Post closure Plan for the 1706-KE Waste Treatment System, DOE/RL-2009-29 (RCRA TSD closure plan). The DOE/RL-2010-42 RSVP addresses the completion of the CERCLA remedial action.

Remedial action activities were accomplished from June 15 through July 9, 2009. The waste materials from sites 116-KE-6A, 116-KE-6B, and 116-KE-6C were loaded on shipping containers July 1, 2009, and shipped to the Environmental Restoration Disposal Facility (ERDF) on July 9, 2009. The 116-KE-6D site was disposed in October 1996 at the low-level burial grounds.

After completion of the TSD closure activities, Ecology provided an approval letter for the RCRA TSD closure plan. Upon completion of remediation, a Professional Engineer's Certification for the RCRA Closure of the 1706-KE WTS was issued. The engineer's certification and Ecology's acceptance letter were provided in Appendices A and B of the RSVP, respectively.

Verification sampling was not required under the scope of closure for the waste sites, since the floor and walls in the 1706-KER Building were not included as part of either the RCRA TSD closure certification or under this CERCLA remedial action.

The cost to remove the above-grade portion of the 1706-KER Facility, which included removal and

disposal of the waste sites was approximately \$1.60 million. The effort to remove the waste sites was estimated at 10 percent of the project cost, which yielded an estimated cost of \$160,000 for remediation of the four waste sites.

Code: 116-KE-6B **Classification:** Accepted
Names: 116-KE-6B; 1706-KE Evaporation Tank; 1706-KE Waste Treatment System **Reclassification:** Interim Closed Out (8/4/2010)
Type: Storage Tank **Start Date:** 1/1/1984
Status: Inactive **End Date:**

Description: The site consisted of a 30 gallon evaporation unit, which was part of the 1706-KE Waste Treatment System installed in 1984.

Location: The tank is located northwest of the 1706-KER building.

Release Description: On August 18, 1986, a 30 gallon epoxy vessel overheated. The event resulted in the forcible ejection of some of the resin material from the treatment unit. The epoxy overheating caused the emission of thick white vapors but no fire was observed. The ejected waste material was slightly radioactive. The material was cleaned up and packaged for low-level burial by operations personnel. No radioactivity was found outside the radiation zone. The area was cleaned to background radiation levels. (see Event Investigation Report D/T-86-01)

Process Description: In 1984, a new system of radioactive waste treatment was initiated that consisted of an evaporation and epoxy encapsulation unit. During the original operation, a small stream of waste water was fed into a drum of hot epoxy at a constant rate. The water flashed to steam and traveled to a condenser where it was cooled and collected in the condensate collection tank. The liquid was sampled to determine if the radionuclide content was below releasable limits. Solids were collected in the epoxy. When a sufficient volume of epoxy (containing solid waste) was accumulated, a catalyst was added to harden the epoxy in the drum. The drum of solid epoxy was sealed and transported to a radioactive burial ground. This process ended in August 1986 when an ion exchange column was attached the accumulation tank. This process circulated the radioactive waste water through the ion exchange column until the radionuclide content was below the releasable limit.

Related Sites/ Structures: Other WTS sites were 116-KE-6A, 6C, 6D.

Waste Type: Equipment

Waste Description: The unit was used to treat radioactive wastes generated from sample analysis and test activities conducted in the laboratories of the 1706-KE Building. The system stopped operating in 1987. All of the waste was removed in 1994.

Closure Info: 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D were addressed as a group. The information below documents information for the group of sites.

Interim remedial actions for 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D waste sites, which collectively comprised the 1706-KE Waste Treatment System (WTS), have been successfully completed to mitigate hazardous chemical and radioactive releases to the environment. The interim remedial action Remaining Sites Verification Package (RSVP) (DOE/RL-2010-42) documents the remedial actions conducted under the EPA/ROD/R10-99/039, Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (referred to as the 100 Area Remaining Sites ROD). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039)

as documented in EPA, 2004, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 1706-KE Waste Treatment System (WTS), was a Treatment, Storage and Disposal (TSD) unit located in the 1706-KER Building under the Resource Conservation and Recovery Act of 1976 (RCRA) and subject to RCRA corrective action requirements. As documented in the 100 Area Remaining Sites ROD, the RCRA corrective actions and CERCLA remedial actions were coordinated such that the result of the remedial action satisfied both sets of requirements. RCRA closure of the WTS was completed in 2009 in accordance with the approved closure plan, Hanford Facility Dangerous Waste Closure/ Post closure Plan for the 1706-KE Waste Treatment System, DOE/RL-2009-29 (RCRA TSD closure plan). The DOE/RL-2010-42 RSVP addresses the completion of the CERCLA remedial action.

Remedial action activities were accomplished from June 15 through July 9, 2009. The waste materials from sites 116-KE-6A, 116-KE-6B, and 116-KE-6C were loaded on shipping containers July 1, 2009, and shipped to the Environmental Restoration Disposal Facility (ERDF) on July 9, 2009. The 116-KE-6D site was disposed in October 1996 at the low-level burial grounds.

After completion of the TSD closure activities, Ecology provided an approval letter for the RCRA TSD closure plan. Upon completion of remediation, a Professional Engineer's Certification for the RCRA Closure of the 1706-KE WTS was issued. The engineer's certification and Ecology's acceptance letter were provided in Appendices A and B of the RSVP, respectively.

Verification sampling was not required under the scope of closure for the waste sites, since the floor and walls in the 1706-KER Building were not included as part of either the RCRA TSD closure certification or under this CERCLA remedial action.

The cost to remove the above-grade portion of the 1706-KER Facility, which included removal and disposal of the waste sites was approximately \$1.60 million. The effort to remove the waste sites was estimated at 10 percent of the project cost, which yielded an estimated cost of \$160,000 for remediation of the four waste sites.

Code:	116-KE-6C	Classification:	Accepted
Names:	116-KE-6C; 1706-KE Waste Accumulation Tank; 1706-KE Waste Treatment System	Reclassification:	Interim Closed Out (8/4/2010)
Type:	Storage Tank	Start Date:	1/1/1984
Status:	Inactive	End Date:	
Description:	The site consisted of a 550 gallon waste accumulating tank, which was part of the 1706-KE Waste Treatment System installed in 1984.		
Location:	The tank is located northwest of the 1706-KER building.		
Release Description:	On August 18, 1986, a 30 gallon epoxy vessel overheated. The event resulted in the forcible ejection of some of the resin material from the treatment unit. The epoxy overheating caused the emission of thick white vapors but no fire was observed. The ejected waste material was slightly radioactive. The material was cleaned up and packaged for low-level burial by operations personnel. No radioactivity was found outside the radiation zone. The area was cleaned to background radiation levels. (see Event Investigation Report D/T-86-01)		

Process Description: In 1984, a new system of radioactive waste treatment was initiated that consisted of an evaporation and epoxy encapsulation unit. During the original operation, a small stream of waste water was fed into a drum of hot epoxy at a constant rate. The water flashed to steam and traveled to a condenser where it was cooled and collected in the condensate collection tank. The liquid was sampled to determine if the radionuclide content was below releasable limits. Solids were collected in the epoxy. When a sufficient volume of epoxy (containing solid waste) was accumulated, a catalyst was added to harden the epoxy in the drum. The drum of solid epoxy was sealed and transported to a radioactive burial ground. This process ended in August 1986 when an ion exchange column was attached the accumulation tank. This process circulated the radioactive waste water through the ion exchange column until the radionuclide content was below the releasable limit.

Related Sites/ Structures: Other WTS sites were 116-KE-6A, 6B, 6D.

Waste Type: Equipment

Waste Description: The unit was used to treat radioactive wastes generated from sample analysis and test activities conducted in the laboratories of the 1706-KE Building. The system stopped operating in 1987. All of the waste was removed in 1994.

Closure Info: 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D were addressed as a group. The information below documents information for the group of sites.

Interim remedial actions for 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D waste sites, which collectively comprised the 1706-KE Waste Treatment System (WTS), have been successfully completed to mitigate hazardous chemical and radioactive releases to the environment. The interim remedial action Remaining Sites Verification Package (RSVP) (DOE/RL-2010-42) documents the remedial actions conducted under the EPA/ROD/R10-99/039, Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (referred to as the 100 Area Remaining Sites ROD). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039) as documented in EPA, 2004, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 1706-KE Waste Treatment System (WTS), was a Treatment, Storage and Disposal (TSD) unit located in the 1706-KER Building under the Resource Conservation and Recovery Act of 1976 (RCRA) and subject to RCRA corrective action requirements. As documented in the 100 Area Remaining Sites ROD, the RCRA corrective actions and CERCLA remedial actions were coordinated such that the result of the remedial action satisfied both sets of requirements. RCRA closure of the WTS was completed in 2009 in accordance with the approved closure plan, Hanford Facility Dangerous Waste Closure/ Post closure Plan for the 1706-KE Waste Treatment System, DOE/RL-2009-29 (RCRA TSD closure plan). The DOE/RL-2010-42 RSVP addresses the completion of the CERCLA remedial action.

Remedial action activities were accomplished from June 15 through July 9, 2009. The waste materials from sites 116-KE-6A, 116-KE-6B, and 116-KE-6C were loaded on shipping containers July 1, 2009, and shipped to the Environmental Restoration Disposal Facility (ERDF) on July 9, 2009. The 116-KE-6D site was disposed in October 1996 at the low-level burial grounds.

After completion of the TSD closure activities, Ecology provided an approval letter for the RCRA TSD

closure plan. Upon completion of remediation, a Professional Engineer's Certification for the RCRA Closure of the 1706-KE WTS was issued. The engineer's certification and Ecology's acceptance letter were provided in Appendices A and B of the RSVP, respectively.

Verification sampling was not required under the scope of closure for the waste sites, since the floor and walls in the 1706-KER Building were not included as part of either the RCRA TSD closure certification or under this CERCLA remedial action.

The cost to remove the above-grade portion of the 1706-KER Facility, which included removal and disposal of the waste sites was approximately \$1.60 million. The effort to remove the waste sites was estimated at 10 percent of the project cost, which yielded an estimated cost of \$160,000 for remediation of the four waste sites.

Code:	116-KE-6D	Classification:	Accepted
Names:	116-KE-6D; 1706-KE Ion Exchange Column; 1706-KE Waste Treatment System	Reclassification:	Interim Closed Out (8/4/2010)
Type:	Process Unit/Plant	Start Date:	1/1/1984
Status:	Inactive	End Date:	
Description:	The site consisted of a 5 cubic foot mixed-bed resin ion exchange column, which was part of the 1706-KE Waste Treatment System installed in 1984.		
Location:	The ion exchange column is located northwest of the 1706-KER building.		
Release Description:	On August 18, 1986, a 30 gallon epoxy vessel overheated. The event resulted in the forcible ejection of some of the resin material from the treatment unit. The epoxy overheating caused the emission of thick white vapors but no fire was observed. The ejected waste material was slightly radioactive. The material was cleaned up and packaged for low-level burial by operations personnel. No radioactivity was found outside the radiation zone. The area was cleaned to background radiation levels. (see Event Investigation Report D/T-86-01)		
Process Description:	In 1984, a new system of radioactive waste treatment was initiated that consisted of an evaporation and epoxy encapsulation unit. During the original operation, a small stream of waste water was fed into a drum of hot epoxy at a constant rate. The water flashed to steam and traveled to a condenser where it was cooled and collected in the condensate collection tank. The liquid was sampled to determine if the radionuclide content was below releasable limits. Solids were collected in the epoxy. When a sufficient volume of epoxy (containing solid waste) was accumulated, a catalyst was added to harden the epoxy in the drum. The drum of solid epoxy was sealed and transported to a radioactive burial ground. This process ended in August 1986 when an ion exchange column was attached the accumulation tank. This process circulated the radioactive waste water through the ion exchange column until the radionuclide content was below the releasable limit.		
Related Sites/ Structures:	Other WTS sites were 116-KE-6A, 6B, 6C.		
Waste Type:	Equipment		
Waste Description:	The unit was used to treat radioactive wastes generated from sample analysis and test activities conducted in the laboratories of the 1706-KE Building. The system stopped operating in 1987. All of the waste was removed in 1994.		
Closure Info:	116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D were addressed as a group. The		

information below documents information for the group of sites.

Interim remedial actions for 116-KE-6A, 116-KE-6B, 116-KE-6C and 116-KE-6D waste sites, which collectively comprised the 1706-KE Waste Treatment System (WTS), have been successfully completed to mitigate hazardous chemical and radioactive releases to the environment. The interim remedial action Remaining Sites Verification Package (RSVP) (DOE/RL-2010-42) documents the remedial actions conducted under the EPA/ROD/R10-99/039, Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (referred to as the 100 Area Remaining Sites ROD). The subject waste sites were incorporated into the 100 Area Remaining Sites ROD (EPA/ROD/R10-99/039) as documented in EPA, 2004, Explanation of Significant Differences for the 100 Area Remaining Sites Interim Remedial Action Record of Decision (ESD).

The 1706-KE Waste Treatment System (WTS), was a Treatment, Storage and Disposal (TSD) unit located in the 1706-KER Building under the Resource Conservation and Recovery Act of 1976 (RCRA) and subject to RCRA corrective action requirements. As documented in the 100 Area Remaining Sites ROD, the RCRA corrective actions and CERCLA remedial actions were coordinated such that the result of the remedial action satisfied both sets of requirements. RCRA closure of the WTS was completed in 2009 in accordance with the approved closure plan, Hanford Facility Dangerous Waste Closure/ Post closure Plan for the 1706-KE Waste Treatment System, DOE/RL-2009-29 (RCRA TSD closure plan). The DOE/RL-2010-42 RSVP addresses the completion of the CERCLA remedial action.

Remedial action activities were accomplished from June 15 through July 9, 2009. The waste materials from sites 116-KE-6A, 116-KE-6B, and 116-KE-6C were loaded on shipping containers July 1, 2009, and shipped to the Environmental Restoration Disposal Facility (ERDF) on July 9, 2009. The 116-KE-6D site was disposed in October 1996 at the low-level burial grounds.

After completion of the TSD closure activities, Ecology provided an approval letter for the RCRA TSD closure plan. Upon completion of remediation, a Professional Engineer's Certification for the RCRA Closure of the 1706-KE WTS was issued. The engineer's certification and Ecology's acceptance letter were provided in Appendices A and B of the RSVP, respectively.

Verification sampling was not required under the scope of closure for the waste sites, since the floor and walls in the 1706-KER Building were not included as part of either the RCRA TSD closure certification or under this CERCLA remedial action.

The cost to remove the above-grade portion of the 1706-KER Facility, which included removal and disposal of the waste sites was approximately \$1.60 million. The effort to remove the waste sites was estimated at 10 percent of the project cost, which yielded an estimated cost of \$160,000 for remediation of the four waste sites.

Code:	118-KE-2	Classification:	Accepted
Names:	118-KE-2; Rod Cave; 105-KE Horizontal Control Rod Storage Cave	Reclassification:	Interim Closed Out (6/14/2011)
Type:	Storage	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971

Description: The site was constructed by pouring a concrete slab 18 meters (60 feet) long by 2.4 meters (8 feet) wide. Two sections of 61-centimeter (24-inch) pipe were cut in half lengthwise, laid open side down on the slab. Vertical concrete walls and steel doors were added to the ends of the pipe sections, with the walls forming a wing at each end. The pipe sections were then covered with 1.8 meters (6 feet) of clean fill material, forming a 12-meter (40-foot) long tunnel (Hale 1957a). The berm width after the fill material was added is approximately 8 meters (25 feet). The entire structure is above grade.

Location: The site is located northeast of the 105-KE Building.

Process Description: The unit was used for temporary storage of radioactive rod tips associated with the 105-KE Reactor for radioactive decay pending subsequent disposal.

Related Sites/ Structures: 105-KE Reactor

Waste Type: Equipment

Waste Description: This site contains trace amounts of radionuclides. The radiation level at the entrance to the cave with the door open is 1 millirad/hour. The unit was used for temporary storage of radioactive rod tips for radioactive decay pending subsequent disposal.

Closure Info: The entire 118-KE-2 Waste Site structure, including the concrete slab, was removed in September 2009 to facilitate heavy equipment access to the 105-KE Building and associated Fuel Storage Basin to support ongoing remedial activities. The interim action consisted of successful removal and disposal of the entire 118-KE-2 Waste Site. Materials from the demolition of the structure and shipped to the ERDF for disposal.

Code: 120-KE-1 **Classification:** Accepted

Names: 120-KE-1; 183-KE Acid Neutralization Pit; 183-KE Filter Waste Facility Dry Well; 183-KE Filter Water Facility; 100-K-26; 100-KE-1 **Reclassification:** None

Type: Sump **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The site was an underground concrete structure used to neutralize acid waste prior to disposal. The "pit" was a concrete box lined with acid proof bricks. The structure was divided into three sections by dividing brick weirs. Effluent released into the system was held up in a small chamber by the first weir. Effluent overflowed the first weir into a second small chamber and then overflowed the second weir into the third larger chamber. A 10.2-centimeter (4-inch) vitrified tile drain was located in the bottom of the third large chamber and is believed to discharge to the process sewer (see Site Comment). The top of the pit was level with the surface and had a 7.6-centimeter (3-inch) plank cover that was posted with "Confined Space" and "Caution, Acid" warning signs. In August 2000, the area around the acid tanks was stabilized with gravel. The french drain and sump were backfilled. They are no longer visible. They are not marked or posted.

Location: The site is located near the southeast corner of the 183-KE Head House, south of the 120-KE-5 Sulfuric Acid Tank and east of the 100-K-23 Sodium Silicate Tank Site.

Process Description: The method of acid neutralization is not known. When two other acid neutralization pits (100-K-34 and 100-K-35) that were associated with the elevated day use tanks at 183-KE and 183-KW were opened, crushed limestone was visible. Limestone may also be at the 120-KE-1 site beneath the discarded sludge.

Related Sites/ The site was associated with the 183-KE Head House and the 183-KE Sulfuric Acid Tanks.

Structures:**Waste Type:** Chemicals**Waste Description:** The site received sulfuric acid for neutralization and acid sludge waste that was removed from the sulfuric acid storage tanks in the late 1960's and early 1970's.

Code: 120-KE-2 **Classification:** Accepted**Names:** 120-KE-2; 183 KE Filter Water Facility; 183-KE Filter Waste Facility French Drain; 100-KE-2 **Reclassification:** None**Type:** French Drain **Start Date:** 1/1/1955**Status:** Inactive **End Date:** 1/1/1971**Description:** The unit was an open-bottomed french drain with a depth of 0.9 meters (3 feet) and a diameter of 0.9 meters (3 feet). It had been located inside four, yellow posts with chain. In August 2000, the area around the acid tanks was stabilized with gravel. The french drain and sump were backfilled. They are no longer visible. They are not marked or posted.**Location:** The site is located 37 meters (121.4 feet) east of the southeast corner of 183-1KE and adjacent to the 120-KE-4 Sulfuric Acid Tanks.**Process Description:** Hanford drawing H-1-25264 describes this drain as being a 0.9-meter (3-foot) diameter, 1.8-meter (6-foot) long vitrified clay pipe placed vertically in an excavation that was about 4 meters (13 feet) across and 3.4 meters (11 feet) deep. The bottom 0.3 meters (1 foot) of the pipe was filled with course rock, as was the bottom 1.5 to 1.8 meters (5 to 6 feet) of the excavation.**Waste Type:** Chemicals**Waste Description:** The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.**Description:**

Code: 120-KE-3 **Classification:** Accepted**Names:** 120-KE-3; 183-KE Filter Water Facility Trench; 100-KE-3 **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1955**Status:** Inactive **End Date:** 1/1/1971**Description:** The unit was a trench lined with sand. The trench received a sludge-water slurry.**Location:** The site was located east of 183-1KE, north of the 120-KE-4 and 120-KE-5 sulfuric acid tanks, on the north side of the railroad tracks.**Waste Type:** Chemicals**Waste Description:** The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.**Description:**

Code: 120-KE-4 **Classification:** Accepted**Names:** 120-KE-4; 183-KE1 Sulfuric Acid Storage Tank **Reclassification:** None**Type:** Storage Tank **Start Date:** 1/1/1955**Status:** Inactive **End Date:** 1/1/1971**Description:** The unit is located above ground and has a storage capacity of 38,267 liters (10,109 gallons).**Location:** The unit is located in the southeast corner of the 183-KE Headhouse.

Location:

Release Description: The supply pipe from this unit to the point of use inside the 183-KE Building developed a slow gradual leak. Before the leak was detected, an unknown quantity of sulfuric acid leaked into the ground at the northeast corner of 183-KE Building.

Process Description: The sulfuric acid was used to activate sodium silicate. During seasons of high turbidity, activated silica solution was fed into the raw water to aid in coagulation.

Related Sites/ Structures: The site is associated with the 183-KE Headhouse, 120-KE-1, 120-KE-2 and 120-KE-5.

Waste Type: Chemicals
Waste Description: The unit was used for storage of sulfuric acid product.

Code: 120-KE-5	Classification: Accepted
Names: 120-KE-5; 183-KE2 Sulfuric Acid Storage Tank	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1971

Description: The site is the westernmost of the two original sulfuric acid tanks at the 183-KE Headhouse. The tank is a horizontal, cylindrical shaped, steel tank supported above ground on concrete saddles. The tank has a capacity of 38,267 liters (10,109 gallons).

Location: The tank is located near the southeast corner of the 183-KE Headhouse, east of the eastern sodium silicate storage tank site (100-K-23), and west of the second sulfuric acid storage tank (120-KE-4).

Process Description: The sulfuric acid was used to activate sodium silicate. During seasons of high turbidity, activated silica solution was fed into the raw water as an aid in coagulation.

Related Sites/ Structures: The site is associated with the 183-KE Headhouse.

Code: 120-KE-6	Classification: Accepted
Names: 120-KE-6; 183-KE Sodium Dichromate Tank	Reclassification: None
Type: Foundation	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1971

Description: The site is a foundation where a sodium dichromate storage tank was placed. The tank has been removed and all that remains is the concrete pad, contaminated soil, and any remaining piping. The vertical steel storage tank was 6.1 meters (20 feet) high, 5.8 meters (19 feet) in diameter, and had a 159,000-liter (42,000-gallon) storage capacity.

Location: The site is located on the east side of the 183-KE Building. The center of the pad is 6.1 meters (20 feet) from the building's east wall.

Release Description: There are no documented releases. However, there is evidence of residual sodium dichromate in the soil that has accumulated from many years of unloading and handling.

Process Description: Sodium dichromate was added to the process water as a corrosion inhibitor. It was metered and

Description:

proportioned by a single step operation in the head house, and diluted and injected into the process water in the process water pump house. The proportioning pumps took their suction directly from the storage tank. Near the process water pump house, the pumps discharged through a back pressure valve into a service water stream which diluted the dichromate on its way to injection into the process water. The injection point was located on the discharge of the low lift pump. Dichromate injection was determined by the process water flow. The chemical storage facilities at the 183-KE Building were sized to provide sufficient chemicals for two to three months continuous operation. Chemicals were delivered to the 183-KE Building by rail. With the exception of chlorine, all chemicals were transferred to their storage tanks by pumping or by pressurizing the tank cars with compressed air.

Related Sites/ The site is associated with the 183-KE Building.

Structures:

Waste Type: Chemicals

Waste Staining from sodium dichromate can be seen in the soil near the concrete pad.

Description:

Code: 120-KE-8 **Classification:** Accepted

Names: 120-KE-8; 165-KE Brine Mixing Tank; 165-KE Brine Pit **Reclassification:** None

Type: Sump **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The unit is a below grade concrete structure the provided brine for the 165-KE Powerhouse. The roof of the structure is approximately 0.3 meters (1 foot) above ground level. The opening into the pit is covered by a wooden cover that is in poor condition. The bottom of the pit has subsided and appears to have leaked or drained to the soils beneath the structure. Just south of the brine pit is a valve pit located within a vertical section of 1.2 meter (4 foot) diameter corrugated galvanized pipe. This valve pit contains residue and apparently was part of the brine operation. The brine pit has inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.7 meters (9 feet) tall. The bottom of each pit is filled with a 12.7 centimeter (7 inch) layer of 1.3 to 2.6 centimeter (1/2 to 1 inch) gravel topped by a 17.8 centimeter (7 inch) layer of 0.3 to 0.6 centimeter (1/8 to 1/4 inch) gravel. The pit has a 1.2 meter (4 foot) by 1.1 meter (3.5 foot) opening for receiving salt.

Location: The site is located near the northwest corner of the 165-KE Powerhouse.

Process The brine was probably used to regenerate the water softeners that treated water prior to steam generation within the 165-KE Powerhouse. Salt was off-loaded from rail cars and placed in the pit. Water was then circulated through the pit, and brine was pumped back to the 165-KE Powerhouse for further use.

Related Sites/ The site is associated with the 165-KE Powerhouse.

Structures:

Waste Type: Chemicals

Waste The unit contains salt brine and residue. Based on sampling performed at the 120-KE-9 and 120-KW-7 brine pits, the brine and residue may be regulated as dangerous per WAC 173-303.

Code: 120-KE-9 **Classification:** Accepted

Names: 120-KE-9; 183-KE Brine Pit; 183-KE Salt **Reclassification:** None

Dissolving Pits and Brine Pump Pit

Type: Sump **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1971

Description: The Salt Dissolving Pits and Brine Pump Pit are part of a single below-grade concrete structure that provided brine for the 183-KE Water Treatment Facility. Four wooden covers and one metal cover were visible at the surface. The wooden covers were in poor condition. In August of 1998 the ceiling structures were demolished and the open chambers were backfilled to grade. The two salt dissolving pits each have inner dimensions of 3.0 meters (10 feet) long by 2.1 meters (7 feet) wide by 2.4 meters (8 feet) deep. A 15-centimeter (6-inch) by 30-centimeter (12-inch) overflow slot that connects the two dissolving pits is located just below the structure's roof. The bottom of each pit was filled with a 13-centimeter (5-inch) layer of 1.3 to 2.6-centimeter (0.5 to 1-inch) gravel topped by a 18-centimeter (7-inch) layer of 0.3 to 0.6-centimeter (1/8 to 1/4-inch) gravel. The dissolving pits each had a 1.8-meter (5.75-foot) by 0.9-meter (3-foot) opening at the top for receiving salt. The pits also had a smaller 46 by 46-centimeter (18 by 18-inch) opening that was probably used for checking the water level within each pit. The Brine Pump Pit is located adjacent to the two Salt Dissolving Pits. The pit is 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.4 meters (8 feet) deep. It holds two pumps and the associated piping for the brine system. A 46 by 46 by 46-centimeter (18 by 18 by 18-inch) sump is located in the corner of the pit. The pump pit is accessible from the surface through a 0.6 by 0.6-meter (2 by 2-foot) opening.

Location: The site is located approximately 37 meters (120 feet) east of the east end of the 183-KE Water Filter Plant and just north of the railroad spur that serviced 183-KE.

Process Description: The salt brine was used to regenerate water softeners.

Related Sites/ Structures: The brine pit is associated with the 183-KE Water Filter Plant.

Waste Type: Chemicals
Waste Description: The unit contains salt brine and residue.

Code: 126-KE-2 **Classification:** Accepted

Names: 126-KE-2; 183-KE Liquid Alum Storage Tank #2 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The site is an above ground vertical stainless steel storage tank mounted on a concrete base. The tank was part of a system called, The Liquid Alum System, that supplied liquid alum for water treatment. The liquid was supplied either by rail car or tank truck, as both connections are shown on the Liquid Alum System diagram in HW-24800-103. The piping and instrument identification diagram, H-1-16552, shows the pipelines, valves, and instrumentation related to the tank. During the winter, the liquid alum was pumped through heat exchangers for purpose of heating and agitating the chemicals. Use of this tank for the storage of alum was discontinued in the Fall of 1996. The tank is now inactive, but the residual alum in the tank has not been cleaned out.

Location: The site is the western-most of two alum storage tanks located approximately 15.2 meters (50 feet) from the southwest corner of the 183-KE Head House and 10.7 meters (35 feet) south of the 183-KE chlorine vault.

Process Description: Alum was used as a coagulant in water treatment. During the season of water high turbidity

Description: activated silica was added as an aid in coagulation. Alum was fed from the storage tank and proportioned directly into the raw water line. The proportioning pump was paced by the flow of raw water in its 91centimeters (36 inches) raw water pipeline and fed at 30 parts per million (ppm) at a maximum flow rate of 121,000 liters per minute (32,000 gallons per minute).

Related Sites/ Structures: The tank was associated with the 183-KE Head House. The head house was the water quality center for the entire water treatment plant. In it were the facilities for metering raw water, for chemical injection into raw, filtered, and process water, and for effluent and influent control throughout the filter plant.

Waste Type: Chemicals

Waste Description: The unit was used for storage of liquid alum (aluminum sulfate). Material Safety Data Sheet (MSDS) #040407 lists aluminum sulfate as an EPA hazardous substance. The tank has not been cleaned out.

Code: 130-KE-1

Classification: Accepted

Names: 130-KE-1; 105-KE Emergency Diesel Fuel Tank; 105-KE Emergency Diesel Oil Storage Tank

Reclassification: Interim Closed Out (6/23/2011)

Type: Storage Tank

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1971

Description: The 130-KE-1 waste sites consisted of two 7,600-liter (2,000 gallon) capacity storage tanks, 130-KE-1A and 130-KE-1B. Once the storage tanks were removed from the site, the site was backfilled with native soil to grade and covered with gravel.

Location: The site is located on the east side of 105-KE, adjacent to the reactor exhaust stack.

Process Description: The 130-KE-1 Waste Site Tank System was used for storing diesel fuel from 1955 to 1971 to support use of the emergency fans housed in the basement of the 105-KE Reactor. The fans were in place as a backup ventilation system for the reactor.

Related Sites/ Structures: 105-KE Reactor

Waste Type: Oil

Waste Description: The unit was used for storage of diesel fuel (product).

Closure Info: The 130-KE-1 Waste Site Tank System (including tanks 130-KE-1A and 130-KE-1B) was permanently closed by removal of the below-grade tanks and accessible piping on October 5, 1992. The remedial action for the 130-KE-1 Waste Site included removal and disposal of the tanks and sampling and analysis of the underlying soils for total petroleum hydrocarbons (TPH).

The 130-KE-1 Waste Site was removed using standard industrial equipment. The two tanks were empty upon removal. No visible staining was observed and no organic vapors were detected during monitoring of the excavation and 130-KE-1 Waste Site Tank System removal. Soils samples from the excavated area and the overburden were collected and analyzed in accordance with Ecology Publication 90-52. The 130-KE-1 Waste Site Tank System was received by Northwest EnviroField Services, Inc. on February 5, 1993, for disposal as scrap steel.

A complete site assessment was performed per WAC 173-360-390 immediately following the 130-KE-1 Waste Site Tank System removal. Samples were collected from the excavated area and the overburden. After the 130-KE-1 Waste Site Tank System was removed, the area was

sampled and final data received, the site was backfilled to grade.

Code: 130-KE-2 **Classification:** Accepted

Names: 130-KE-2; 166-KE Oil Storage Tank; Oil Bunker **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The bunker is an underground, reinforced concrete structure. It has two compartments, each having a storage capacity of 3,033,629 liters (801,400 gallons).

Location: The fuel oil storage tanks are located southwest of 105-KE. They are west of the 165-KE Boilerhouse. The metal oil storage building is located on southeast corner of the site.

Process Description: The tank was used for storage of fuel oil (product) for the 165-KW Boilers. Fuel was delivered to the bunkers from rail cars and filled through 15 centimeter (6 inch) diameter gravity lines. Two day tanks are located on the south side of each bunker. Each Day Tank had a 186,621 liter (49,300 gallon) capacity.

Related Sites/ Structures: The storage tanks are associated with the 165-KE boiler house.

Waste Type: Oil

Waste Description: The unit was used for storage of oil (product) for the 165-KE Boilers.

Code: 132-KE-1 **Classification:** Accepted

Names: 132-KE-1; 116-KE Reactor Exhaust Stack **Reclassification:** None

Type: Stack **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The original height of this unit was 91.5 meters (300 feet). The current height is 53.4 meters (175 feet).

Location: The unit is located on the northeast side of the 105-KE Reactor Building.

Related Sites/ Structures: Following completion of the confinement project in 1960, the air was diverted via underground reinforced concrete ducts to the 117-KE Filter Building. After flowing through the filters, the air went through below-grade concrete ducts and into the exhaust stack.

Waste Type: Demolition and Inert Waste

Waste Description: Discharged ventilated air from the 105-KE Building flowed through concrete ducts directly out of the stack.

Code: 116-KW-1 **Classification:** Accepted

Names: 116-KW-1; 115-KW Condensate Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The crib and pipeline have been removed and the site backfilled with clean soil to the average adjacent grade elevation.

Location: The crib was located north of 115-KW and east of 118-KW-1 (105-KW Reactor Building).

Process Description: Before the 2004 remediation the bottom of the crib was 1.8 meters (6 feet) in diameter and was 7.8 meters (25.5 feet) below the ground surface. The top of the crib measures 12.2 meters (40 feet) in diameter. The bottom of the crib was filled with 3 meters (10 feet) of course gravel, then backfilled with dirt to grade. This site included the feed pipeline from the 115-KW Building.

Related Sites/Structures: The distribution system was composed of a 10.2 centimeter (4 inch) pipe that led into an 20.3 centimeter (8 inch) corrugated galvanized steel perforated pipe that was 3.2 meters (10.5 feet) long, with two 2-meter (6.5 foot) sections branching off at 45 degrees. The site received effluent from the 105-KW Reactor Buildings.

Waste Type: Process Effluent

Waste Description: The site received condensate and other wastewater from reactor gas purification systems.

Description: Drilling of the crib in the mid-1970's revealed high concentrations of tritium and carbon-14. The radionuclide inventory in curies decayed through April 1, 1986, includes tritium (81.9 curies), carbon-14 (110 curies), and small amounts of other elements.

Code: 116-KW-2

Classification: Accepted

Names: 116-KW-2; 105-KW Basin Reverse Well; 105-KW Fuel Storage Basin Sub-Basin Drainage Disposal System Crib; 105-KW Storage Basin French Drain

Reclassification: None

Type: Injection/Reverse Well

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1970

Description: The site is part of the sub-basin drainage disposal system for the 105-KW Fuel Storage Basin (100-K-43). The site includes the following components: a feed pipe, crib structure, dry well, and test hole. The area of the site is cobble covered and posted with "Underground Radioactive Material" warning signs. A mound of soil, installed in 1977 or 1978, is located nearby and covers some of the ancillary units related to this site. The test hole's 10.2-centimeter (4-inch) diameter steel casing that originally extended above finish grade level is no longer visible. A 20.3-centimeter (8-inch) corrugated galvanized steel feed pipe 8.8 meters (29 feet) below grade comes from the fuel storage basin. The feed pipe enters the crib structure at elevation 133 meters (435.5 feet). The crib structure, in plan view, is trapezoid shaped with the top at grade level (Elevation: 142 meters [464.5 feet]) and approximately 18.3 meters (60 feet) in width (excavation and backfill width) and the bottom (Elevation: 425.5 feet) 3.05 meters (10 feet) in width. The bottom 3.7 meters (12 feet) of the crib is filled with coarse gravel. The distribution system (drain field) within the crib is a central feeder with side feeders ("fishbone") located 8.8 meters (29 feet) below grade. All feeder piping is composed of 20.3-centimeter (8-inch) corrugated and perforated galvanized steel pipe. The main feeder pipe within the drain field is 6.1 meters (20 feet) long. The side feeders coming from each side of the central feeder are 2.7 meters, 3.2 meters, 2.6 meters, and 1.5 meters (9.0 feet, 10.5 feet, 8.5 feet, and 5.0 feet) in length, 1.75 meters, 1.7 meters, and 1.3 meters (5.75 feet, 5.5 feet, 4.25 feet) apart, and set at an angle of 30 degrees (Drawing #H-1-23207 is labeled 30 degrees, however, it appears on the drawing to be closer to 60 degrees.) The drain field is 6.1 meters (20 feet) in diameter. A dry well (injection well) was installed at the midpoint (Washington State Plane Coordinates: Easting 568589.544, Northing 146473.534) of the drain field main feeder pipe. The dry well is constructed of 20.3-centimeter (8-inch) schedule 40 steel well casing. The dry well casing runs from elevation 435.5 feet (8.8 meters [29 feet] below grade) downward to a point 3.05 meters (10 feet) below the mean water table. The bottom 6.1 meters (20 feet) of the well casing is perforated. The 10.2-centimeter (4-inch) steel test hole extended from the surface to the head end of the drain field. The test hole piping was the only part of site's structure that was above grade. The construction of the "D" catch tank modification would have covered the test hole.

Location: The site is located north of the 105-KW Reactor Building (118-KW-1) about 23 meters (75 feet).

Process Description: The site operated from 1955 to 1970 as an overflow crib for sub-basin drainage from the 105-KW Fuel Storage Basin (100-K-43).

Waste Type: Process Effluent

Waste Description: The waste is contaminated structures and soil from the fuel storage basin sub-basin drainage system.

Code: 116-KW-4

Classification: Accepted

Names: 116-KW-4; 150-KW Heat Recovery Station

Reclassification: Interim Closed Out (9/23/2005)

Type: Process Unit/Plant

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1970

Description: The site has been remediated and interim closed out. The site consisted of heat exchangers, pumps, and associated piping on a concrete pad. Disconnected piping remained at the site, the pipe ends were covered with plywood.

Location: The site was located south of 116-KW-3 (107-KW Retention Basins) and north of the 118-KW-1 (105-KW Reactor Building).

Process Description: The site was used to transfer heat from the 105-KW Reactor cooling water effluent. The heat recovery stations used an ethylene glycol solution as the heat exchanger medium. The system is no longer intact.

Waste Type: Equipment

Waste Description: Trace amounts of radioactive contamination remained on the piping. The heat exchange medium consisted of a 34% ethylene glycol-water solution.

Closure Info: 100-K-55:1, 100-K-56:1, 116-KW-4 and 116-KE-5 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities involving excavation and staging of overburden material and removal of contaminated piping, debris, and soil began on December 9, 2002.

The Cleanup Verification Package for the 100-K-55:1 and 100-K-56:1 Pipelines and the 116-KW-4 and 116-KE-5 Heat Recovery Stations, (CVP-2005-00006), documented that the 100-K-55:1 and 100-K-56:1 pipelines were remediated in accordance with the Amendment to the Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington (ROD) (EPA 1997). Remedial action objectives (RAOs) and remedial action goals (RAGs) for these sites were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE-RL-96-17, Rev. 5). The 116-KW-4 and 116-KE-5 sites were also remediated as part of remedial efforts for the pipelines.

Final cleanup verification sampling was conducted from January 26, 2005, to June 23, 2005 following variance analysis. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency (EPA) analytical methods as required per the 100 Area Remedial Action Sampling and Analysis Plan (SAP) (DOE-RL 96-22, Rev. 3) for the 100-K-55 and 100-K-56 pipelines. Sample numbers were too numerous to report, sample numbers and results may be found in Appendix A of CVP-2005-00006. Each verification sample was composed of a composite sample formed by

combining soil collected at the required number of randomly selected locations within each sampling area (excluding the quality assurance/quality control samples).

The CVP-2005-00006 demonstrated that remedial actions at the 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites have achieved the RAOs and corresponding RAGs established in the RDR/RAWP. The contaminated materials from these sites have been excavated and disposed at the ERDF. The remaining soils at the sites have been sampled, analyzed, and modeled, and the results do not preclude any future uses (as bounded by the rural-residential scenario), allow unrestricted use of shallow zone soils, and pose no threat to groundwater or the Columbia River.

The 100-K-55:1, 100-K-56:1, 116-KW-4, and 116-KE-5 sites were verified to be remediated in accordance with the ROD and may be backfilled

Code:	118-KW-2	Classification:	Accepted
Names:	118-KW-2; 105-KW Horizontal Control Rod Storage Cave	Reclassification:	Interim Closed Out (6/14/2011)
Type:	Storage	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The cave was constructed by pouring a concrete slab 18.3 meters (60 feet) long by 2.4 meters (8 feet) wide. Two sections of 0.61-meter (24-inch) pipe were cut in half lengthwise and laid open side down, on the slab. Vertical concrete walls and steel doors were added to the ends of the pipe sections, with the walls forming a wing at each end. The pipe sections were then covered with 1.8 meters (6 feet) of clean fill material, forming a 12.2-meter (40-foot) long tunnel. The berm width after the fill material was added is about 7.6 meters (25 feet). The entire structure is above grade.		
Location:	The site is located northeast of the 105-KW Building.		
Process Description:	The unit was used for temporary storage of radioactive rod tips associated with the 105-KW Reactor for radioactive decay pending subsequent disposal.		
Related Sites/ Structures:	105-KW Reactor		
Waste Type:	Equipment		
Waste Description:	The unit was used for temporary storage of irradiated and radioactively contaminated horizontal control rods containing unknown quantities of radionuclides. The tunnel contains four rod tips and other rod removal components. The radiation reading at the entrance to the cave with the door open is 50 millirad/hour.		
Closure Info:	The entire 118-KW-2 Waste Site structure, including the concrete slab, was removed in November 2010 to facilitate future heavy equipment access to the 105-KW Building and associated Fuel Storage Basin to support remedial activities. The interim action consisted of successful removal and disposal of the entire 118-KW-2 Waste Site including rod tips stored within the cave and minor soil contamination detected after demolition.		

Code:	120-KW-1	Classification:	Accepted
Names:	120-KW-1; 183-KW Acid Neutralization Pit; 183-KW Filter Water Facility Dry Well; 100-K-17; 100-KW-1	Reclassification:	Interim Closed Out (10/28/2011)
Type:	Sump	Start Date:	1/1/1955

Status: Inactive**End Date:** 1/1/1970

Description: The site was an underground concrete structure used to neutralize acid waste prior to disposal. The "pit" was a concrete box with approximate dimensions of 2.5 m (8.5 ft) x 2.0 m (6.3 ft) x 1.5 m (5 ft), and was lined on the sides with acid proof bricks. The structure is divided into three sections by dividing brick weirs. Effluent released into the system was held up in a small chamber by the first weir. Effluent overflowed the first weir into a second small chamber and then overflowed the second weir into the third larger chamber. A 10.2-centimeter (4-inch) vitrified tile drain was located in the bottom of the third chamber and is believed to discharge to the process sewer (see Site Comment). The top of the pit was level with the surface and had a 7.6-centimeter (3-inch) plank cover that is posted with "Confined Space" and "Caution, Acid" warning signs. In August 2000, the area around the acid tanks was stabilized with gravel. The french drain and sump were backfilled. They are no longer visible. They are not marked or posted.

Location: The site is located near the southeast corner of the 183.1-KW Headhouse, south of the 120-KW-3 Sulfuric Acid Tank and east of the 100-K-21 Sodium Silicate Tank Site.

Process Description: The method of acid neutralization is not known. When two other acid neutralization pits (100-K-34 and 100-K-35) that were associated with the elevated day use tanks at 183-KE and 183-KW were opened, crushed limestone was visible. Limestone may also be at the 120-KW-1 site beneath the discarded sludge. From 1968 to 1971 commercial grade sulfuric acid was stored in the 183-KE/KW acid tanks. A heavy precipitate would accumulate in the bottom of the tanks. The tank sludge was periodically flushed from the tanks to adjacent drywells. When the K Reactors were shut down (1970-1971), the acid was removed from the tanks. Approximately 4950 kilograms (11,000 pounds) of sludge was washed out of the tanks into adjacent drainage trenches. The sludge was packaged into 55 gallon drums and sold to an off site vendor. Small amounts of sludge remained in the 183-KE/KW drywells. The drywell sludge was sampled in July 1985. The drywell at 183-KW exceeded the Washington State Department of Ecology Dangerous Waste Regulations limit for mercury. The dangerous waste limit for mercury was 0.2 parts per million. The sample collected in 1985 contained 0.387 parts per million of mercury.

Related Sites/ Structures: The site was associated with the 183-KW Head House and the 183-KW Sulfuric Acid Tanks.

Waste Type: Chemicals

Waste Description: The site received sulfuric acid for neutralization and acid sludge waste from the sulfuric acid storage tanks. The drywell sludge was sampled in 1985 and was analyzed for arsenic, barium, cadmium, Chromium, lead, mercury, silver and selenium. The sample taken from the 183-KW drywell contained elevated levels of mercury. The Washington State dangerous waste limit for mercury is 0.2 parts per million. The sample contained 0.387 parts per million of mercury. The other metals were below dangerous waste limitations.

Closure Info: 120-KW-1, 120-KW-2, 120-KW-3, and 120-KW-4 were addressed as a group. The information below documents information for the group of sites.

Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 were remediated to remove the remaining structures and associated contaminated soil between May 2010 and June 2011. The original remediation activity for was anticipated to end once excavation to a depth of 4.6 m (15 ft) was achieved. Excavation to support remediation of the yellow-colored contaminated soil, however, continued due to the ongoing detection of mercury contamination levels above the RAGs in the RDR/RAWP (DOE/RL-96-17). The final depth of the remediation was 14.2 m (46.6 ft), which was located within the footprint of 120-KW-2. To support the deeper excavation, layback soil was accumulated in stockpiles (#7 and #9).

Stockpile #7 was started on April 19, 2011. No field quality control samples were collected; however the samples were analyzed for metals, hexavalent chromium and anions.

Stockpile #9 was started on May 17, 2011. No field quality control samples were collected however the samples were analyzed for metals, hexavalent chromium and anions.

Remediation south of the sedimentation basin (183.2-KW) at 100-KW was conducted as an area-wide remediation (100-K Area AA) to examine the soil underneath several co-located waste sites. Based on proximity and process, the remediation area was divided into 4 zones. The four waste sites included in this report comprise Zone 3.

Code: 120-KW-2	Classification: Accepted
Names: 120-KW-2; 183-KW Filter Water Facility French Drain; 100-KW-2	Reclassification: Interim Closed Out (10/28/2011)
Type: French Drain	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1970

Description: This unit was an open-bottomed french drain with a depth of 0.9 meters (3 feet) and a diameter of 0.9 meters (3 feet). In August 2000, the area around the acid tanks was stabilized with gravel. The french drain and sump were backfilled. They are no longer visible. They are not marked or posted.

Location: The site is located 37 meters (121.4 feet) east of the southeast corner of 183.1-KW Headhouse.

Process Description: The drain was constructed in an excavation that was about 4.0 meters (13 feet) across and 3.4 meters (11 feet) deep. The bottom 1.5 to 1.8 meters (5 to 6 feet) of the excavation was filled with course rock. A 0.9-meter (3-foot) diameter, 1.8-meter (6-foot) long vitrified clay pipe was placed vertically over the rock fill and the excavation was backfilled to grade. The bottom 0.3 meters (1 foot) of the pipe was filled with course rock.

Waste Type: Chemicals

Waste Description: The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.

Closure Info: 120-KW-1, 120-KW-2, 120-KW-3, and 120-KW-4 were addressed as a group. The information below documents information for the group of sites.

Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 were remediated to remove the remaining structures and associated contaminated soil between May 2010 and June 2011. The original remediation activity for was anticipated to end once excavation to a depth of 4.6 m (15 ft) was achieved. Excavation to support remediation of the yellow-colored contaminated soil, however, continued due to the ongoing detection of mercury contamination levels above the RAGs in the RDR/RAWP (DOE/RL-96-17). The final depth of the remediation was 14.2 m (46.6 ft), which was located within the footprint of 120-KW-2. To support the deeper excavation, layback soil was accumulated in stockpiles (#7 and #9).

Stockpile #7 was started on April 19, 2011. No field quality control samples were collected; however the samples were analyzed for metals, hexavalent chromium and anions.

Stockpile #9 was started on May 17, 2011. No field quality control samples were collected however the samples were analyzed for metals, hexavalent chromium and anions.

Remediation south of the sedimentation basin (183.2-KW) at 100-KW was conducted as an area-wide remediation (100-K Area AA) to examine the soil underneath several co-located

waste sites. Based on proximity and process, the remediation area was divided into 4 zones. The four waste sites included in this report comprise Zone 3.

Code:	120-KW-3	Classification:	Accepted
Names:	120-KW-3; 183-KW1 Sulfuric Acid Storage Tank	Reclassification:	Interim Closed Out (10/28/2011)
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1970
Description:	The site is the westernmost of the two original sulfuric acid tanks at the 183.1-KW Headhouse. The tank is a horizontal, cylindrical-shaped, steel tank supported above ground on concrete saddles. The tank has a capacity of 38,267 liters (10,109 gallons).		
Location:	The tank is located near the southeast corner of the 183.1-KW Headhouse, east of the eastern Sodium Silicate Storage Tank Site (100-K-21) and west of the second original Sulfuric Acid Storage Tank (120-KW-4).		
Release Description:	The supply pipe from this unit to the point of use inside the 183.1-KW Building developed slow leaks that deposited an unknown amount of sulfuric acid in the ground between the tanks and the building. The soil in the general area of the leak was neutralized.		
Process Description:	The sulfuric acid was used to activate sodium silicate. During seasons of high turbidity, activated silica solution was fed into the raw water to aid in coagulation.		
Related Sites/ Structures:	The site is associated with the 183.1-KW Headhouse, 120-KW-1, 120-KW-2 and 120-KW-4.		
Waste Type:	Chemicals		
Waste Description:			
Closure Info:	120-KW-1, 120-KW-2, 120-KW-3, and 120-KW-4 were addressed as a group. The information below documents information for the group of sites.		

Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 were remediated to remove the remaining structures and associated contaminated soil between May 2010 and June 2011. The original remediation activity for was anticipated to end once excavation to a depth of 4.6 m (15 ft) was achieved. Excavation to support remediation of the yellow-colored contaminated soil, however, continued due to the ongoing detection of mercury contamination levels above the RAGs in the RDR/RAWP (DOE/RL-96-17). The final depth of the remediation was 14.2 m (46.6 ft), which was located within the footprint of 120-KW-2. To support the deeper excavation, layback soil was accumulated in stockpiles (#7 and #9).

Stockpile #7 was started on April 19, 2011. No field quality control samples were collected; however the samples were analyzed for metals, hexavalent chromium and anions.

Stockpile #9 was started on May 17, 2011. No field quality control samples were collected however the samples were analyzed for metals, hexavalent chromium and anions.

Remediation south of the sedimentation basin (183.2-KW) at 100-KW was conducted as an area-wide remediation (100-K Area AA) to examine the soil underneath several co-located waste sites. Based on proximity and process, the remediation area was divided into 4 zones. The four waste sites included in this report comprise Zone 3.

Code: 120-KW-4 **Classification:** Accepted
Names: 120-KW-4; 183-KW2 Sulfuric Acid Storage Tank **Reclassification:** Interim Closed Out (10/28/2011)
Type: Storage Tank **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1970

Description: The unit is an above ground sulfuric acid storage tank and has a capacity of 38,000 liters (10,109 gallons). The site is the easternmost of the two original sulfuric acid tanks at the 183.1-KW Headhouse. The tank is a horizontal, cylindrical-shaped, steel tank supported above ground on concrete saddles.

Location: The unit is located in the southeast corner of the 183.1-KW Headhouse. The tank is located near the southeast corner of the 183.1-KW Headhouse, east of the eastern Sodium Silicate Storage Tank Site (100-K-21) and east of the other Sulfuric Acid Storage Tank (120-KW-3).

Process Description: The sulfuric acid was used to activate sodium silicate. During seasons of high turbidity, activated silica solution was fed into the raw water to aid in coagulation.

Related Sites/ Structures: The site is associated with 120-KW-1, 120-KW-2 and 120-KW-3.

Waste Type: Chemicals

Waste Description: The unit was used for storage of sulfuric acid product.

Closure Info: 120-KW-1, 120-KW-2, 120-KW-3, and 120-KW-4 were addressed as a group. The information below documents information for the group of sites.

Waste Sites 120-KW-1, 120-KW-2, 120-KW-3 and 120-KW-4 were remediated to remove the remaining structures and associated contaminated soil between May 2010 and June 2011. The original remediation activity for was anticipated to end once excavation to a depth of 4.6 m (15 ft) was achieved. Excavation to support remediation of the yellow-colored contaminated soil, however, continued due to the ongoing detection of mercury contamination levels above the RAGs in the RDR/RAWP (DOE/RL-96-17). The final depth of the remediation was 14.2 m (46.6 ft), which was located within the footprint of 120-KW-2. To support the deeper excavation, layback soil was accumulated in stockpiles (#7 and #9).

Stockpile #7 was started on April 19, 2011. No field quality control samples were collected; however the samples were analyzed for metals, hexavalent chromium and anions.

Stockpile #9 was started on May 17, 2011. No field quality control samples were collected however the samples were analyzed for metals, hexavalent chromium and anions.

Remediation south of the sedimentation basin (183.2-KW) at 100-KW was conducted as an area-wide remediation (100-K Area AA) to examine the soil underneath several co-located waste sites. Based on proximity and process, the remediation area was divided into 4 zones. The four waste sites included in this report comprise Zone 3.

Code: 120-KW-5 **Classification:** Accepted
Names: 120-KW-5; 183-KW Sodium Dichromate Storage Tank **Reclassification:** None
Type: Foundation **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1971

Description: The site is a foundation where a sodium dichromate storage tank was placed. The tank has been

Description: removed and all that remains is the concrete pad, contaminated soil, and any remaining piping. The vertical steel storage tank was 6.1 meters (20 feet) high, 5.8 meters (19 feet) in diameter, and had a 1.59E+05-liter (42,000-gallon) storage capacity.

Location: The site is located on the east side of the 183-KW Building. The center of the pad is 6.1 meters (20 feet) from the building's east wall.

Release Description: There are no documented releases. However, there is evidence of residual sodium dichromate in the soil that has accumulated from many years of unloading and handling.

Process Description: Sodium dichromate was added to the process water as a corrosion inhibitor. It was metered and proportioned by a single step operation in the head house, and diluted and injected into the process water in the process water pump house. The proportioning pumps took their suction directly from the storage tank. Near the process water pump house, the pumps discharged through a back pressure valve into a service water stream which diluted the dichromate on its way to injection into the process water. The injection point was located on the discharge of the low lift pump. Dichromate injection was determined by the process water flow. The chemical storage facilities at the 183-KW Building were sized to provide sufficient chemicals for two to three months continuous operation. Chemicals were delivered to the 183-KE Building by rail. With the exception of chlorine, all chemicals were transferred to their storage tanks by pumping or by pressurizing the tank cars with compressed air.

Related Sites/ Structures: The site is associated with the 183-KW Building.

Waste Type: Chemicals

Waste Description: Staining from sodium dichromate can be seen in the soil near the concrete pad.

Code: 120-KW-6	Classification: Accepted
Names: 120-KW-6; 165-KW Brine Mixing Tank; 165-KW Brine Pit	Reclassification: None
Type: Sump	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1970

Description: The unit is a below grade concrete structure that provided brine for the 165-KW Powerhouse. The roof of the structure was approximately 0.3 meters (1 foot) above ground level. The opening into the pit was covered by a wooden cover. Just south of the brine pit is a valve pit located within a vertical section of 1.2-meter (4-foot) diameter corrugated galvanized pipe. This valve pit contains residue and apparently was part of the brine operation. In August 1998, remaining liquid was removed and the open pit was backfilled to grade. The brine pit has inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.7 meters (9 feet) tall. The bottom of each pit is filled with a 13-centimeter (7-inch) layer of 1.3 to 2.6-centimeter (0.5 to 1-inch) gravel topped by a 18-centimeter (7-inch) layer of 0.3 to 0.6-centimeter (1/8 to 1/4-inch) gravel. The pit has a 1.2-meter (4-foot) by 1.1-meter (3.5-foot) opening for receiving salt.

Location: The site is located near the northwest corner of the 165-KW Powerhouse.

Process Description: The brine was probably used to regenerate the water softeners that treated water prior to steam generation within the 165-KW Powerhouse. Salt was off-loaded from rail cars and placed in the pit. Water was then circulated through the pit, and brine was pumped back to the 165-KW Powerhouse for further use.

Related Sites/ The site is associated with the 165-KW Powerhouse.

Structures:**Waste Type:** Chemicals**Waste Description:** The unit contains salt brine and residue. Based on sampling performed at the 120-KE-9 and 120-KW-7 Brine Pits, the brine and residue may be regulated as dangerous waste per Washington Administrative Code (WAC) 173-303.**Code:** 120-KW-7**Classification:** Accepted**Names:** 120-KW-7; 183-KW Brine Pit; 183-KW Salt Dissolving Pits and Brine Pump Pit**Reclassification:** None**Type:** Sump**Start Date:** 1/1/1955**Status:** Inactive**End Date:** 1/1/1970**Description:** The Salt Dissolving Pits and Brine Pump Pit were part of a single below grade concrete structure that provided brine for the 183-KW Water Treatment Facility. Four wooden covers and one metal cover were visible at the surface. The wooden covers are in poor condition. The unit contained saltcake and brine. In August 1998, remaining liquid was removed and the unit was backfilled to grade. The two salt dissolving pits each have inner dimensions of 3.0 meters (10 feet) long by 2.1 meters (7 feet) wide by 2.4 meters (8 feet) deep. A 15-centimeter (6-inch) by 30-centimeter (12-inch) overflow slot that connects the two dissolving pits is located just below the structure's roof. The bottom of each pit was filled with a 12.7-centimeter (5-inch) layer of 1.3 to 2.6-centimeter (1/2 to 1-inch) gravel topped by a 17.8-centimeter (7-inch) layer of 0.3 to 0.6-centimeter (1/8 to 1/4-inch) gravel. The dissolving pits each had a 1.8-meter (5.75-foot) by 0.9-meter (3-foot) opening at the top for receiving salt. The pits also had a smaller 46 by 46-centimeter (18 by 18-inch) opening that was probably used for checking the water level within each pit. The Brine Pump Pit is located adjacent to the two Salt Dissolving Pits. The pit is 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.4 meters (8 feet) deep. It holds two pumps and associated piping for the brine system. A 46 by 46 by 46-centimeter (18 by 18 by 18-inch) sump is located in the corner of the pit. The pump pit is accessible from the surface through a 0.6 by 0.6-meter (2 by 2-foot) opening.**Location:** The site is located approximately 37 meters (120 feet) east of the east end of the 183-KW Water Filter Plant and just north of the railroad spur that serviced the plant.**Process Description:** The salt brine was used to regenerate water softeners.**Related Sites/ Structures:** The brine pit is associated with the 183-KW Water Filter Plant.**Waste Type:** Chemicals**Waste Description:** The unit contains salt brine and residue. A minimal sampling was performed at the site. The brine samples were analyzed by Hanford Environmental Health Foundation (HEHF) on September 5, 1989. A sample from one of the dissolving pits was described as a light yellow water-miscible liquid with approximately 1% yellow/orange residue and a pH of 6. The sample contained 12.5% sodium ion, 19.8% chloride ion, and 33 milligrams/liter potassium. The measured concentrations of EP-Toxicity metals were 0.12 milligrams/liter arsenic, 1.3 milligrams/liter barium, 0.1 milligrams/liter cadmium, 0.78 milligrams/liter chromium, 0.58 milligrams/liter lead, 0.28 milligrams/liter selenium, and 0.66 milligrams/liter silver. All other analytes were below detection limits. A sample from the other dissolving pit was also described as a very light yellow water-miscible liquid with approximately 10% white and tan crystals and a pH of 6. The sample contained 7.9% sodium ion, 19.7% chloride ion, and 240 milligrams/liter potassium. The measured concentrations of EP-Toxicity metals were 0.14 milligrams/liter arsenic, 1.9 milligrams/liter barium, 0.57 milligrams/liter chromium, 0.72 milligrams/liter lead, 0.31 milligrams/liter selenium, and 0.58 milligrams/liter silver. All other

analytes were below detection limits. Only the liquid portions of the samples were analyzed. An informal review of results by the Sitewide Hazardous Waste Engineering Support Unit (SHWES) indicated that the brine and residue may be regulated as Dangerous Waste per Washington Administrative Code (WAC) 173-303.

Code: 130-KW-1 **Classification:** Accepted

Names: 130-KW-1; 130-KW-1A/130-KW-1B Tanks; 105-KW Emergency Diesel Fuel Tank; 105-KW Emergency Diesel Oil Storage Tank **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1971

Description: The site is the location of two underground diesel storage tanks that were removed in 1992. Although the location description states the diesel tanks were located between the 105-KW exhaust stack and the 119-KW building, a sign is posted at the northwest corner of the 115 KW building that reads "130-KW-1 Diesel Tanks" This is further east and south of the reactor stack. There is no visual evidence of the tanks in either location. The site has been backfilled with uncontaminated soil to grade and covered with gravel. There is a very large Underground Radioactive Material area that surrounds the reactor facility. This site is not separately posted or marked.

Location: The site is located on the east side of the 105-KW Reactor Building. The underground diesel tanks were located between the reactor exhaust stack and the 119-KW Building.

Release Description: During the excavation of the diesel tanks, the site was found to be radioactively contaminated with contamination levels up to 400 counts per minute in the soil and on the exterior of the tanks. Due to this contamination, the pit was backfilled with uncontaminated soil and posted appropriately. Attempts to decontaminate the tanks were unsuccessful. The tanks were wrapped with plastic and disposed of on the Hanford site. Since the tanks were located very close to the reactor building, the long term plan for is to decontaminate or remove the remaining contaminated soil when the reactor and surrounding site is remediated. The site was not released due to the radioactive contamination.

Process Description: The tanks contained diesel fuel for the emergency generators during the operation of the 100-KW Reactor.

Waste Type: Soil

Waste Description: The tanks were used for storage of diesel fuel (product). Radioactive contamination was discovered on the exterior of both tanks when they were removed. The Organic Vapor Monitor readings were below the detection limit.

The Following Sites Were Consolidated With This Site:

Code: 100-K-76

Names: 100-K-76; 105-KW Unplanned Release Discovered Near 130-KW-1 Emergency Diesel Tank

Code: 130-KW-2 **Classification:** Accepted

Names: 130-KW-2; 166-KW Oil Storage Tank **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1970

Description: The bunker is an underground, reinforced concrete structure. It has two compartments, each

having a storage capacity of 3,033,629 liters (801,400 gallons).

Location: The storage tank is located southwest of 105-KW. It is an underground facility west of the 165-KW Boilerhouse.

Process Description: The tank was used for storage of fuel oil (product) for the 165-KW Boilers. Fuel was delivered to the bunkers from rail cars and filled through 15 centimeter (6 inch) diameter gravity lines. Two day tanks are located on the south side of each bunker. Each Day Tank had a 186,621 liter (49,300 gallon) capacity.

Waste Type: Oil

Waste Description: The tank was used for storage of oil (product) for the 165-KW Boilers.

Code: 132-KW-1 **Classification:** Accepted

Names: 132-KW-1; 116-KW Reactor Exhaust Stack **Reclassification:** None

Type: Stack **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1970

Description: The original height for this unit was 91.5 meters (300 feet). The current height is 53.4 meters (175 feet).

Location: The unit is located on the northeast side of the 105-KW Building.

Related Sites/Structures: Following completion of the confinement project in 1960, the air was diverted via underground reinforced concrete ducts to the 117-KW Filter Building. After flowing through the filters, the air went out the exhaust stack.

Waste Type: Demolition and Inert Waste

Waste Description: Discharged ventilation air from the 105-KW Building flowed through concrete ducts directly out the exhaust stack.

Code: 600-29 **Classification:** Accepted

Names: 600-29; 100-K Construction Lay-down Area; 100-K-41 **Reclassification:** None

Type: Dumping Area **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1954

Description: The unit is an abandoned dumping area containing several rectangular depressions and waste burning sites. There are many areas of discolored soil that include coal, rust colored soil and white residue patches. Slightly south of a gravel road that transverses the site is the Strong Motion Accelerometer (SMA) also known as H1K. The SMA site consists of a four-panel solar array and two 30-gallon galvanized drums (PNNL-14953-3). The two 30-gallon drums are set in the ground such that the base of the drum is about 1 m below the surface. One drum houses only the SMA; the other drum, which is connected via a sealed conduit to the SMA drum, contains the batteries. South of 100 -KW is a cement building foundation with a portion of it enclosed in a chain link fence. The foundation has two french drains, one near the north side and one near the east side. In the southwest corner of the foundation are plumbing holes indicating bathroom facilities. It is possible a septic tank may also be located nearby. During June of 1999 Global Positioning System (GPS) project entailed mapping the locations of selected Radiation Area Remedial Action (RARA) sites in the 100-K Area. The 600-29 was one of the sites surveyed. See report number (WCH CCN 0511006). A total of thirty data points were collected with Washington State Plane (WSP) coordinates with a brief description. Some

points were collected to define the outer extent of the site as well as to map features within the site. During November of 2003 a Geophysics Investigations (CCN 110813) was conducted over the entire area defined by the 1999 GPS survey. The report included a general location map, and summaries for Electromagnetic Induction (EMI) and magnetic data contours plots and maps of the surface features. The area was approximately four hundred by fifteen hundred meters and is the current area mapped in the Washington Closure Hanford (WCH) Geographic Information System (GI). This updated area is 333,287 m² (82 acres) rather than the originally estimated 185,806 m² area (45 acres). During the 2007 Orphan Site Evaluation (OSE) for the 100-K operable unit and surrounding area field investigation, the 600-29 waste site was walked down to collect further site characterization data. A total of forty discrete feature locations within the 600-29 site boundaries were collected using a hand-held GPS unit. Photos and GPS coordinates were collected for each feature. The features were categorized as one of three types 600-29 waste component, miscellaneous restoration, and stewardship.

Location: The site is located outside of the southern perimeter fence at 100K.

Process Description: This location was originally used as the construction camp and lay-down yard during construction of 105-KW.

Waste Type: Construction Debris

Waste Description: Unit wastes consist of miscellaneous metals, wood, cans, bottles, construction hardware and materials, what appears to be tar dumped on the ground, buckets and mops covered with what appears to be tar, a 18.725-liter (5-gallon) bucket of oily rags, broken pieces of a toilet bowl, what appears to be asbestos and transite, and wire rope.

Code: UPR-100-K-1 **Classification:** Accepted

Names: UPR-100-K-1; 105-KE Fuel Storage Basin Leak; UN-100-K-1; UN-116-KE-2 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1979

Description: The site is not marked or posted on the surface.

Location: The leak occurred beneath the 105-KE Fuel Storage Basin.

Release Description: The 105-KE pickup chute area (of the 105-KE Fuel Storage Basin) had an estimated release to the ground of more than 1700 liters/ hour (450 gallons/hour) for an unknown period of time. Leak rates ranging from 2.6 to 9.5 gallons per minute were documented between 1974 and 1979.

Related Sites/ Structures: The leak is associated with 105-KE Fuel Storage Basin (sitecode 100-K-42) and 100-K-64 Flood Plain.

Waste Type: Water

Waste Description: The fuel storage basin effluent included contaminants from fuel cladding failures. Cobalt-60, Strontium-90, Cesium-137 and small amounts of plutonium were noted in the soil beneath the 105- K East basin.

100-NR-1

Code: 100-N-1 **Classification:** Accepted

Names: 100-N-1; HGP Settling Pond; HGP SWMU #6 **Reclassification:** Interim Closed Out (6/15/2004)

Type: Pond **Start Date:** 1/1/1965

Status: Inactive **End Date:** 1/1/1993

Description: The site has been remediated and interim closed out. The settling pond was cut into the side of a steep slope leading to the river. A concrete flume was located at the south end of the site. An outlet valve and pipe were located on the west side of the site.

Location: The Hanford Generating Plant (HGP) Settling Pond was located between the HGP Seal Well building (1908-NE) and the 185-N Building.

Release Description: An oil spill occurred on January 2, 1987 that was contained in the settling pond. Clean up of the five gallon oil spill was conducted by United Nuclear Corporation (UNC) and JA Jones in February 1987.

Process Description: This unit was constructed to control the Hanford Generating Plant (HGP) waste stream effluents. The effluent flowed into the pond, allowed solids to settle, and the remaining liquid was released to 1908-NE (HGP outfall). A valve was installed on the outlet pipe to prevent the discharge of oil to the outfall. The unit received waste from the HGP condenser pit, service water pumps demineralizer backwash and runoff from the roof and parking lot. An outlet pipe drained the pond directly to 1908-NE (HGP Outfall). The piping from the HGP Building floor drains and sumps to the settling pond was included with the settling pond.

Waste Type: Process Effluent

Waste Description: The pond operated concurrently with the Hanford Generating Plant (HGP) and received process water from the plant that contained trace oxygen scavenging conditioners such as morpholine, hydrazine and ammonia. Sampling has indicated elevated levels of chromium, lead, nickel, calcium, copper, zinc and ammonia. Trace surface radioactive contamination is detectable.

Code: 100-N-3 **Classification:** Accepted

Names: 100-N-3; HGP SWMU #9; Maintenance Garage French Drain; Maintenance Garage Waste Water Treatment Unit **Reclassification:** Interim Closed Out (6/15/2004)

Type: French Drain **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The site has been remediated and interim closed out. The unit was marked by a 3-meter (10-foot) square barricade and gravel covering a 31-meter (100-foot) square surface. A 1.2-meter (4-foot) diameter steel plate covered the center.

Location: The site was located in the 100-N Area, at the Washington Public Power Supply System (WPPSS) Hanford Generating Plant Facility, approximately 7.6 meters (25 feet) east of 100-N-78 Hanford Generating Plant (HGP) Maintenance Garage.

Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were located in the 185-N Building. The site was an ancillary or support facility to the former Hanford Generating Plant.

Related Sites/ Structures: The unit received effluent from 100-N-78, the 1716-NE HGP Maintenance Garage.

Waste Type: Oil

Waste Description: The unit received petroleum wastes.

Code: 100-N-4

Classification: Accepted

Names: 100-N-4; HGP SWMU #5; HGP Tile Field

Reclassification: Interim Closed Out (6/15/2004)

Type: Drain/Tile Field

Start Date: 1/1/1966

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out. The tile field was approximately 37.8 meters (124 feet) by 16.8 meters (55 feet) and contained eight 10-centimeter (4-inch) diameter tile pipelines that discharged effluent to the soil column. The tile pipe was about 0.5 meters (18 inches) below the tile field surface in a gravel-filled trench that was approximately 0.6 meters (2 feet) deep and 0.5 meters (18 inches) wide.

Location: The unit was located between the Hanford Generating Plant (HGP) Seal Well building (1908-NE) and the 185-N Building, upslope and east of the HGP Settling Pond.

Process Description: The former HGP consisted of two 430 megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were formerly located in the 185-N Building. The site was an ancillary or support facility to the former HGP. The site was an ancillary or support facility to the former HGP, and received effluent from the 185-N Building drains of the HGP Sanitary Sewer and lab. The unit was designed to release waste water by allowing it to percolate into the soil.

Related Sites/ Structures: The site received effluent from the 185-N Building drains of the HGP Sanitary Sewer and lab.

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary sewage and lab waste. Testing for corrosion inhibitors hydrazine and morpholine were performed in the lab. It is likely that reagents used for these tests were discharged to the unit.

Code: 100-N-5

Classification: Accepted

Names: 100-N-5; HGP Bone Yard; HGP Disposal and Storage Area; HGP SWMU #10

Reclassification: Interim Closed Out (6/15/2004)

Type: Storage

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out.

Location: The unit was located southwest of the Hanford Generating Plant (HGP) Building (185-N) in the 100-N Area. It was inside the HGP security fence.

Process Description: Material and equipment were stored inside the southwest corner of the Hanford Generating Plant facility fence. Some of the material included scrap metal, electrical equipment, pipes and cables. The unit was located on a level area which had several spots of stressed or absent vegetation. Some of the soil was oil stained. Garnet sandblasting grit was also present.

Related Sites/ Structures: The site was associated with the Hanford Generating Plant (HGP).

Structures:

Waste Type: Construction Debris

Waste Description: The unit contained scrap iron, brass, copper, electrical components, piping, cable, and miscellaneous pieces of metal equipment. The site also contained oil stains, sand blasting grit, and ion exchange resin beads on the soil.

Code: 100-N-6 **Classification:** Accepted

Names: 100-N-6; 128-N-1; 128N-FS-3 **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: In 1994, the site appeared to have been leveled and scraped.

Location: The site is located east of 1120-N and northwest of 124-N-10.

Process Description: This site was used to burn miscellaneous trash and debris.

Related Sites/Structures: The site is associated with 100-N-16 and 128-N-1.

Waste Type: Misc. Trash and Debris

Waste Description: In 1992 soil samples were collected and analyzed for the 100-NR-1 Remedial Investigation/Corrective Measures Study (RI/CMS). Field screening were less than detectable for volatile organic compounds (VOC), total petroleum hydrocarbons (TPH), and polychlorinated biphenyls (PCB). Heavy metals and metal-complexed compounds did not differ from background.

Code: 100-N-13 **Classification:** Accepted

Names: 100-N-13; Contaminated Soil Solid Waste Site 1 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is posted at four corners with "Underground Radioactive Material" signs. Approximately 0.3 to 0.6 meters (1 to 2 feet) of soil has been placed on top of the site, which also contains miscellaneous construction debris.

Location: The site is located in the 100 N area, about 124 meters (405 feet) northeast of the 1120-N Building. It is in the northeast quadrant of the dirt road intersection that is northeast of the 1120-N.

Waste Type: Soil

Waste Description: A May 1993 radiation survey identified the presence of cobalt-60 at the site. A photograph from about 1963 shows a dark circular area (possibly a burn pit) in the vicinity of this site. A 1988 photo shows a crane (possibly regulated) parked in the vicinity of this site.

Code: 100-N-14 **Classification:** Accepted

Names: 100-N-14; Contaminated Soil Solid Waste Site 2 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is posted at four corners with "Underground Radioactive Material" signs.

Description: Approximately 0.3 to 0.6 meters (1 to 2 feet) of soil has been placed on top of the site.

Location: The site is located in the 100N Area, about 453 meters (1500 feet) east of the 1120-N Building.

Release Description: A May 1993 radiation survey identified the presence of cesium-137 at the site.

Waste Type: Soil

Waste Description:

Code: 100-N-16 **Classification:** Accepted

Names: 100-N-16; 128N-FS-2; Burn Pit 1 **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site appears as a 18 meters (20 yards) by 18 meters (20 yards) semi-cleared circular area. Ash is evident on the surface and the area is covered with glass, wire, coil, pipe, tin cans, metal, and other burned debris.

Location: The site is located east of 1120-N, northwest of 124-N-10.

Process Description: Nonhazardous waste (paper, wood, trash) generated at 100-N were burned here.

Related Sites/ Structures: Other burn pits (128-N-1, 100-N-6, and 100-N-17) are located near this site and were used for similar purposes.

Waste Type: Misc. Trash and Debris

Waste Description: Nonhazardous waste (paper, wood, trash) generated at 100-N were burned here. In 1992 soil samples were collected and analyzed for the 100-NR-1 Remedial Investigation/Corrective Measures Study (RI/CMS). Field screening samples were less than detectable for volatile organic compounds (VOC) and total petroleum hydrocarbons (TPH). Heavy metals and metal-complexed compounds did not differ from background. The site tested positive for polychlorinated biphenyls (PCBs).

Code: 100-N-17 **Classification:** Accepted

Names: 100-N-17; 128N-FS-1; Burn Pit 2 **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site is covered with gravel, cobbles and dead tumbleweeds. Much of the site has been backfilled with fill material

Location: The site is located east of 1120-N and northwest of 124-N-10.

Process Description: Combustible materials such as vegetation, office wastes, wood, trash, tools, hardware, and possibly paints and solvents have been burned at this site.

Related Sites/ Structures: The site is associated with 100-N-34 Dump Site, 100-N-16 Burn Pit and 128-N-1 Burn Pit.

Waste Type: Misc. Trash and Debris

Waste Description: Nonhazardous waste (paper, wood, trash) generated at 100-N were burned here. Other

combustible materials such as vegetation, office wastes, tools, hardware, and possibly paints and solvents have been burned at this site. In 1992 soil samples were collected and analyzed for the 100-NR-1 Remedial Investigation/Corrective Measures Study (RI/CMS). Field screening samples were less than detectable for volatile organic compound (VOC), total petroleum hydrocarbons (TPH), and polychlorinated biphenyls (PCB). Heavy metals and metal-complexed compounds did not differ from background.

Code: 100-N-18 **Classification:** Accepted

Names: 100-N-18; Hanford Generating Plant Burn Pit; HGP Burn Pit **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:** 1/1/1989

Description: The site shows evidence of burning including charred wood and burned metal. Vegetation at the site is sparse with a few rabbitbrush plants.

Location: The Hanford Generating Plant (HGP) Burn Pit is located approximately 123 meters (404 feet) southwest of the Bonneville Power Administration (BPA) Hanford Substation.

Process Description: Combustible materials such as vegetation, office wastes, wood, trash, tools, hardware, and possibly paints and solvents have been burned at this site.

Waste Type: Misc. Trash and Debris

Waste Description: Soil samples were collected from disturbed areas of the pit and analyzed using field screening methods. Samples tested contained less than detectable concentrations of volatile organic compounds (VOCs), heavy metals, total petroleum hydrocarbons (TPH), and polychlorinated biphenyls (PCBs).

Code: 100-N-22 **Classification:** Accepted

Names: 100-N-22; 1705-N Septic Tank and Cesspool; 1706-NA Sanitary Sewer System **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The septic tank has been removed. It was a reinforced concrete underground tank with a metal cover posted with a confined space sign. The septic tank was abandoned. It was emptied and filled with sand. The inlet sewer line was cut and capped.

Location: The site is located north-northeast of 1714-NB.

Related Sites/Structures: This facility most likely served the 105-N, 1705-N and 1706-N Buildings.

Waste Type: Sanitary Sewage

Waste Description:

Code: 100-N-23 **Classification:** Accepted

Names: 100-N-23; Resin Disposal Pit Liquid Waste Site 1 **Reclassification:** None

Type: Process Pit **Start Date:**

Status: Inactive

End Date:

Description: The overflow sump appears as an open rectangular pit with a 61-centimeter (24-inch) drain pipe protruding from the north side of the pit. There are two drain pipes that discharged into this site. The larger drain originated from the 183-NB Clearwell and the other originated from the 163-N Demineralization Plant.

Location: The site is located west of the 116-N-8 Facility (163-N Mixed Waste and Hazardous Waste Container Storage Pad).

Related Sites/ Structures: There are two drain pipes that discharged into this site. The larger drain originated from the 183-NB Clearwell and the other originated from the 163-N Demineralization Plant.

Waste Type: Chemicals

Waste Description: According to site personnel, the pit was used to dispose of resin generated in the 163-N Demineralized Water Plant. The pit later served as the clearwell overflow up until about 1990. Although it is not used for that purpose anymore, it could be used on an emergency basis. On May 5, 1980 and January 1976 the overflow sump received neutralized waste that was pumped from cleanup actions for an acid spill that occurred on the 108-N/163-N Transfer Line.

Code: 100-N-24

Classification: Accepted

Names: 100-N-24; Hydrogen Dry Well Liquid Waste Site; Hydrogen Peroxide Drywell

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is identified by a buried vertical concrete pipe with a 0.83-meter (2.75-foot) diameter steel cover. The hydrogen peroxide drywell is a non-reinforced concrete pipe of 0.83-meters (2.75-feet) above a subchamber 2.53 meters (8.3 feet) in diameter. The subchamber is set in a gravel pocket 3.35 meters (11 feet) in diameter. Welded wire fabric cells 15 centimeters (6 inches) by 10.1 centimeters (4 inches) were within the subchamber.

Location: The site is located south of the 184-N Building and west of the southwest corner of the 153-N Switch Gear Building.

Process Description: The hydrogen peroxide drywell was constructed to receive and disperse liquids from the Hydrogen Peroxide Sump Pump to the surrounding soil below ground level.

Related Sites/ Structures: The hydrogen drywell is connected to a 5-centimeter (2-inch) chemical drain line which extends from the 109-N Building.

Waste Type: Chemicals

Waste Description: The waste is the predominantly concrete and metal structure of the hydrogen peroxide drywell. The site received 50 percent hydrogen peroxide and water from the hydrogen peroxide sump under the hydrogen peroxide tank located in the 109-N Decontamination Facility. The solution used for washing down of the storage tank area.

Code: 100-N-25

Classification: Accepted

Names: 100-N-25; French Drain 1 Liquid Waste Site (100N TBR 4.86)

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site has a 0.9-meter (3-foot) diameter metal cover at grade. The surrounding area is

covered with gravel.

Location: This underground site is located in the 100-N Area, approximately about 82 meters (270 ft) south of 116-N-2 (Golf Ball).

Process Description: The purpose of this drain is unknown; the nearest structure was the 1105-N Administrative Office Trailer, which existed from 1975 to 1986.

Code: 100-N-26 **Classification:** Accepted

Names: 100-N-26; French Drain 2 Liquid Waste Site (100N TBR 4.86) **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The vertical concrete pipe extends 5 centimeters (2 inches) above grade and is closed by a vented metal cover. The surrounding area is covered with gravel.

Location: This underground site is in the 100-N Area, north-northeast of the 13-N Building (signed as Fitters Stock N-13 L).

Release Description: Waste sites 100-N-26 and 120-N-4 were impacted by a raw water pipeline break on December 11, 2008. The regulators and tribes have requested that this release information be noted in WIDS. During the removal of the concrete pad at the 1524-N Hazardous waste storage facility on December 11, 2008 an unknown 1.5 inch tap into the export water line was inadvertently contacted. A rupture of the 12 inch export water line and a release of at least 50,000 gallons of raw water onto the surrounding area resulted. A temporary berm was constructed around the area using excess clean 100 Area Borrow Pit material to contain the release and control potential spread of radiological contamination associated with the 1524-N pad. Once the water line was turned off the water in the area immediately percolated into the ground. In-process and post-event surface soil radiological field survey results did not find any contamination spread as a result of the water release. A follow-up review of nearby monitoring wells as well as the standard waste site confirmatory sampling will be used to ascertain potential impacts/conditions.

Waste Type: Steam Condensate

Waste Description: The site receives yard steam condensate.

Code: 100-N-28 **Classification:** Accepted

Names: 100-N-28; Resin Disposal Pit Liquid Waste Site 2 **Reclassification:** None

Type: Process Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site appears as a slight depression around a 1.5-meter (5-foot) square concrete structure that has a 0.8-meter (2.5-foot) by 0.63-centimeter (0.25-inch) rusted metal cover. The site is surrounded with four heavy steel posts connected with chain. The steel cover is posted as a confined space. The cover was opened by site personnel revealing a 0.44-meter (17.5-inch) by 0.38-meter (15-inch) solid lead shielding plug with four lifting lugs. The plug was provided as a shield for protection against any radiation that may be contained in the disposed resin charge. Under the plug is a 3.05-meter (10-foot) by 25.4-centimeter (10-inch) diameter pipe leading to the disposal pit. The pit is 5.3 meters (17.5 feet) by 3.8 meters (12.5 feet) by 4.1 meters (13.5 feet) high (including the footing). The pit is lined with 0.38 meters (15 inches) of gravel and concrete masonry block and portland cement mortar. The bottom of the pit contains 0.38

meters (15 inches) of 5 to 7.6-centimeter (2 to 3-inch) gravel. The bottom of the structure is approximately 7.47 meters (24.5 feet) below grade.

- Location:** This unit is located south of the 184-N Building and west of the 153-N Building.
- Process Description:** The resin disposal pit was designed to receive the resin charge from the 109-N Ion Exchanger. The construction of the pit is such that all liquids entrained in the resin are filtered to the soil below the resin disposal pit. The effective volume of the resin disposal pit was 40.36 cubic meters (1,425 cubic feet) and the maximum resin charge in the ion exchanger was 3.12 cubic meters (110 cubic feet). A 7.62-centimeter (3-inch) chemical drain goes from the 109-N Decontamination Facility to the Resin Disposal Pit.
- Related Sites/ Structures:** The Resin Disposal Pit is connected to a 7.6-centimeter (3-inch) chemical drain line which originates in the 109-N Building.
- Waste Type:** Process Effluent
- Waste Description:** The waste is the below grade structure, including the lead shield plug, piping to the pit from the 109-N Facility, and the pit structure. Site employees report that the pit was initially used for reactor decontamination waste and may have never actually been used as a resin disposal pit. Documentation (HW-69000-Volume II) states that the Resin Disposal Pit was designed to receive the resin charge from the 109-N Ion Exchanger.

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- Code:** 100-N-29 **Classification:** Accepted
- Names:** 100-N-29; Unplanned Release on 25-Centimeter (10-Inch) Blowdown Pipeline #1 **Reclassification:** None
- Type:** Unplanned Release **Start Date:**
- Status:** Inactive **End Date:**
- Description:** The 1300-N Emergency Dump Basin is an open basin that held radioactive water. The area surrounding it is level and graveled with no vegetation.
- Location:** The site is located just off the southwest corner of the 104-N Building between valve BDV 6214 and BDV 801 on the 25-centimeter (10-inch) blowdown pipeline.
- Release Description:** Through process knowledge, it is known that several water leaks occurred around and adjacent to the dump basin in the early 1980's.
- Process Description:** The Emergency Dump Basin received contaminated liquid generated during the periodic blowdown of the steam generators located in the 109-N Building. This condensate contained low levels of radioactive contaminants.
- Related Sites/ Structures:** The 1300-N Emergency Dump Basin (116-N-4), 100-N Reactor, 109-N Building and the 259 centimeter (102 inch) Outfall (NPDES 009) are associated with this Unplanned Release site.
- Waste Type:** Water
- Waste Description:** An inventory table from an unnumbered document is attached to the listed reference. Contaminants in the Dump Basin liquid include average concentrations of 6.25 E+05 of H-3, 6.12 E+01 of C0-60, 5.70 E+04 of Sr-90, 2.51 E+01 of Zr-95, <5.16 E+01 of Ru-106, 2.16 E+01 of Sb-125, <5.16 E+00 of Cs-134, 9.27 E+02 of Cs-137, 1.62 E-02 of Pu-239 and 1.82 E-01 of Pu 239/240.

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- Code:** 100-N-30 **Classification:** Accepted

Names: 100-N-30; Unplanned Release on 10-Inch Blowdown Pipeline #2 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a level, graveled area with no vegetation. The area surrounding the dump basin is also graveled. The site is an open metal basin that held radioactive water.

Location: The site is located just off the southwest corner of the 104-N Building at valve BDV 6214 on the 25-centimeter (10-inch) blowdown pipe line.

Release Description: Through process knowledge it is known that several water leaks occurred around and adjacent to the dump basin in the early 1980's.

Process Description: The Emergency Dump Basin received contaminated liquid generated during the periodic blowdown of the steam generators located in the 109-N Building. This condensate contained low levels of radioactive contaminants.

Related Sites/Structures: The 1300-N Emergency Dump Basin (116-N-4), 109-N Building and the 259-centimeter (102-inch) Outfall (NPDES 009) are associated with this Unplanned Release site.

Waste Type: Water

Waste Description: Contaminants in the Dump Basin liquid include average concentrations of 6.25 E+05 of H-3, 6.12 E+01 of C0-60, 5.70 E+04 of Sr-90, 2.51 E+01 of Zr-95, <5.16 E+01 of Ru-106, 2.16 E+01 of Sb-125, <5.16 E+00 of Cs-134, 9.27 E+02 of Cs-137, 1.62 E-02 of Pu-239 and 1.82 E-01 of Pu 239/240.

Code: 100-N-31 **Classification:** Accepted

Names: 100-N-31; Unplanned Release on 30-Inch Pipe Line **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is a leak from a valve (FLV-858) transferring radioactively contaminated water from the 105-N Reactor to the 1300-N Emergency Dump Basin. The surface area has no vegetation and is level and graveled.

Location: The site is located just off the northeast corner of the 1300-N Emergency Dump Basin at Valve #FLV-858 in the 76-centimeter (30-inch) pipeline.

Release Description: Through process knowledge, it is known that several water leaks occurred around and adjacent to the dump basin in the early 1980's.

Related Sites/Structures: The 100-N Reactor, and 1300-N Emergency Dump Basin are associated with the site.

Waste Type: Water

Waste Description: Through process knowledge, it is known that water was slightly chemically treated with hydrazine and mophaline which are very volatile and most likely not detectable. The water was radioactively contaminated.

Code: 100-N-32 **Classification:** Accepted

Names: 100-N-32; Unplanned Release on 25-Centimeter (10-Inch) Blowdown Pipeline #3 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is a leak from a valve (BDV-800) transferring radioactively contaminated water from the 105-N Reactor to the 1300-N Emergency Dump Basin. The surface area is level, graveled, and has no vegetation.

Location: The site is located just off the northeast side of the 1300-N Emergency Dump Basin at Valve #BDV-800 in the 25-centimeter (10-inch) blow down line between the steam generators and the basin.

Release Description: Through process knowledge it is known that several water leaks have occurred around and adjacent to the dump basin in the early 1980's.

Process Description: The Emergency Dump Basin received contaminated liquid generated during the periodic blowdown of the steam generators located in the 109-N Building. This condensate contained low levels of radioactive contaminants.

Related Sites/ Structures: The 1300-N Emergency Dump Basin, 109-N Building, and 100-N Reactor are associated with the site.

Waste Type: Water

Waste Description:

Code: 100-N-33 **Classification:** Accepted

Names: 100-N-33; 100-N Military Installation Ash Pit **Reclassification:** None

Type: Coal Ash Pit **Start Date:**

Status: Inactive **End Date:**

Description: The irregularly-shaped site is covered with a dark material that looks like uniform grain-size ash, perhaps the remnants of coal burning.

Location: The site is located generally southeast of the 100-N Area and southwest of the 100-N Military Artillery Site. The site is south southeast of the 105-N Reactor Building.

Process Description: The source of the material is unknown.

Waste Type: Ash

Waste Description: A description of the waste is not known at this time.

Code: 100-N-34 **Classification:** Accepted

Names: 100-N-34; Debris Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is an irregular shape with gravel/cobble (some in piles), weedy vegetation, and dead tumbleweeds (some in piles) present. Construction debris including asphalt, concrete, and

metal pipe are also present.

Location: The site is located east of 1120-N, north northwest of 124-N-10.

Process Description: This site received debris from 100-N Area construction and operation activities.

Related Sites/ Structures: A burn pit (100-N-17) is located in the general area of this site.

Waste Type: Misc. Trash and Debris

Waste Description:

Code: 100-N-35 **Classification:** Not Accepted (Proposed)

Names: 100-N-35; BPA Hanford Substation; Hanford Generating Plant (HGP) Substation **Reclassification:** None

Type: Electrical Substation **Start Date:** 7/12/1971

Status: Active **End Date:**

Description: The substation consists of a control house, maintenance building, microwave tower, and a switchyard.

Location: The site is located southwest of the 100-N Reactor area.

Release Description: On June 6, 1989, oil leaked from equipment (BPA nno. 4001 MOD). The source document does not specify oil type or equipment use. On July 16, 1990, a hydraulic leak from a fitting on B-phase circuit breaker was repaired. Soil sampled near the leak at various times showed polychlorinated biphenyl (PCB) concentrations ranging from less than detectable to 7 milligrams/kilogram (7 parts per million).

Process Description: The Hanford Generating Plant (185-N Building) produced electricity for the Bonneville Power Association (BPA) grid using steam from the N-Reactor operation. The Hanford Substation distributed the power into the grid. The Hanford Generating Plant operated continuously from April 1966 to December 1986. As of August 2000, the BPA Hanford Substation was still active.

Related Sites/ Structures: The site is associated with a construction dump area located outside the facility boundary known as Solid Waste Management Unit (SWMU) #11. See WIDS sites 100-N-19 and 100-N-39.

Waste Type: Oil

Waste Description: There is asbestos insulated piping in the basement of the mechanical room. Mineral oil containing polychlorinated biphenyls and solvents is used during routine equipment maintenance.

Code: 100-N-36 **Classification:** Accepted

Names: 100-N-36; 107-N Oil Stained Pad **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of an air compressor pad adjacent to the 107-N Building. The concrete pad and adjacent asphalt are stained with lube oil from the air compressor that was previously installed on the concrete pad. The surface area is covered with asphalt except for the concrete

pad that is approximately 1.2 meters (4 feet) by 2.4 meters (8 feet).

Location: The air compressor pad is adjacent to the 107-N Building.

Related Sites/ Structures: The 107-N Building is associated with the site.

Waste Type: Oil

Waste Description: The waste consists of non-hazardous petroleum product (oil) from air compressor leaks.

Code: 100-N-37

Classification: Accepted

Names: 100-N-37; 109-N Asbestos Release

Reclassification: None

Type: Unplanned Release

Start Date: 1/16/1995

Status: Inactive

End Date:

Release Description: Heavy rainfall caused a subsidence next to a caisson directly beneath the west elbow of the steam transfer line at the 109-N Building. The same rainfall saturated asbestos insulation lagging on the steam transfer piping causing a large chunk (estimated to weigh 180 to 320 kilograms [400 to 500 pounds]) to fall off. It was apparent that some of the asbestos insulation washed down the subsidence next to the caisson. Surface asbestos material was cleaned up and disposed of. The subsidence was backfilled with clean fill material. No action was taken to remove asbestos contamination from the subsidence.

Related Sites/ Structures: The 109-N Building was associated with the site.

Waste Type: Asbestos (non-friable)

Waste

Description:

Code: 100-N-38

Classification: Accepted

Names: 100-N-38; Unplanned Release at 1300-N

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The waste site is a leak of radioactively contaminated water from the 105-N Reactor to the 1300-N Emergency Dump Basin. The area surrounding the basin is level, graveled, and has no vegetation.

Location: The site is located just off the northeast corner of the 1300-N Emergency Dump Basin where the 25-centimeter (10-inch) blow down line connects to the basin.

Process Description: From 1973 to 1987, the Emergency Dump Basin received contaminated liquid generated during the periodic blowdown of the steam generators located in the 109-N Building. This condensate contained low levels of radioactive contaminants.

Related Sites/ Structures: The 1300-N Emergency Dump Basin (116-N-4) and the 109-N Building are associated with the site.

Waste Type: Water

Waste Description: Through process knowledge it is known that several water leaks have occurred around and

adjacent to the dump basin in the early 1980's. Contaminants in the Dump Basin liquid include average concentrations of 6.25 E+05 of H-3, 6.12 E+01 of C0-60, 5.70 E+04 of Sr-90, 2.51 E+01 of Zr-95, <5.16 E+01 of Ru-106, 2.16 E+01 of Sb-125, <5.16 E+00 of Cs-134, 9.27 E+02 of Cs-137, 1.62 E-02 of Pu-239 and 1.82 E-01 of Pu 239/240.

Code: 100-N-41 **Classification:** Accepted
Names: 100-N-41; 1701-NE Gate House Septic Tank; HGP SWMU #9 **Reclassification:** Interim Closed Out (6/15/2004)
Type: Septic Tank **Start Date:** 1/1/1965
Status: Inactive **End Date:** 1/1/1986
Description: The site has been remediated and interim closed out.
Location: The site was located just off the north corner of the 1701-NE Gate House within the HGP portion of the 100N area.
Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were located in the 185-N Building. The site was an ancillary or support facility to the former HGP. The site consisted of a septic system that received effluent from the 1701-NE Gate House.

Waste Type: Sanitary Sewage
Waste Description:

Code: 100-N-45 **Classification:** Accepted
Names: 100-N-45; 1703-N Office Building Septic Tank; HGP SWMU #9 **Reclassification:** Interim Closed Out (6/15/2004)
Type: Septic Tank **Start Date:** 1/1/1965
Status: Inactive **End Date:** 1/1/1987
Description: The site has been remediated and interim closed out.
Location: The septic tank was located approximately 20 meters (66 feet) north of the 1703-N building, inside the Hanford Generating Plant (HGP) facility fence.
Process Description: The site received effluent from the 1703-N office building. The unit surface was a 3.0 meter (10 foot) by 3.0 meter (10 foot) square area of gravel with a 15-centimeter (6-inch) capped pipe at the center.

Related Sites/ Structures: 185-N Building, 1703-N Building

Waste Type: Sanitary Sewage
Waste Description:

Code: 100-N-46 **Classification:** Accepted
Names: 100-N-46; HGP Diesel Oil Storage Tank **Reclassification:** Interim Closed Out (6/15/2004)

Status: Inactive **End Date:** 1/1/1986

Description: The site has been remediated and interim closed out.

Location: The 100-N-50 Turbine Oil Filter Unit (SWMU #4) was located in the 185-N Building basement along the northeast and southeast walls.

Release Description: No releases are known to have occurred from this unit.

Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were located in the 185-N Building. The filter unit was used to clean turbine oil located in the basement of the Hanford Generating Plant (HGP) Building. It was surrounded by a concrete berm.

Related Sites/ Structures: 100-N-51 HGP Building Oil Storage Area

Waste Type: Oil

Waste Description: The filters were periodically changed, but no information was available on the location of their disposal. This unit likely managed impurities in the turbine oil such as metals.

Code: 100-N-51 **Classification:** Accepted

Names: 100-N-51; 100-N-51A; HGP Building Oil Storage Area; HGP SWMU #2 **Reclassification:** Interim Closed Out (6/15/2004)

Type: Storage **Start Date:** 1/1/1966

Status: Inactive **End Date:**

Description: The site has been remediated and interim closed out. The site consisted of a cinder block room with a fire sprinkler system, steel grate floor, and shelving along the walls. Drums and smaller containers of product (petroleum, oil, and lubricants) were stored on the floor and shelving. A blind concrete sump (no outlet) was located below the grated floor.

Location: Located in the 185-N Building basement along the northwest basement wall.

Release Description: No releases are known to have occurred. Stains on the grate and sump floor indicated that minor leaks from containers had been contained within the unit.

Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were formerly located in the 185-N Building.

Related Sites/ Structures: 100-N-51B HGP Building Floor Drains and Sump, and 100-N-50 Turbine Oil filter Unit, 185-N Building

Waste Type: Oil

Waste Description: Used oil and rags from maintenance activities are stored in drums inside the room.

Code: 100-N-51B **Classification:** Accepted

Names: 100-N-51B; HGP Building Floor Drains and Sumps; HGP SWMU #3 **Reclassification:** Interim Closed Out (6/15/2004)

Type: Sump
Status: Inactive
Description: The site has been remediated and interim closed out.
Location: Located in the 185-N Building basement along the northwest basement wall.
Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were formerly located in the 185-N Building.
Related Sites/ Structures: 100-N-51A, HGP Building Oil Storage Area, 100-N-50 Turbine Oil filter Unit, and the 185-N Building

Code: 100-N-52
Names: 100-N-52; HGP Gasoline Storage Tank
Type: Storage Tank
Status: Inactive
Description: The site has been remediated and interim closed out.
Location: The gasoline filling area was located outside the northern corner of 100-N-78, Hanford Generating Plant (HGP) maintenance garage.
Release Description: No releases have been documented.
Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were located in the 185-N Building. The site was an ancillary or support facility to the former HGP. The 100-N-52 (UST) site was located immediately north of the former 1716-NE Maintenance Garage and was used for the storage and dispensing of gasoline for maintenance vehicles.
Related Sites/ Structures: A second tank, next to the existing one, was removed in October 1989 after 24 years of service. 100-N-78 Maintenance Garage

Waste Type: Storage Tank
Waste Description:

Code: 100-N-53
Names: 100-N-53; 181-N Building Waste Oil Tank
Type: Storage Tank
Status: Inactive
Description: The site was an empty above-ground waste oil tank. The tank is 1.1 meters (3.5 feet) in diameter and 1.2 meters (4.1 feet) high. A site visit in July 1999 found that the tank has been removed.
Location: The site is located in the 100-N Area, 18 meters (60 feet) east of the 181-N Pumphouse.
Process Description: The site received waste oil from diesel powered emergency pumps in the 181-N Building.

Related Sites/ Structures: The 181-N Building is associated with this site.

Waste Type: Oil
Waste Description: The tank has been removed.

Code: 100-N-54 **Classification:** Accepted
Names: 100-N-54; 151-N Building Drywell; Miscellaneous Stream #727 **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1964
Status: Inactive **End Date:** 1/1/1997

Description: The site is a french drain, made of 1.2 meter (4 foot) inner diameter and 1.65 meter (5 foot 5 inch) outer diameter concrete pipe, with a steel cover.

Location: The site is located in the 100-N Area, just off the south wall of the 151-N Building.

Related Sites/ Structures: This site drains a sink in the 151-N Building, which is the Area Electrical Switchgear Building. It is 215 square meters (2,310 square feet), and takes 230 kilovolts down to 13.8 kilovolts.

Waste Type: Water
Waste Description: The site received waste water from the service sink located inside the 151-N building.

Code: 100-N-55 **Classification:** Accepted
Names: 100-N-55; 153-N Building Drywell; Miscellaneous Stream #728 **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:** 1/1/1997

Description: The site is a french drain with a 1.2-meter (4-foot) steel cover. Four yellow steel posts surround the site, located in a graveled roadway.

Location: The site is located in the 100-N Area, just off the northeast corner of the 153-N Building.

Process Description: The drywell receives steam condensate from a condensate pump and drainage from a service sink in the 153-N Building. The 153-N Building is the switchgear building, which is 215 square meters (2,310 square feet) large, and contains a transformer/ substation taking 13.8 kilovolts down to 4160 volts.

Related Sites/ Structures: The 153-N Building is associated with this waste site.

Waste Type: Steam Condensate
Waste Description: The site receives steam condensate from a condensate pump and drainage from a service sink inside the 153-N Building.

Code: 100-N-57 **Classification:** Accepted
Names: 100-N-57; 1304-N Emergency Dump Tank **Reclassification:** None

Type:	Catch Tank	Start Date:	1/1/1970
Status:	Inactive	End Date:	1/1/1988
Description:	The site consists of a 500,000 gallon above-ground storage tank with a dome-shaped top.		
Location:	The site is located in the 100-N Area, between the 105-N Building and the Columbia River and between the 1908-N Sealwell and the 107-N Building.		
Release Description:	Four unplanned releases of N-Reactor primary coolant water have occurred from the 1304-N EDT caused by leaking valves associated with the tank and one tank overflow.		
Process Description:	The 1304-N Emergency Dump Tank is a 4.9E+06-liter (1.3E+06-gallon) steel, above-ground storage tank. The tank is constructed of steel and insulated with asbestos and fiberglass under aluminum sheeting. It replaced the 1300-N Emergency Dump Basin as the storage facility used for emergency blowdown of thermally hot pressurized reactor primary coolant water. The tank maintained a constant volume of 2.6E+06 liters (6.8E+05 gallons) of unheated water for quenching the hot water to prevent it from flashing to steam. Because a small flow of primary coolant was maintained to the 1304-N Emergency Dump Tank to keep interconnecting piping in a thermally warm condition, the quench water normally contained a small inventory of radioactive materials.		
Related Sites/ Structures:	The 105-N Building, 1325-N Crib, and 102 Inch Outfall Discharge are related to this site. The site is associated with UPR-100-N-30.		
Waste Type:	Misc. Trash and Debris		
Waste Description:	Between March 14, 1995 and September 29, 1995 approximately 5,300 liters (1,400 gallons) of water, 230 liters (60 gallons) of sand, and 165 bags of debris were removed from the tank. The sectioned piping was left inside the tank and will be removed and disposed of during the subsequent final decontamination and demolition of the tank. Results from Ion Chromatography/Inductively Coupled Plasma analysis at the 222-S Laboratory detected levels of lead and chromium content classified the waste as mixed.		

Code:	100-N-58	Classification:	Accepted
Names:	100-N-58; 120-N South Settling Pond; 1324-N South Settling Pond; South Pond	Reclassification:	Closed Out (3/28/2002)
Type:	Pond	Start Date:	1/1/1977
Status:	Inactive	End Date:	1/1/1982
Description:	The site has been remediated and closed out.		
Location:	The 100-N-58 site was co-located with 120-N-1, 120-N-2 sites in the 100-N Area in the 100-NR-1 Operable Unit of the Hanford Site in southeastern Washington State. These sites are about 100 m (328 ft) southeast of the 163-N Demineralization Plant Building, and are approximately 400 m (1,312 ft) from the Columbia River		
Process Description:	In 1977 the 120-N-1, 120-N-2, and 100-N-58 sites were initially constructed as the East Percolation Pond and North and South Settling Ponds, respectively. These unlined ponds received 163-N anion/cation regeneration effluent as well as the 183-N Filtered Water Plant filter backwash effluent. In 1982, because of pond percolation problems, the 183-N filter backwash was rerouted to an effluent disposal pond (130-N-1). During this time period the 100-N-58 site was backfilled.		
Related Sites/ Structures:	The 163-N Building, 183-N Building, 120-N-2 (1324-N) Surface Impoundment, and 120-N-1		

(1324-NA) Percolation Pond are associated with this site.

- Waste Type:** Process Effluent
- Waste Description:** The 1324N South Settling Pond received regeneration wastes containing aluminum sulfate, sulfuric acid, sodium hydroxide solutions and cooling water from the 163-N Building and filter backwash water from the 183-N Building.
- Closure Info:** 120-N-1, 120-N-2 and 100-N-58 were addressed as a group. The information below documents information for the group of sites.

The site was remediated in September/October 2000.

Closure performance standards were established by the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These performance standards are documented in the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (CMS/CP) (DOE-RL-90-22) and the Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units (RDR/RAWP) (DOE/RL-2000-16). Permit conditions were established in the Hanford Facility Dangerous Waste Permit (Ecology 1994). While sites 120-N-1, 120-N-2, and 100-N-58 are not included in a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) record of decision (ROD) corrective action activities have been documented in CVP-2001-00021 (CVP).

The soil investigation conducted at these sites in 1992 and 1993 for the CMS/CP indicated that the site did not require soil remediation. Therefore, the selected remedial/corrective action included the removal and disposal of the miscellaneous site structures, including the 120-N-2 liner system, a small sampling shed, fencing, and other miscellaneous debris. The CMS/CP soil investigation indicated that there generally are no contaminants of concern (COCs) for these waste sites. However, because a former overflow area and the waste site influent pipelines required additional sampling (as specified by the CMS/CP), these sites were included in the Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout (SAP) (DOE-RL-2000-07). The verification samples collected under the sampling and analysis plan were analyzed for generally the same inorganic metals and wet chemical anions listed in the CMS/CP soil investigation. The samples were also analyzed for pH. The analytical results from the additional soil sampling and the pipeline scale sampling are presented in Appendix A of the CVP. The analytical results of the soil samples are consistent with the findings of the CMS/CP: soil concentrations are at or below Hanford Site or Washington State background concentrations.

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|---|---------------------------------|
| Code: 100-N-59 | Classification: Accepted |
| Names: 100-N-59; Radioactively Contaminated Soil
Northeast of 105-NB Building | Reclassification: None |
| Type: Unplanned Release | Start Date: 1/1/1995 |
| Status: Inactive | End Date: |
| Description: The site was a broken, contaminated, underground pipeline. After excavating and repairing the broken pipe, the site was marked with a single Underground Radioactive Material sign. A site visit in August 2000 found that the single post with the Underground Radioactive Material sign was gone, but an Underground Radioactive Material sign was attached to the fence near the waste site. | |
| Location: The site is located northeast of the 105-NB Building, inside the double fence. | |
| Release Description: In September 1995, a 15 centimeter (6 inch) diameter underground liquid wasteline was found to be leaking. An area approximately 0.76 meters (2.5 feet) by 1.4 meters (4.5 feet) was | |
-

excavated to repair the pipe. The soil below the pipe had a beta/gamma reading of 7,000 disintegrations per minute. A direct reading on the broken pipe found 35,000 disintegrations per minute. After repairing the pipe, the excavation was backfilled with clean dirt and posted with an Underground Radioactive Material sign.

Process Description: The soil was radioactively contaminated when a liquid waste line from the 109-N facility broke.

Related Sites/ Structures: The site is associated with an underground waste line from the 105-N/109-N facility.

Waste Type: Soil

Waste Description: The soil was radioactively contaminated when a liquid waste line broke.

Code: 100-N-60

Classification: Accepted

Names: 100-N-60; 1314-N Drywell

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: Occurrence Report 73-39 mentions a release of decontamination solutions that overflowed from a catch basin to an adjacent drywell. The drywell was not included in the WIDS database. A field investigation done in 1996 failed to visually locate the drywell as discussed in the referenced occurrence report. The area within the shielding walls of the 1314-N Facility was inspected in addition to the interior of the 1314-N Building from the two doors on the west side of 1314-N. A partially buried catch tank was observed inside the 1314-N Building. It is suspected that the area surrounding the catch tank may have been referred to as the drywell. Drawing H-1-37675, Detail D, shows a 5 centimeter (2 inch) underground drain pipe to a "drywell". It is possible the drywell exists, but cannot be visually verified.

Location: The site is suspected to be located underneath the 1314-N Building, in the southwest corner of the building in the vicinity of the catch tank.

Release Description: 100-N Plant Operations personnel were filling a railroad waste tank car with spent decontamination solutions at a the 1314-N Loading Station. After approximately 26,500 liters (7,000 gallons) of solution had been pumped into the 75,700-liter (20,000-gallon) waste tank car, solution began overflowing from the tank car fittings. The tank car loading pump was turned off, then solution began flowing up through the drain in the catch basin beneath the car. The catch basin filled and overflowed into the adjacent drywell which also filled and overflowed. Approximately 380 liters (100 gallons) of solution flowed out of the drywell, covering a 6 by 6-meter (20 by 20-foot) section of ground inside the Radiation Zone at the loading station. The solution that spilled out of the drywell onto the ground was contained with trenches and earthen dams, then covered with plastic to prevent contamination spread. The solution contained in the catch basin was hosed down to remove loose contamination. Inspection of the loading and vent lines on the top of the waste tank car revealed that a manual valve on the vent line was in the closed position resulting in a pressure buildup in the tank car that caused backflow through the loading line, holding tank, and catch basin. Evaluation revealed that about 280 liters (75 gallons) of solution containing a total of 0.011 curies was discharged to the ground (sub surface) through the drywell.

Process Description: The drywell received overflow from the catch tank. Note that the feature that is mapped is the catch tank.

Related Sites/ The 1314-N Loading Station and UPR-100-N-13 are associated with this waste site

Related Sites/**Structures:****Waste Type:** Chemicals**Waste** The site received spent decontamination solutions from a railroad waste tank car.**Description:****Code:** 100-N-61 **Classification:** Accepted**Names:** 100-N-61; 100-N Water Treatment and Storage Facilities Underground Pipelines **Reclassification:** None**Type:** Process Sewer **Start Date:** 1/1/1963**Status:** Inactive **End Date:** 1/1/1987**Description:** The site encompasses all underground water pipelines used to transport reactor cooling water between water treatment facilities and the 105-N Reactor Building. These include all underground lines running between buildings and those that run to drainage facilities. Pipelines within buildings and all pipelines that are downstream from the reactor building, i.e., those lines that carry cooling water from the reactor to effluent disposal facilities such as the dump tank and cribs are excluded.

The site has been subdivided into four subsites: 100-N-61:1 Water Treatment and Storage Facilities Underground Pipelines South of 109-N, 100-N-61:2 Water Treatment and Storage Facilities Underground Pipelines East of 109-N, 100-N-61:3 Water Treatment and Storage Facilities Underground Pipelines West of 109-N and 100-N-61:4 Water Treatment and Storage Facilities Underground Pipelines South of 182-N.

Location: The site is located where the underground pipelines run from the 181-N River Pump House to the 163-N Water Treatment Plant, the 182-N Pump House and Storage Tanks, and to the 105-N Reactor Building. Also, any underground drainage pipelines running from the water treatment and storage facilities to the riverside outfall structures. Other underground pipelines running to the outfall structures are included in other waste sites and are therefore excluded from this site.**Process Description:** Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, then injected into the reactor primary coolant loop at a rate of about 760 liters/minute (200 gallons/minute).**Related Sites/Structures:** Associated structures include the 181-N River Pump House, the 182-N Pump House, the 163-N Water Treatment Plant, and the 105-N Reactor Building.**Waste Type:** Water**Waste Description:** The waste is steel piping, concrete, and soil (if contaminants are present). Chemical additives to the reactor cooling water included sulfuric acid, sodium hydroxide, aluminum sulfate (alum) with excess hydrated calcium oxide, separan, chlorine, and sodium dichromate. Water pH was maintained at about 7.5, and the free chlorine residual was approximately 0.2 milligrams/liter.**Code:** 100-N-62 **Classification:** Accepted**Names:** 100-N-62; 100-N 105-N, 109-N, 163-N, 182-N, 183-N and 184-N Underground Pipelines **Reclassification:** None**Type:** Radioactive Process Sewer **Start Date:** 1/1/1963**Status:** Inactive **End Date:** 1/1/1987**Description:** This site includes those underground pipelines that transported reactor decontamination chemicals and/or radioactive liquid wastes from the 105-N/109-N Reactor facilities, and other pipelines that have the potential for radioactive contamination that are co-located on the east

side of the 105-N/109-N Building complex. It does not include the pipelines that discharge to the 116-N-4 (1300-N), the 1304-N Emergency Dump Tank, pipelines to and from the 107-N and 105-N Buildings, or pipelines from the 105-N/109-N Buildings to the 1908-N Outfall that are addressed by a separate Waste Information Data System (WIDS) entry (100-N-65) for 100-N Reactor 105-N/109-N Cooling Water Effluent Underground Pipelines. Generally these lines leave the 105-N/109-N Buildings on the east side, and proceed in a north-south direction and east-west direction adjacent to the 105-N/109-N Building complex and to their respective treatment/disposal facilities. These pipelines consist of potentially contaminated underground steam and condensate return pipelines including a 0.18-meter (6-inch) decontamination return pipeline, a 0.18-meter (6-inch) radioactive drain, 0.36-meter (14-inch) miscellaneous chemical drains, a 0.61-meter (24-inch) backwash return pipeline, 0.05-meter (2-inch) and 0.08-meter (3-inch) chemical drain pipelines, and 0.08-meter (3-inch) radioactive vent, a 0.09 to 0.20-meter (4 to 8-inch) chemical supply pipelines (sodium hydroxide, ammonium hydroxide and phosphoric acid).

Location:	The location of this site is all of the potentially radionuclide contaminated underground pipelines leaving the 105-N/109-N Buildings on the east side (east-west direction) and proceeding in a north-south direction to their respective treatment/disposal sites.
Process Description:	Water was taken from the Columbia River and treated extensively to purify it prior to its use as reactor cooling water. In the reactor, the water circulated through the reactor core where it carried away heat to maintain safe core temperatures. This heat was transferred to a secondary system via heat exchangers from which the water returned to the reactor core in a closed loop. The secondary cooling system, also a "closed loop" system, could be maintained in a hot pressurized state from the 184-N Powerhouse when the reactor was down for maintenance or other reasons. Because of this interconnection between the auxiliary steam supply system and the contaminated secondary cooling system, the potential for cross-contamination exists. However, the auxiliary steam supply system was isolated by the use of motor operated valves and a "flow control" mode of operation that precluded back pressure contamination of the auxiliary steam system from the secondary cooling system.
Related Sites/ Structures:	The related structures are the 105-N Reactor Building, the 109-N Heat Exchange Building, the 184-N Powerhouse, the 100-N-23 and the 100-N-24 waste sites.
Waste Type:	Process Effluent
Waste Description:	The waste is the underground pipelines from the east side of the 105-N and 109-N Buildings to the 184-N Powerhouse, 100-N-23 (Resin Disposal Pit Liquid Waste Site 1) and 100-N-24 (Hydrogen Dry Well Liquid Waste Site) waste sites. The chemical drain lines are known to have been used for the disposal of decontamination chemicals, however, specific chemicals and radionuclide content is currently unknown.

Code:	100-N-63	Classification:	Accepted
Names:	100-N-63; 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines	Reclassification:	None
Type:	Radioactive Process Sewer	Start Date:	1/1/1963
Status:	Inactive	End Date:	1/1/1987
Description:	The site encompassed the Treatment, Storage, and Disposal (TSD) underground pipelines that transported reactor cooling water and radioactive liquid wastes from the 105-N Reactor facilities to the 116-N-1 (1301-N), 116-N-3 (1325-N) Crib, and 116-N-2 (1310-N Tank). Not included in the site are underground pipelines that discharged to the 116-N-4 (1300-N Emergency Dump Basin), 1304-N Emergency Dump Tank, pipelines to and from the 107-N and 105-N Buildings, or pipelines from the 105/109-N Buildings to the 1908-N Outfall that are addressed by 100-N-64 (100-N Reactor 105/109-N Cooling Water Effluent Underground		

Pipelines). Generally, the pipelines in site 100-N-63 leave the 105-N, 109-N and 1714-NB Buildings on the east, west and north sides, and proceed north-northeast to their respective treatment/disposal facilities. Pipeline sizes beyond the 1322-N Building vary. A 30.5-centimeter (12-inch) radioactive drain originates on the west side of the 109-N Building as a 25.4-centimeter (10-inch) pipeline, it extends north where a 30.5-centimeter (12 inch) disposal system pipeline connects at a point east of the number 3 spacer silo. It proceeds north to a point just east of the 1314-N Building then proceeds east to the 1322-N Building. There it can be diverted south to either the 116-N-2 (1310-N Golfball) via the 1310-N transfer tank or north turning eastward near the 1322-NC building to the 116-N-1 weir box. From the 1310-N transfer tank (silo) the pipelines continue to the 1310-N Golfball. A third 30.5-centimeter (12 inch) chemical drain pipeline returns from 116-N-2 (Golfball) to the 1310-N transfer tank. From the 116-N-1 weir box a 91.4 centimeter (36 inch) underground pipeline (see subsite 100-N-63:1) connects 116-N-1 to the 1312-N diversion box continuing to the 116-N-3 crib and trench. The final line, a 91.4-centimeter (36-inch) contaminated drain/flush pipeline, originates on the west side of the 105-N Building where it passes under the 1722-N building and continues in a parallel path with the previously discussed 30.5-centimeters (12-inch) radioactive drain pipeline.

Location:	The location of the underground reactor effluent lines is between the 105-N Reactor Buildings and 1314-N, 116-N-1, and 116-N-3.
Release Description:	A diesel fuel spill occurred on 1/10/10 at the 100-N BioVenting Pilot Test Site at the 100-N Area. Approximately 330 gallons of diesel fuel were released due to an improper connection of the generator to a 1,000 gallon auxiliary fuel tank supporting the project. Spill cleanup activities on 1/10/10 generated over 310 tons of contaminated soil that were removed and disposed at ERDF. The area of the spill was almost entirely contained within the 100-N-63:2 pipeline WIDS boundary west of the 1310-N Radioactive and Liquid Waste Treatment Facility (Golf Ball). Agreement with the Washington State Department of Ecology on 2/4/10 determined that further cleanup actions at the site were not necessary at this time as long as the remediation design for the affected portion of the 100-N-63:2 pipeline was revised to encompass the entire area that was affected by the spill. Contractor remediation activities at 100-N are scheduled to begin in July 2010 and remediation of this portion of the waste site is anticipated to occur in late 2010. In addition, an update to the WIDS database was requested, documenting the location, including GPS, of the area impacted by the spill. GPS locations and a map of the spill location have been included in the WIDS database for the 100-N-63:2.
Process Description:	Water was taken from the Columbia River and treated extensively to purify it before its use as reactor cooling water. In the reactor, the water circulated through the reactor core where it carried away heat to maintain the core temperature at a safe level. This heat was yielded in a heat exchanger from which the water returned to the core in a closed loop. A small quantity of cooling water was bled off (about 760 liters/minute [200 gallons/minute]) and was replaced with fresh water from the water treatment plant. The bleed-off water and liquid wastes from other sources including decontamination stations and radioactive drains was transported to either the crib disposal system or to a storage and transportation system for disposal.
Related Sites/ Structures:	The associated structures include: the 105-N Reactor Building, the 116-N-1 and 116-N-3 Cribs and Trenches, the 1322-N Monitoring and Pilot Plant Complex, the 1314-N Waste Transfer Station, and various valve stations, UPR-100-N-31, Radioactive Effluent Water Spill Near 116-N-1 (1301-N), UN-100-N-31.
Waste Type:	Process Effluent
Waste Description:	The waste is the contaminated underground pipelines. The following radionuclides were released from the reactor to the 116-N-1 and/or 116-N-3 Cribs and Trenches, passing through the underground pipelines. Residual contaminants of some radionuclides may be expected to remain in the underground pipelines. These include: tritium, zinc-65, iodine-131, plutonium-238, phosphorous-32, strontium-89/90, xenon-133, plutonium-239/240, chromium-51,

zirconium-niobium-95, cesium-134/137, neptunium-239, manganese-54, molybdenum-technetium-99, barium-140, iron-59, ruthenium-103/106, cerium-141, cobalt-58/60, antimony-124/125, and cerium-praseodymium-144. Additionally, decontamination chemicals are known to have passed through the underground pipelines, including phosphoric acid and diethylthiourea

This Site has the Following SubSites:

Code: 100-N-63:1

Names: 100-N-63:1; Pipeline Section from 116-N-1 to 116-N-3 Crib Including Concrete Encased Pipe Bypass Structure

Code: 100-N-63:2

Names: 100-N-63:2; Pipelines Between 109N, 105N, 107N, 1310N, 1322N, 1926N And 36" Process Drain to Outfall

Code: 100-N-63:1

Classification: Accepted

Names: 100-N-63:1; Pipeline Section from 116-N-1 to 116-N-3 Crib Including Concrete Encased Pipe Bypass Structure

Reclassification: Interim Closed Out (12/23/2002)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The western portion of this pipeline was located between 116-N-1 and the 1312-N Diversion Box. The effluent flowed through a 448-meter (1,468-foot) long by 0.9-meter (Diameter Nominal [DN] 900) (36-inch) diameter pipeline. Two pipelines continued on from the 1312-N Diversion Box to the north then eastward to the southwest end of the crib. One of the pipelines was a pipe encased concrete by-pass structure that ran parallel to the original. The by-pass structure was built at the same time as the 1312-N Retention Basin (also known as the 1312-N LERF), however, neither was put into service.

Location: These pipelines are in the northern part of the 100-N Area, between the 116-N-1 and 116-N-3 cribs.

Waste Type: Not Specified

Waste Description: The waste is the contaminated underground pipelines.

Closure Info: 116-N-3 and 100-N-63:1 were addressed as a group. The information below documents information for the group of sites.

This portion of the pipeline 100-N-63:1, approximately 66 meters (216.54 feet) west of 1213-N Diversion Box continuing to the southwest end of the 116-N-3 Crib, has been remediated and closed-out in CVP-2002-00002. For purposes of the CVP/closure report and consistent with the permitted TSD site designation, the 116-N-3 Crib and Trench, the 100-N-63:1 Pipeline, and the bypass structure are collectively referred to as the 116-N-3 site.

Cleanup Verification samples, including QA/QC samples were collected and analyzed for the established contaminants of concern. Shallow zone and deep zone samples were collected between August 24, 2001 and April 8, 2002 and may be viewed on the HEIS database under SAF number B01-090.

The SubSite is Part Of:

Code: 100-N-63

Names: 100-N-63; 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines

Code: 100-N-63:2 **Classification:** Accepted

Names: 100-N-63:2; Pipelines Between 109N, 105N, 107N, 1310N, 1322N, 1926N And 36" Process Drain to Outfall **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The 100-N-63:2 subsite encompasses the Treatment, Storage, and Disposal (TSD) underground pipelines that transported reactor cooling water, radioactive and chemical liquid wastes from the 105-N Reactor facilities to the 116-N-1 (1301-N) Crib. The pipelines originated on the north, east and west sides of the 105-N Reactor Building and ran to either the 116-N-1 Crib or the 100-N-77 effluent pipeline. It also includes the 91.4 cm (36 in) process drain that emptied into the 100N River Effluent Pipeline (100-N-77).

The 100-N-63:2 waste site pipelines are located through out the 100-N Area and are collocated with a number of other pipeline waste sites including but not limited to the 100-N-84, 100-N Miscellaneous Pipelines waste site. During remediation of the 100-N-63:2 waste site collocated waste sites may be partially or fully remediated.

A diesel fuel spill occurred on 1/10/10 at the 100-N BioVenting Pilot Test Site at the 100-N Area. Approximately 330 gallons of diesel fuel were released due to an improper connection of the generator to a 1,000 gallon auxiliary fuel tank supporting the project. See the Release Description field for detailed information.

Location: The 100-N-63:2 waste site pipelines are located through out the 100-N Area and are collocated with a number of other pipeline waste sites including but not limited to the 100-N-84, 100-N Miscellaneous Pipelines waste site. The pipelines originated on the north, east and west sides of the 105-N Reactor Building and ran to either the 116-N-1 Crib or the 100-N-77 effluent pipeline.

Waste Type: Not Specified

Waste Description: The waste is the contaminated underground pipelines.

The SubSite is Part Of:

Code: 100-N-63

Names: 100-N-63; 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines

Code: 100-N-64 **Classification:** Accepted

Names: 100-N-64; 100-N Reactor 105/109-N Cooling Water Effluent Underground Pipelines **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1987

Description: This site includes those underground pipelines that transported reactor cooling water from the 105-N Reactor facilities to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank respectively, the 107-N Filter Building and the pipelines from these facilities to the 1908-N Outfall Structure. It does not include the underground lines that discharged to the 1301-N (116-N-1) and/or 1325-N (116-N-3) Crib. (see sitecode 100-N-63). The site does include overflow lines to the 1908-N Outfall Structure, but does not include the 1908-N Outfall Structure.

The site has been subdivided into three subsites- 100-N-64:1 Cooling Water Effluent

Underground Pipelines South of 109-N, 100-N-64:2 Cooling Water Effluent Underground Pipelines East of 109-N and 100-N-64:3 Cooling Water Effluent Underground Pipelines West of 109-N.

The 107-N Building includes return pipelines as well as other process pipelines contained in a concrete encasement between the 105-N and 107-N Buildings. This encasement houses 0.26-meter (10-inch) and 0.46-meter (18-inch) demineralized water lines, a 0.3-meter (12-inch) filtered water line, 1.3-centimeter (0.5-inch) instrument air, 5.1-centimeter (2-inch) steam, 15-centimeter (6-inch) fire, line and telephone, instrument, power, and fire alarm lines. The encasement is about 30 meters (98 feet) long. (The remaining underground pipelines associated with the 1300-N and 1304-N include a 0.76-meter (30-inch) flush line, a 0.61-meter (24-inch) vent, a 0.76-meter (30-inch) overflow, a 25.4-centimeter (10-inch) blowdown, and a connection to the 25.4-centimeter (10-inch) radioactive drain line that becomes the 0.3-meter (12-inch) radioactive drain line that are not included with this waste site.)

Location: This site is the location of underground pipelines running between the 105/109-N Buildings to the 116-N-4 (1300-N), the 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building to the 1908-N Outfall Structure. The pipelines exit the 105-N Reactor Building on the west side and extend to the west to their respective treatment/disposal facilities.

Process Description: The Emergency Dump Basin (116-N-4/1300-N) and the Emergency Dump Tank (1304-N) were designed to receive "single-pass" reactor cooling water in the case of an emergency. Both systems were used to periodically receive steam blowdown. The 1304-N Tank replaced the 1300-N Basin. This steam condensate normally contained low levels of radionuclide contamination and fission products. Overflow and drain lines to the 1908-N Outfall Structure are include in this waste site. However, the outfall structure is a separate waste site.

Related Sites/ Structures: The associated structures are the 105-N and 109-N Reactor Buildings. The TSD pipelines are in site 100-N-63.

Waste Type: Process Effluent

Waste Description: The waste is the contaminated underground pipelines. The following radionuclides were released from the reactor through the underground pipelines to the 116-N-4 (1300-N), 1304-N Emergency Dump Basin and Tank, the 107-N Filter Building and to the 1908-N Outfall Structure. Residual contaminants of some may be expected to remain in the underground pipelines. These include: sodium-24, niobium-95, iodine-131, chromium-51, zirconium-95, tellurium-132, technetium-99, manganese-54, iron-59, ruthenium-103, cerium-144, and cobalt-60. Because of radioactive decay, only manganese-54, cobalt-60, and cerium-144 are expected to remain.

Code: 100-N-65 **Classification:** Accepted

Names: 100-N-65; Diesel Oil Interceptor Trench; UPR-100-N-17 Interceptor Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1966

Status: Inactive **End Date:**

Description: The site is a trench that was excavated along the Columbia River bank to intercept diesel oil before it could reach the river. The trench was excavated as a result of an unplanned release of 303,000 liters (80,000 gallons) of diesel fuel that leaked from a pipeline within 166-N Tank Farm (See UPR-100-N-17). Several smaller unplanned releases also contributed to the need for the trench (See UPR-100-N-19 and UPR-100-N-20). Oil trapped in the trench was ignited and burned. A significant portion of the oil was thus removed before it could reach the river. In 1994, the trench was backfilled with material to the top of the adjacent berm.

Location: The trench was located on the riverbank northeast of 166-N Tank Farm

Location:

Process Description: The trench was excavated along the Columbia River bank to intercept diesel oil before it could reach the river.

Related Sites/Structures: The site was related to the 166-N Tank Farm, the Fuel Oil Unloading Trench, and the Fuel Oil Day Tanks (184-N Powerhouse).

Waste Type: Oil
Waste Description: The waste was diesel oil from spills in the 100-N Area diesel oil storage facilities.

Code: 100-N-67	Classification: Accepted
Names: 100-N-67; HGP Dumping Area	Reclassification: No Action (9/11/2000)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:

Description: The site is a pile of metal banding material, barbed wire, wire rope, concrete, and pipe. Some of the materials are partially buried.

Location: The site is located approximately 250 meters (820 feet) west of the Bonneville Power Administration (BPA) substation and Hanford Generating Plant facility fence. It is between the facility fence and the Columbia River. It is directly under the western BPA powerlines that cross the Columbia River.

Process Description: The waste appears to have been generated from the construction of the Bonneville Power Administration (BPA) powerlines.

Waste Type: Construction Debris
Waste Description: The site contains metal banding material, barbed wire, pipe, and concrete.

Code: 100-N-68	Classification: Accepted
Names: 100-N-68; N Basin Low Level Radioactive Water Spill	Reclassification: None
Type: Unplanned Release	Start Date: 1/7/1998
Status: Inactive	End Date: 2/20/1998

Description: The site has been posted with contaminated area signs and the contamination was temporarily stabilized with a fixative, tarps and plywood. Later it was stabilized with asphalt.

Location: The site is located just outside the N Basin Transfer area of the 105-N Building.

Release Description: On January 7, 1998, at approximately 0810 hours, a Bechtel Hanford, Inc. (BHI) Decontamination and Decommissioning (D&D) worker in the 105-N Basin discovered water spraying from a hose connected to the Final Transfer Filtration (FTF) system. The FTF is used to remove particulates from the basin water to increase water clarity. The D&D worker immediately shut off the FTF system and notified management. An investigation was initiated to determine the cause of the incident and amount of water displaced. The investigation determined the intake hose to the FTF system had split sometime between 2:00-4:00 am, causing contaminated water from the basin to be released to the floor. The estimated amount of water released from the basin is approximately 1.36E+05 liters (36,000 gallons). The basin drains captured most of the water, however an estimated 7,600 liters (2,000 gallons)

leaked under a set of roll-up doors and out of the building. This water spread onto the ground outside the 105-N Building, pooling on concrete and gravel surfaces (mostly in an area 6 by 9 meters [20 by 30 feet]). At approximately 0800 hours, two BHI drivers walked along the exterior wall of the 105-N Building toward an air compressor. Both individuals walked through several water puddles on the way. Because of heavy rains the night before, the drivers did not think the puddles were unusual. Upon discovery of the basin incident workers believed water may have leaked out the roll-up doors. The drivers, located in the suspected contaminated area, were surveyed and found to have 30,000 disintegrations/minute beta/gamma, per probe area, contamination on their boots. Three areas, totaling approximately 280 square meters (3,000 square feet), were discovered to be contaminated. This includes the contamination from this event and previous underground contamination. Using current analytical data on the N Basin water, the total curies released in the spill/leak for all of the radionuclides was calculated to be 0.42 curies. No reportable quantities were exceeded. The primary radionuclides in the water are tritium (approximately 0.26 curies), strontium-90 (approximately 0.06 curies), and cesium-137 (approximately 0.013 curies). The calculated amount of N Basin water released to the environment, was 7,380 liters (1,950 gallons), which was used in the calculations and is believed to be conservative. This is because no adjustments were made for water absorbed during cleanup activities, evaporation, or for residual water that would be in the piping between the N Basin floor drains and the Lift Station (where the bulk of the water was collected). Additionally, the extent of contamination found outside the basin appears to substantiate the calculated amount. Much of the area is paved and a larger amount of water would have migrated much further from the facility.

Process Description: The filtration system at the 100-N Fuel Storage Basin (FSB) experienced a leak through a split hose of about 36,000 gallons of radioactively contaminated water on the morning of January 7, 1998. Approximately 2,000 gallons flowed outside the FSB enclosure. The final transfer filtration system was used to reduce the turbidity of the FSB water while decontamination and decommissioning (D&D) workers recovered items from the basin.

Waste Type: Water

Waste Description: Using current analytical data on the N Basin water, the total curies released in the spill/leak for all of the radionuclides was calculated to be 0.42 curies. No reportable quantities were exceeded.

Code: 100-N-77 **Classification:** Accepted

Names: 100-N-77; River Line from 1908-N Outfall; 100N River Effluent Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of a 260 centimeter (102 inch) pipeline that exits the northwest face of the Outfall (1908-N) to the Columbia River.

Location: The river line is located in the Columbia River, adjacent to the 100N area. The line extends into the main channel of the river from the 1908-N Outfall. The 100-N-77 river effluent pipeline originates from, and is perpendicular to, the face of the 1908-N outfall structure. The pipeline extends 118 meters (386 feet) from the outfall face before turning 30 degrees upstream, and continuing for another 148 meters (485 feet) to its discharge point in the Columbia River.

Release Description: On April 18, 1986, there was a 70-minute undocumented liquid unplanned release to the river of wastewater that was beyond the pH limits allowed by the NPDES permit. The pH of the 163-N demineralization plant wastewater was permitted between 6 and 9. For about 60 minutes it was released to the river at a pH below 6, and for an additional 10 minutes at a pH above 9.

The total volume released was not known.

Process Description: The river effluent pipeline received more than 2 million cubic meters per day of single pass raw river water from the Circulating Raw Water (CRW) System, and discharged it to the river. The CRW supplied once-through untreated river water to 16 dump condensers and 7 surface condensers. The water was used to cool the secondary cooling water for the N Reactor from the 1908-N Seal well (1908-N Outfall) and discharged it to the Columbia River.

Related Sites/ Structures: The site is associated with the 1908-N outfall (1908-N), an emergency outfall flume (100-N-79) and the 1300-N Emergency Dump Basin 76-centimeter (30 inch) overflow line.

Waste Type: Process Effluent

Waste Description: The waste includes the pipeline and the potentially contaminated scale and sediment contained within it.

Code: 100-N-78

Classification: Accepted

Names: 100-N-78; 1716-NE Maintenance Garage; HGP SWMU #8

Reclassification: Interim Closed Out (6/15/2004)

Type: Maintenance Shop

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out.

Location: The 1716-NE Maintenance Garage (SWMU #8) was located to the east of the former 185-N Building.

Process Description: The former HGP consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. The generators were located in the 185-N Building. The site was an ancillary or support facility to the former HGP. The 1716-NE Maintenance Garage was used for vehicle maintenance. The garage had three vehicle bays with each containing a floor drain that led to the 100-N-3 Maintenance Garage French Drain (SWMU #9).

Related Sites/ Structures: 100-N-52 Gasoline Storage Tank (UST)

Code: 100-N-80

Classification: Accepted

Names: 100-N-80; River Line from 1908-NE Outfall

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This site includes one, 335-centimeters (132 inches) (2 centimeter (0.75 inch) wall thickness) steel pipeline, extending from the face of the 1908-NE Outfall into the main channel of the Columbia River.

Location: The 1908-NE Outfall is located in the 100-N Area, approximately 61 meters (200 feet) downstream of the 181-NE River Pumphouse on the Columbia River at river mile 379.6. The 100-N-80 river effluent pipeline extends from, and is perpendicular to, the face of the 1908-NE outfall structure. The pipeline extends 313 meters (1,028 feet) from the outfall face to its discharge point in the Columbia River.

Process The river effluent pipeline received single pass raw river water which had passed through the

Description: Hanford Generating Plant (HGP) condensers, as well as waste water from the 100-N-1 Settling Basin. The pipeline contains seven, 20 centimeter (8 inch) vents along its length, and discharges to the river via four, 3.4 meter (11 feet) outlets. The pipeline is buried along its entire length to a depth of at least 1.2 meters (4 feet) with soil, gravel, and riprap.

Related Sites/ Structures: The site is associated with the 1908-NE Outfall and the 100-N-1 Settling Pond

Waste Type: Process Effluent

Waste Description: The waste includes the pipeline and the potentially contaminated scale and sediment contained within it.

The contaminants of concern include cobalt-60, cesium-137, and petroleum hydrocarbons (diesel and heavy oil range hydrocarbons).

Code: 100-N-81

Classification: Accepted

Names: 100-N-81; 100-N Kaiser Shops Garnet Sandblasting Material

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of garnet sand and any underlying contaminated soil surrounding the former 1517-N Paint Shop. The garnet sand is purple and covers an area approximately 690 square yards (577 square meters).

Location: The waste site is located at the 1517-N Paint Shop in the Kaiser Shop Area. The Paint Shop was located about 300 Description: m (1,000 feet) east of the N Reactor facility

Process Description: The 1517-N Paint Shop was constructed in 1982 (HW-5000, 4/30/1982). It was originally operated by the J.A. Jones Construction Services Company. Kaiser Engineering Hanford (KEH) assumed responsibility for the Paint Shop in 1987 (HW-5000, 6/16/1987). Respiratory protection equipment was stored in part of the building at some point during its operation (CCN 125281). The paint shop was used to store supplies for the craft services painters. Materials needed for various outside jobs are taken from the shop to the job site only in quantities equal to the amount needed for that job or day's work. Unused materials are returned to the shop at the end of each day (WHC-SP-0460). Paint, solvents, and oils were used at the Paint Shop. There were two waste accumulation areas, one for waste paint and the other for waste oil (DOE/RL-90-22). There was also an associated sandblasting area. An air compressor located east of the paint shop leaked nonhazardous lubrication oil over the years; the surrounding soil is oil-stained. The extent of contamination is unknown. Six drums of contaminated soil were removed (DOE/RL-90-22). The 1517-N building was demolished in January 2006. Prior to demolition, the extent of the discarded sandblasting grit (garnet sand) was mapped using a global positioning system (GPS). The mapped area in conjunction with a 2004 aerial photograph (04080084-57cn) was used to establish the waste site boundary. The garnet material was stockpiled into the northeast corner of the Kaiser Shop Area in order to prevent its spread during demolition activities (CCN 126707). This stockpiled material falls within the waste site boundary.

Related Sites/ Structures: The garnet sandblasting operations were likely in support of the 1517N Fixed Metal Paint Shop mission.

Waste Type: Soil

Waste Description: The waste is a red colored granular material. In 2005 a grab sample of the sandblasting waste

Description:

material was analyzed for metals (J10VC5). The material contained chromium at a level (45.0 mg/kg) exceeding the soil cleanup level (18.5 mg/kg) for protection of groundwater and protection of the river.

Contaminants of potential concern have not been established at this time.

Code:	100-N-82	Classification:	Accepted
Names:	100-N-82; 100-N Decontamination Pad	Reclassification:	None
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site is comprised of the decontamination pad and any underlying soil contamination should it be found to exist. The decontamination pad had a reinforced (rebar) concrete slab with a center drainage trench and sump. The slab sloped toward the center trench where the water was trapped in the sump (0100N-DD-C0117). A HDPE liner cover was installed on top of the decontamination pad to prevent rainwater from entering the trench and sump area (CCN-107899).		
Location:	The decontamination pad was located approximately 245 m (804 ft) northeast of the 1120-N Building (Figure 1).		
Process Description:	The decontamination pad was constructed in 2000. It was used exclusively by 100-N vehicles and equipment performing remediation work associated with sites 116-N-1 (1301 Crib/Trench) and 116-N-3 Crib/Trench (Email02132007). When a vehicle drove onto the pad, a self-contained steam cleaner, water tank, and pump with suction and discharge hoses was used to decontaminate the vehicle. Runoff water would enter the trench and sump, and, as needed, wash water would be pumped to a tank truck for removal. The pad was covered with a liner upon demobilization to prevent rainwater from entering the trench and sump (CCN-107899).		
Related Sites/ Structures:	The site was related to 1301-N (Site: 116-N-1) and 1325-N (Site: 116-N-3).		
Waste Type:	Equipment		
Waste Description:	The waste is a contaminated concrete pad. Contaminants of potential concern (COPCs) include Co-60, Cs-134, Cs-137, Pu-238, Pu-239, H-3 and Ru-106.		

Code:	100-N-83	Classification:	Accepted
Names:	100-N-83; Two Contamination Areas Found Near 116-N-1	Reclassification:	None
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consists of two radiologically contaminated areas identified during remediation of 116-N-1 Crib and Trench. The first area is located where an uncontaminated soil stockpile was previously removed. The second area is relatively undisturbed located near and around the eastern end of the former 116-N-1 Trench.		
Location:	The two areas are located along the northeast excavation boundary of the 116-N-1 Crib and Trench. They are bound to the north and east by the security fence shown on drawing 0100N-DD-C0190.		
Waste Type:	Soil		
Waste Description:	The waste is radiologically contaminated soils. The contaminants of potential concern are		

Description: radiological contaminants.

Code: 100-N-84 **Classification:** Accepted
Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of all miscellaneous pipelines in the 100-N Area that were identified during the Orphan Site Evaluation (OSE) process and not previously tied to an existing waste site. The site includes product pipelines, service water pipelines, sewers and associated features (manholes, storm drains, valve boxes, etc.). Helium lines, electrical conduit, telephone lines, electrical grounding lines (ground), control air supply, fire alarm systems were excluded from the site. The miscellaneous pipelines supported the reactor operation and related support facilities throughout the N-Area. The process description is provided for each of the subsites in their respective writeups.

Location: The pipeline segments within the 100-N Area.

This Site has the Following SubSites:

Code: 100-N-84:1
Names: 100-N-84:1; 100-N Area Raw Water Pipelines

Code: 100-N-84:2
Names: 100-N-84:2; 100-N Area Fuel and Foam Pipelines

Code: 100-N-84:3
Names: 100-N-84:3; 100-N Area Filter and Potable Water Pipelines

Code: 100-N-84:4
Names: 100-N-84:4; 100-N Area Steam and Condensate Pipelines

Code: 100-N-84:5
Names: 100-N-84:5; 100-N Area Sanitary

Code: 100-N-84:6
Names: 100-N-84:6; 100-N Area Chemical and Process Sewer Pipelines

Code: 100-N-84:7
Names: 100-N-84:7; 100-N Area Unidentified and Other Miscellaneous Pipelines

Code: 100-N-84:8
Names: 100-N-84:8; 100-N Area Unidentified Pipelines within Planned Excavations

Code: 100-N-84:9
Names: 100-N-84:9; 100-N Area Active Raw Water Pipelines

Code: 100-N-84:1 **Classification:** Accepted
Names: 100-N-84:1; 100-N Area Raw Water Pipelines **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of the 100-N Area raw water pipelines includes: low pressure water, raw water, raw water return, raw water supply, raw water supply high and low pressure, emergency. The lines are raw water supply, sprinkler, vent, fire line, irrigation, fog, and fish line pipelines.

located throughout the 100-N Area's 100-NR-1 operable unit.

The 100-N Area raw water system was built in 1963 with additional portions added as new support buildings were constructed. Raw water was pumped from the Columbia River at the 181-N Pump House to the 185-N Hanford Generating Plant, the 109-N Heat Exchanger Building, the 182-N High-Lift Pump House, and the 184-N Power House. These large delivery pipelines are not part of the 100-N-84 waste site. The subsite includes pipelines between the 105-N Reactor Building and its supporting facilities.

The pipelines exiting the 182-N Building transferred raw water to the 105-N, 109-N, 163-N and 183-N Buildings. At the 182-N Building raw water was passed through screens before it was stored in 18.6 m (61 ft) deep independent pump suction wells for future distribution. Raw water supplied to the 109-N Heat Exchange Buildings supported the dump-condensers, graphite cooling heat exchangers turbines surface-condensers. Additionally raw water was supplied to the 182-N Building emergency raw water tank and various heat exchangers, along with the 100-N Area irrigation and fire systems. The fire system pipelines originating at the 182-N supported the 185-N Hanford Generating Plant and substation located to the south of the 105-N reactor Building and outside of the 100-N Fenced area. Raw water from the 109-N and 184-N buildings could also be returned to the Columbia river through the Sealwell.

The pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89933). This area was excavated and backfilled in 2008 through 2009. Raw water lines collocated with 105-N Reactor Treatment Storage and Disposal Underground Pipelines along the east side of the 109-N and 105-N Buildings lay within the 100-N-63 excavation footprint (H-1-89933). This area was excavated and backfilled in 2009 through 2009.

Location: The large majority of the pipelines being located in and around the 182-N High-Lift Pump House, 163 Demineralization Plan, 183-N Water Filter Plant, 184-N Power House, the 185-N Hanford Generating Plant, 109-N Heat Exchanger Building and a scattering of office buildings and trailers located to the south and south east of the 105-N Reactor Building. One additional 12-in raw water line used for temporary construction is located to in the north eastern portion of the 100-N area and connects to the export water pipeline.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:2

Classification: Accepted

Names: 100-N-84:2; 100-N Area Fuel and Foam Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite includes the fuel oil and fire suppression foam underground pipelines in the 100-N Area, located to the north west and west side of the 105-N Reactor Building.

Two fuel oil unloading, storage and transfer systems were used in the 100-N Area.

Diesel oil unloaded from rail cars at the 166-N unloading station was transferred for storage to the one of four aboveground storage tanks within the 1715-N Building. The diesel oil was then transferred through a 10.2 cm (4-in) underground supply pipeline to the 184-N Building day tank or through 5.1 cm (2-in) and 10.2 cm (4-in) underground pipelines to the three 56,781 L (15,000 gal) day tanks outside of the 182-N building. The diesel fuel from the 182-N day tanks was used to support the 182-N and 181-N diesel oil systems.

Number 6 fuel oil (also known as Bunker C fuel oil) was unloaded from rail cars at the 1900-N unloading station and transferred to the 166-N Building for storage in a 5,204,941 L (1,375,000 gal) capacity aboveground storage tank. The No. 6 fuel oil was transferred through underground pipelines from 166-N to two 184-N fuel oil day tanks.

Foam fire suppression lines to support the diesel oil tanks and pipelines are collocated with the diesel oil pipelines near the 166-N Building. The north west portions of the 100-N-84:2 pipelines are located within the 100-N-63 excavation footprint.(H-1-89933).

Location: Fuel and foam underground pipelines are located in the 100-N Area, to the north west and west side of the 105-N Reactor Building.

Waste Type: Soil

Waste Description: The waste is the pipeline (if present),scale, sediment, or liquid present within the pipelines, and the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:3 **Classification:** Accepted

Names: 100-N-84:3; 100-N Area Filter and Potable Water Pipelines **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The 100-N Area filter and potable water pipelines includes: makeup water, filter water, demineralized water, and potable water pipelines.

Location: Filtered water lines are located to the north and south of the 105-N reactor Building, while the potable water lines are located mainly to the southwest of the 105 reactor building to the 105-N support facilities.

Process Description: Raw water was supplied to 183-N Filter Plant Building for pretreatment and filtration. The 183-N filter plant supplied sanitary water to the entire 100-N Area. The plant also supplied filtered water to various buildings throughout the 100 N Area for use where treated water was not desirable or required. The term "treated water" herein refers to filtered water that had liquid alum (aluminum sulphate), separan (polyacrylamide) and liquid chlorine added during pretreatment. Demineralized water from 163-N Building was used as makeup water feed for the pretreatment system in 183-N building, while raw water was used for chemical mixing in the 182-N and 183-N Buildings prior to being added to the water. The chemical feed systems were maintained using proportional ratios with the water flow. Demineralized water was used to prevent mineral deposits what would foul pipeline systems. Chlorine was added for the control of slime and algae, and may have been used to assist in coagulation, odor and iron removal problems. Alum was used as the principle coagulant during pretreatment. 100-N-84:3 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. The north west portions of the 100-N-84:3 pipelines are located within the 100-N-63 excavation footprint (H-1-89933).

Waste Type: Soil

Waste Description: The waste is the pipeline (if present),scale, sediment, or liquid present within the pipelines, and the underlying soil.

The SubSite is Part Of:**Code:** 100-N-84**Names:** 100-N-84; 100-N 100-N Miscellaneous Pipelines**Code:** 100-N-84:4**Classification:** Accepted**Names:** 100-N-84:4; 100-N Area Steam and Condensate Pipelines**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The 100-N Area steam and condensate pipelines waste site includes steam, condensate, and injection and vacuum pump water pipelines.**Location:** The steam and condensate pipelines are concentrated around the 105-N Reactor building to support facilities and the 185-N Hanford Generating Plant.

Process Description: The N Reactor steam was used to generate electricity from 1966 to January 7, 1987. Condensate from the dump condensers was routed back to steam generators for regeneration. The main steam system was designed to distribute steam generated from generators on the roof of the 109-N Building as high, medium and low pressure steam. High pressure steam was exported through a 71 cm (28-in) pipeline to the 184-N Building to support the turbine generator and miscellaneous services. Medium pressure steam was distributed from 109-N for area heating (105-N, 182-N, 163-N, 183-N, 108-N, 1704-N, 1716-N, and 1734-N) and additional miscellaneous services. Low pressure steam was exported to the 184-N and 153-N Buildings for unit heaters and convectors. Stand-by boilers located 184-N were maintained independent of reactor operation supplying steam to the 184-N day tanks, the 166-N fuel unloading facilities and for the 109-N emergency seal water turbines. Once the steam had been utilized in each building condensate return pipelines exported the 184-N Building condenser receiver where it is recirculated deaerating heater for reuse. 109-N Building was equipped with a condensate diversion station controlling the levels in the deaerated water storage tank.

A 10" condensate emergency drain could be used to release condensate from 109N to the 0.17 m (66-in) raw water pipelines downstream of the Sealwell.

100-N-84:4 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009.

Waste Type: Soil**Waste Description:** The waste is the pipeline (if present), scale, sediment, or liquid present within the pipelines, and the underlying soil.**The SubSite is Part Of:****Code:** 100-N-84**Names:** 100-N-84; 100-N 100-N Miscellaneous Pipelines**Code:** 100-N-84:5**Classification:** Accepted**Names:** 100-N-84:5; 100-N Area Sanitary**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** Site Description: The 100-N Area sanitary pipelines includes: sanitary water and sewer, storm

drains, and disposal field pipelines.

Location: The 100-N-84:5 pipelines are located throughout the 100-N Area's 100-NR-1 operable unit.

Process Description: The 100-N Area was serviced by ten separate sewer systems consisting of one cesspool, one lagoon, one septic tank with an associated tile field, two septic tanks with seepage pits, and five septic tanks associated with drain fields. The septic tanks, pits, cesspools and lagoon are identified as the 124-N-1 through 124-N-10 waste sites. Waste sites 124-N-5, 124-N-6, 124-N-7, 124-N-8 have been reclassified as "rejected". The feed and drainage pipelines associated with these waste sites are included in 100-N-84:5.

Waste Type: Soil

Waste Description: The waste is the pipeline (if present), scale, sediment, or liquid present within the pipelines, and the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:6

Classification: Accepted

Names: 100-N-84:6; 100-N Area Chemical and Process Sewer Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Site Description: 100-N Area Chemical and Process Sewer Pipelines include: Chemical waste, DMV waste, drain cold, dummy disposal line, Miscellaneous chemical drain, radioactive drain, chlorine, flush, and sample pipelines.

Location: The 100-N-84:6 waste site pipelines are centrally located between the 100-N Area process buildings (105-N, 109-N, 182-N, 183-N, 184-N, and 163-N).

Process Description: The 100-N-84:6 pipelines originate from the 109-N Heat Exchanger Building, the 105-N Reactor Building, the 163-N Demineralization Plant, 182-N High-Lift Pump House, 183-N Filter Plant, and 184-N Power House. Various chemicals were utilized in these buildings.

Phosphoric, ascorbic and citric acids, and potassium permanganate were used in the 109-N and 105-N Buildings decontamination processes (WHC-SP-0460).

Ammonium hydroxide, morpholine and lithium hydroxide were added to control cooling water pH. Hydrazine was added to reduce oxygen concentrations in cooling water (WHC-SP-0460). The addition of these chemicals and the core's cooling water system design allowed the water to be recycled instead of using raw water as a once through coolant (DOE/RL-90-22)

Sulfuric acid and sodium hydroxide from supply tanks in 163-N Building were primarily consumed in the demineralizer plant. A 93% sulfuric acid solution was used to regenerate the cation resin used at the 163-N Building while a 50% sodium hydroxide solution was used to regenerate the anion resin. The 8-in acid drain from 163-N connected into the 100N river channel discharge line to the Columbia River.

Sodium sulfite was used as a deoxygenizing chemical for low pressure filter water (182-N). Sodium dichromate was added to filtered water supply and raw water supply for cooling coils in the 105-N Reactor Building.

Radioactive drains at 109-N collect from the coolant systems, hot water quality laboratory, service bay hot shop. The 105-N and 109-N drains run to the 1301-N Liquid Waste Disposal Crib. 100-N-84:6 pipelines located between the 109-N, 182-N, 163-N and the 183-N Buildings lay within the 100-N-61 water treatment pipeline removal excavation footprint (H-1-89932). This area was excavated and backfilled in 2008 through 2009. A small portion of the 100-N-84:6 pipelines also lay within the adjacent 100-N-64 planned excavation (H-1-89934).

Waste Type: Soil

Waste Description: The waste is the pipeline (if present), scale, sediment, or liquid present within the pipelines, and the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:7

Classification: Accepted

Names: 100-N-84:7; 100-N Area Unidentified and Other Miscellaneous Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-N-84:7 waste site pipelines include sections of various diameter pipelines located within the 100-NR-1 operable unit in and around the 105-N Reactor Building. These sections described as unidentified or multitube could not be positively identified based on review of historical documentation. These pipelines include those described as unidentified or multitube.

An above ground feature, labeled N-213, was observed during the 100-N Orphan Site Evaluation (OSR-2009-0001). Being co-located with the 100-N-84 pipelines it was decided to incorporate this feature into this subsite.

Location: The 100-N-84:7 pipelines are located throughout the 100-N Area's 100-NR-1 operable in and around the 105-N Reactor Building.

Waste Type: Soil

Waste Description: The waste is the pipeline (if present), scale, sediment, or liquid present within the pipelines, and the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:8

Classification: Accepted

Names: 100-N-84:8; 100-N Area Unidentified Pipelines within Planned Excavations

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-N-84:8 waste site pipelines include sections of various diameter pipelines located within the 100-NR-1 operable unit in and around the 105-N Reactor Building. These sections described as unidentified or multitube could not be positively identified based on review of historical documentation. Most are believed to be less than 4m (13 ft) long or are within the

planned remedial action excavation area which will result in removal of the pipeline section. Two of the pipeline sections included in the 100-N-84:8 waste site are longer than 4m (13 ft). However these pipeline sections lay completely within the planned remediation excavation of the UPR-100-N-21 and UPR-100-N-23 waste sites (H-1-89916), and 100-N-22 waste site (H-1-89924). An above ground feature, labeled N-218, was observed during the 100-N Orphan Site Evaluation (OSR-2009-0001) to be co-located with the 100-N-84 pipelines. As a consequence this feature was dispositioned as part of 100-N-84.

Location: The 100-N-84:8 pipelines are located throughout the 100-N Area's 100-NR-1 operable in and around the 105-N Reactor Building.

Waste Type: Soil

Waste Description: The waste is the pipeline (if present),scale, sediment, or liquid present within the pipelines, and

the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-84:9

Classification: Accepted

Names: 100-N-84:9; 100-N Area Active Raw Water Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The 100-N Area active raw water pipelines range in size from 6 to 12 inches in diameter and are used for fire protection. The 100-N, 12 inch export water line is fed from the main 42 inch raw water export line between 100-B and 100-D Areas. Smaller pipeline segments connect this line to various fire hydrants located in the 100-N industrial area.

Location: The 100-N-84:9 pipelines are located east of the 105-N Building.

Process Description: Raw water was pumped from the Columbia River and supplied to the fire protection pipelines.

Waste Type: Soil

Waste Description: The waste is the pipeline (if present),scale, sediment, or liquid present within the pipelines, and

the underlying soil.

The SubSite is Part Of:

Code: 100-N-84

Names: 100-N-84; 100-N 100-N Miscellaneous Pipelines

Code: 100-N-85

Classification: Accepted

Names: 100-N-85; Gas Station Fuel Tanks

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This site consisted of a self-service gasoline station with two fuel pumps, a meter card station, an above ground tank, two underground tanks, and a compressor house. The waste site consists of soil contaminated with gasoline and diesel which remained after the removal of two underground fuel storage tanks located at the former 1716-NA Service Station.

Location: The tanks were located approximately 31.2 m (102.4 ft) northwest of 1100-N (H-1-45007, sheet

42).

Process Description: A self-service gasoline station (1716-NA) was established about 1972 to provide fuel for plant vehicles (1716NA). The original tank (100-N-SS-27) reportedly was installed in 1967 (WCH 147703 and WHC-SD-L044-CDR-001, Rev. 0). If the tank was originally installed in 1967 then it may have been located at the 1716-NE Garage Facility. This facility included a Gas Attendant's Building and gasoline pumps according to the official Hanford Atomic Product Operation Buildings List (HW-5000 7/25/1967). The same facility does not list the Gas Attendant's Building following the establishment of 1716-NA. Presumably the Gas Attendant's Building and gasoline pumps were relocated to the self service gasoline station at that time. The 1716-NE Garage Facility had a waste site (100-N-52) associated with a gasoline storage tank. A second gasoline tank (100N-SS-28) was installed at 1716-NA about 1976 (H-1-15635). Tank 100-N-SS-27 was an 11,356 L (3000 gal), single wall, 0.48 cm (3/16 in) carbon steel tank with asphalt coating, buried approximately 1.8 m (6 ft) below grade. The tank was used for regular leaded gasoline storage until 1987 when it began storing unleaded gasoline. The tank was removed from service in June 1990 when it failed a tightness test and a leak was found near the top of the tank. It was subsequently removed from the ground on December 18, 1990, and confirmed to be a release site. The underlying soil was sampled on the same day, and field screening with an organic vapor monitor revealed 200-350 ppm concentration of organic vapor. Approximately 7.6 m (25 ft) of supply pipeline was also removed (WHC-SD-EN-TI-136). Tank 100-N-SS-28 was a 7571 L (2000 gal), single wall, 0.48 cm (3/16 in) carbon steel tank, buried 1 m (3 ft) below grade (H-1-15635). The tank was originally used for diesel fuel storage and later converted to gasoline. It was removed from the ground on July 17, 1991 (WHC-SD-EN-TI-136). Contamination was believed to be the result of occasionally overfilling these tanks, a loose pipe connection on the delivery line leading from the tank to the pump island, as well as a reported release of 337 L (89 gal) on January 18, 1988 (WHC-SD-EN-TI-136, appendix C-1). The soil is contaminated to a depth of at least 11 m (36 ft) below grade, although the actual depth is not known (WHC-SD-EN-TI-136). The lateral extent of the contamination is not documented.

Waste Type: Soil
Waste Description: The waste is soil contaminated with gasoline and/or diesel fuel from underground storage tanks and associated piping. Soil samples obtained from beneath the tanks indicated toluene (4.7 mg/kg), diesel range organics (1,000 mg/kg) and kerosene range organics (3,085 mg/kg) contamination (WHC-SD-EN-TI-136, Table 2).

Code: 100-N-86 **Classification:** Accepted

Names: 100-N-86; 151-N Substation Transformer and Oil Circuit Breakers **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of concrete support pedestals for a 230-13.8 kv transformer, the concrete pad for three oil circuit breakers (OCBs) and any underlying contaminated soils. The site was located at the 151-N Substation which appeared as various electrical equipment and a control building surrounded by a fence.

Location: The 230-13.8 kv transformer and OCBs were located south of Trinity Drive and east of Timber Road. The OCBs were 265 m (870 ft) southeast of the 105-N Reactor and the transformer was located 225 m (738 ft) southeast of the 105-N Reactor. The OCBs were centered at 571374.21E, 149310.86N. The transformer was centered at 571328.21E, 149328.45N.

Process Description: The 151-N Substation was the primary source for "off-site" electrical power for the 100-N Area. The substation was fed by Bonneville Power Administration Midway Switching Station.

The 230 kv electrical feed passed through a bank of OCBs to the 230-13.8 kv main power transformer. The 13.8 kv lines went from the low side terminals of the transformer to the 151-N Building (HW-69000 pg 12.4-2). There were three OCBs, one for each phase of electric power. Construction of the 151-N Substation was completed in November 1961 (HW-83918). The substation continued to serve the 100-N area until it was decommissioned in 1998. The transformer and OCBs were isolated in March 1998 (CCN# 521118). Based on aerial photographs, they were removed between November 2001 and May 2002. The transformer pedestals and OCB pad remained in place. The control building and 13.8-4.16 kv transformer were demolished and removed by the D4 Project in 2006 (D4-100N-0002). The excavation extended to the south pedestal for the 230 kv transformer (CCN# 579138). Analogous sites at other reactor operational areas have had releases of polychlorinated biphenyl's (PCBs) and petroleum hydrocarbons to the underlying soil, due to routine maintenance and accidental releases during their operations.

Related Sites/ Structures: 151-N Substation

Waste Type: Soil

Waste Description: The waste is potentially contaminated concrete and underlying soils.

Code: 100-N-87

Classification: Accepted

Names: 100-N-87; 116-N Ventilation Stack Piping and French Drain

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site consists of the drain piping and French drain for the 116-N ventilation Stack.

Location: The 116-N Exhaust Stack was located approximately 95 m (312 ft) north of the 105-N Reactor Building. The french drain was located approximately 13 m (43 ft) east of 116-N.

Process Description: The 116-N Exhaust Stack was constructed in 1961 and was in use until the N-Reactor was ordered permanently shut down in 1991. The stack was designed to control worker exposure to airborne radioactive contaminants from the reactor by discharging them high into the atmosphere. Air from all five ventilation confinement zones in the 105-N Reactor Building was routed through moisture separators, high efficiency particulate filters, and charcoal adsorbers in the 117-N Filter Building to remove airborne contamination. The filtered air was discharged to the stack. Moisture and other condensables in the filtered air stream would plate out on the inside of the stack. The stack foundation contained a floor drain that discharged the condensate to a french drain through a 5.08 cm (2 in) galvanized iron pipe (0602762).

Related Sites/ Structures: 105-N Reactor Building, 117-N Filter Building

Waste Type: Soil

Waste Description: The waste consists of the drain piping, french drains and underlying gravel and soil.

Code: 100-N-88

Classification: Accepted

Names: 100-N-88; 1143-N French Drain

Reclassification: None

Code: 100-N-90 **Classification:** Accepted
Names: 100-N-90; 100-N Reactor Rod Caves **Reclassification:** None
Type: Storage **Start Date:**
Status: Inactive **End Date:**

Description: The Rod Cave is two 30.5 cm (12 in) carbon steel pipes buried in the earth berm on the north side of the 117-N Air Filter Building. The west ends of the pipes have aluminum covers; the east ends are buried in the berm. Two vertical pipes for monitoring radiation levels extend through the berm.

Location: The rod cave is located in the earth shield berm on the north side of 117-N, 115 m (377 ft) north of the 105-N Reactor.

Process Description: The Rod Cave was the temporary storage for used control rods from N Reactor.

Related Sites/Structures: WIDS site 100-N-63, 100-N Reactor TSD Underground Pipelines, is located about 7 m (23 ft) west of the rod cave. Facilities associated with the rod cave include the 105-N Reactor and 117-N Air Filter Building.

Waste Type: Equipment
Waste Description: The waste consists of two carbon steel pipes used to store control rods. COPCs Carbon-14 and Cobalt-60

Waste Type: Soil
Waste Description: The waste includes potentially contaminated soils underlying the carbon steel pipes. COPCs Carbon-14 and Cobalt-60

Code: 100-N-91 **Classification:** Accepted
Names: 100-N-91; 100-N Battery Debris **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of a 0.6 meter diameter (2 feet) diameter battery dump. The exterior of the batteries has degraded and the contents is mixed into the soil. There is no vegetation growing in the affected area.

Location: This feature is located 805 m SW of 100-N-47.

Process Description: This feature was created due to batteries being discarded in the field.

Related Sites/Structures: 100-N Military camp

Waste Type: Batteries
Waste Description: The waste includes discarded batteries and potentially contaminated underlying soils. The COPCs consist of metals.

Code: 100-N-92 **Classification:** Accepted
Names: 100-N-92; 100-N Stain Area #1 **Reclassification:** None
Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a 3 meter (10 feet) diameter area stained with a white substance resembling dried paint and two 4 liter (1 gallon) cans.

Location: This feature is located 123 m SW of 100-N-47.

Related Sites/ Structures: 100N Military Camp

Waste Type: Misc. Trash and Debris

Waste Description: Site COPCs consist of volatile organic compounds and lead. The waste consists of the stained soil and debris.

Code: 100-N-93 **Classification:** Accepted

Names: 100-N-93; 100-N Stain Area #2 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of potentially contaminated soil. It includes concrete, metal, glass debris, stained soil, suspected friable asbestos, and garnet sand with areas lacking in vegetation.

Location: This feature is located 475 m SW of the rail spurs entering the S end of 100-N, and 85 m SE of the dirt access road between 100-N and 100-K.

Waste Type: Misc. Trash and Debris

Waste Description: The waste consists of potentially contaminated soil, concrete, metal, glass, friable asbestos and garnet sand.

Code: 100-N-94 **Classification:** Accepted

Names: 100-N-94; 100-N Oil Filters #1 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of the underlying soil and approximately 50 oil filters.

Location: This feature is located 33 m NE of N-091 and 20 m W of Route 4 N.

Process Description: This feature appears to have been caused by a random dumping of used oil filters.

Waste Type: Misc. Trash and Debris

Waste Description: Metals, polyaromatic hydrocarbons, total petroleum hydrocarbons, and polychlorinated bipheynls.

The waste includes discarded oil filters and potentially contaminated soils.

Code: 100-N-95 **Classification:** Accepted

Names: 100-N-95; Hanford Generating Plant (185-N) Septic Tank **Reclassification:** None

Type: Sanitary Sewer **Start Date:**

Status: Inactive **End Date:**

Description: This feature consists of a septic tank, associated piping and underlying soil

Description:

Location: This feature is located approximately 4 m from the NE corner of 100-N-4.

Process Description: The septic tank supplied influent to 100-N-4 (Hanford Generating Plant (HGP) tile field). The tank received sanitary waste and lab waste influent from the 185-N building via a 2.5 cm (8 in) cast iron pipe (H-6-4025 sht. 1 rev. 1). The tank did not receive effluent from the 185-N building drains and sumps, which are identified as SWMU # 3 ((HGPCVP-SWMUs 5, 6, 7, 8, 9 & 10 Rev. 0, June 2004). Testing for corrosion inhibitors hydrazine and morpholine were performed in the lab. It is likely that the tank received these reagents (100-N-4).

Related Sites/ Structures: 100-N-4 (HGP tile field)

Code: 100-N-96 **Classification:** Accepted

Names: 100-N-96; 100-N Military Camp Disposal Pits **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of three separate suspect disposal pits located southwest of the 100-N-47 military camp, identified from a 1957 aerial photograph. The suspect disposal pits were located outside the boundary of the military camp.

Location: The three disposal pits were located about 570 meters (1870 ft) southwest of the military camp. Disposal Pit 1 was centered at 571505.3E, 148238.3N Disposal Pit 2 was centered at 571545.9E, 148068.8N Disposal Pit 3 was centered at 571672.4E, 148106.7N

Process Description: The "Army Agreement" of 1951 provided for the disposal of refuse by the Army as follows: "Army will dispose of its trash and garbage in a manner acceptable to the Atomic Energy Commission (AEC). The Army may make disposal pits off Army land, as necessary, at locations designated by AEC and such pits shall be subject to AEC inspection." (CCN# 589754). The 1957 aerial photo of the military site shows disturbances to the southwest of the military camp outside what appears to be the perimeter fence. These disturbances are suspect disposal pits. The military camp was in use by the Army from 1951 to 1958. In 2008 aerial photos (115-rgb.tif and 116-rgb.tif) heavy equipment blade marks are visible which indicate the disposal pits have been backfilled.

Related Sites/ Structures: WIDS Site 100-N-47 Military Artillery Site Solid Waste Site, was located to the northeast.

Military Camp refuse and garbage was most likely disposed in the disposal pits.

Waste Type: Misc. Trash and Debris

Waste Description: The waste consists of solid waste generated by the military camp. Site COPCs were listed as volatile organics, semivolatile organics, polychlorinated biphenyls and metals

Code: 100-N-97 **Classification:** Accepted

Names: 100-N-97; 100-N Oil Filters #2 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of underlying soil and 3 oil filters. There is no vegetation growing within the release area.

Location: This feature is located approximately 56 m W of the SW corner of the 100-D perimeter road.

Waste Type: Misc. Trash and Debris
Waste Description: The waste includes discarded oil filters and potentially contaminated soil. Site COPCs consist of metals, polyaromatic hydrocarbons, total petroleum hydrocarbons, and polychlorinated bipheynls.

Code: 100-N-98 **Classification:** Accepted
Names: 100-N-98; 100-N Stain Area #3 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of two locations where the surface is stained and no vegetation is growing in the affected area. One location (OSE - N-193) consists of multiple stained spots in a 30 meter (98.4 feet) diameter area. The other location (OSE - N-194) is a single stained spot approximately 3 meter (9.8 feet) in diameter.

Location: The larger stained area is located approximately 33 m northwest of 128-N-1 (Burn Pit). The smaller stained area is located approximately 34 northeast of 128-N-1.

Waste Type: Soil
Waste Description: The waste consists of the stained soil.

Code: 100-N-99 **Classification:** Accepted
Names: 100-N-99; 100-N Oil Filters #3 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of two locations where oil filters were discarded. The affected areas are devoid of vegetation and appear stained.

Location: Both locations are west of Route 4N approximately 1,420 meters south of Route 2N. The first area (OSE - N-196) is located approximately 148 meters west of Route 4N. The second area (OSE - N-197) is located approximately 55 meters west of Route 4N.

Waste Type: Misc. Trash and Debris
Waste Description: The waste includes discarded oil filters and potentially contaminated soil. Site COPCs consist of metals, polyaromatic hydrocarbons, total petroleum hydrocarbons, and polychlorinated bipheynls.

Code: 100-N-100 **Classification:** Accepted
Names: 100-N-100; 100-N Oil Filters #4 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of petroleum based material released to the ground surface and the underlying soils. The soil is crusted and no vegetation is growing in the affected area. There are 4 oil filters at this location.

Location: This site is approximately 190 meters W of the Northern most point of 116N-1.

Waste Type: Misc. Trash and Debris
Waste Description: The waste includes discarded oil filters and potentially contaminated soils. Site COPCs consists

Description: of metals, polyaromatic hydrocarbons, total petroleum hydrocarbons, and polychlorinated biphenyls.

Code: 100-N-101

Classification: Accepted

Names: 100-N-101; 100-N Stain Area #4

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of the underlying soil. The soil has no vegetation growing in the affected area.

Location: This feature is located approximately 13 m SW of 100-N-13.

Waste Type: Soil

Waste Description: The waste consists of the stained soil.

Code: 100-N-102

Classification: Accepted

Names: 100-N-102; 100-N Potentially Contaminated French Drains

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: This site consists of potentially contaminated french drains at three separate locations, and includes any known associated piping and surrounding soil. These subsites were discovered during the historical review activity of the Orphan Sites Evaluation of the N Area operable unit (100-NR-1). All remaining portions of this site are located below grade.

The first location had an absorption pit and two drain lines generally to the north of the former 116-N Ventilation Stack location (see Figure 1). These components were associated with the former 119-N and 119-NA Sample Buildings, which sampled potentially contaminated exhaust air and associated condensables from the 116-N Stack. The stack and sample buildings have been demolished, and the line to the absorption pit was capped (128270).

The second location had a dry well, and a miscellaneous chemical drain line, to the south of the former 166-N Fuel Oil Storage Pump House (see Figure 1). The pump house has been demolished and the surrounding soil deferred to Field Remediation (D4-100N-0004). The french drain and associated pipelines are not addressed in the deferral.

The third location had a french drain noted on as-built drawing H-1-45007, Sheet 35. The drain had no identified associated piping, and was located west of the former 1126-NA Mobile Office (see Figure 2). The mobile office, as well as other nearby buildings, has been demolished.

A portion of the site was removed during the remediation of UPR-100-N-14. In order to facilitate closure of the removed portions, the 100-N-102 site was subdivided as follows:

- 100-N-102:1, 100-N Potentially Contaminated French Drains, Group 1
- 100-N-102:2, 100-N Potentially Contaminated French Drains, Group 2

Location: The 119-N Exhaust Air Monitoring Building Absorption Pit is centered at 571244E 149685N. The 166-N Pump House French Drain is centered at 571269E 149682N. The French Drain outside the mobile office is centered at 571366E 149478N.

Process Description: 119-N Exhaust Air Monitoring Building Absorption Pit

DESCRIPTION:

Although the 116-N Ventilation Stack began operation in 1961, its exhaust stream was not continuously sampled until the construction of the 119-N Exhaust Air Monitoring Building in 1971. The sample stream was filtered, then cooled in a condenser. The 5 GPM cooling water stream for this condenser initially discharged via a 2-inch line to the 36-inch contaminated transfer line between the 105-N Lift Station and the 1301-N Crib. Back pressure from this lift station transfer line backed up the cooling water discharge line and resulted in UPR-100-N-14 in August 1974. The corrective action for this UPR was to construct a new cooling water discharge line and earth absorption pit, and abandon the old line (DC-3322). While this was being done, another release (UPR-100-N-9) occurred from the cooling water discharge line in October 1974, nearer the lift station transfer line. Then in 1984, the 119-NA Air Sample Monitoring Stack Sampler Building was constructed to assist with monitoring the stack exhaust for tritium. Excess tritium effluent condensate was also routed via a floor drain to the absorption pit (H-1-36322), until permanent reactor shut down in the early 1990's.

166-N Pump House Dry Well

The 48-inch diameter dry well (french drain) received discharges via a 3-inch cast iron pipe from the building water sump in the basement. The waste included water and miscellaneous floor drainage containing sludge, grit and oil (HW-69000, Vol II, page 8.2.10). The drywell also received low pressure and high pressure condensate returns (100 -N-84) from the steam systems. See Figure 4 and 5 photographs of the pump house and the french drain cover.

French Drain Outside Mobile Office The french drain is shown adjacent to a buried power line conduit on drawing H-1-45007 sheet 35. No lines are shown connecting to it, so sources of discharge to this drain are unknown. The trailers immediately adjacent to the french drain were used for offices and classrooms. There were restroom facilities and a kitchen.

Related Sites/ Structures: 105-N Reactor Building, 117-N Filter Building, 119-N Stack Sampler Building, 119-NA Continuous Airborne Effluent Monitoring Building, UPR-100-N-14 (119-N Drain System Leak), UPR-100-N-9 (119-N Cooling Water Drain Line Leak), 166-N Fuel Oil Storage Pumphouse.

This Site has the Following SubSites:

Code: 100-N-102:1

Names: 100-N-102:1; 100-N Potentially Contaminated French Drains, Group 1

Code: 100-N-102:2

Names: 100-N-102:2; 100-N Potentially Contaminated French Drains, Group 2

Code: 100-N-102:1

Classification: Accepted

Names: 100-N-102:1; 100-N Potentially Contaminated French Drains, Group 1

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The subsite one consists of potentially contaminated piping that were removed during remediation of UPR-100-N-14. The piping consisted of two drain lines that received waste from the 119-N Exhaust Air Monitoring Building. The drain line that led to the Absorption Pit was partially removed. The part that remains was administratively assigned to the 100-N-102:2 waste site. The other drain line had been identified as an abandoned line (H-1-45007, Sheet 51).

Location: The 119-N Exhaust Air Monitoring Building Absorption Pit is centered at 571244E 149685N.

Process: Refer to the process description for the various french drains contained in the parent waste site.

Process Description: (100-N-102) summary.

Related Sites/ Structures: 105-N Reactor Building, 117-N Filter Building, 119-N Stack Sampler Building, 119-NA Continuous Airborne Effluent Monitoring Building, UPR-100-N-14 (119-N Drain System Leak), UPR-100-N-9 (119-N Cooling Water Drain Line Leak)

Waste Type: Not Specified

Waste Description: The waste will include the pipelines and any potential contaminated soil.

The SubSite is Part Of:

Code: 100-N-102

Names: 100-N-102; 100-N Potentially Contaminated French Drains

Code: 100-N-102:2

Classification: Accepted

Names: 100-N-102:2; 100-N Potentially Contaminated French Drains, Group 2

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of three french drains and potentially contaminated piping that was not removed during remediation of UPR-100-N-14 (refer to 100-N-102:1 for the portions that were removed).

The first location had an absorption pit and two drain lines generally to the north of the former 116-N Ventilation Stack location. These components were associated with the former 119-N and 119-NA Sample Buildings, which sampled potentially contaminated exhaust air and associated condensables from the 116-N Stack. The stack and sample buildings have been demolished, and the line to the absorption pit was capped (128270).

The second location had a dry well, and a miscellaneous chemical drain line, to the south of the former 166-N Fuel Oil Storage Pump House. The pump house has been demolished and the surrounding soil deferred to Field Remediation (D4-100N-0004). The french drain and associated pipelines are not addressed in the deferral.

The third location had a french drain noted on as-built drawing H-1-45007, Sheet 35. The drain had no identified associated piping, and was located west of the former 1126-NA Mobile Office. The mobile office, as well as other nearby buildings, has been demolished.

Location: The first drain is located near the 119-N Exhaust Air Monitoring Building Absorption Pit, centered at 571244E 149685N. The second drain is located near the 166-N Pump House, centered at 571269E 149682N. The third French Drain is located outside the 1126-NA mobile office, centered at 571366E 149478N.

Related Sites/ Structures: 105-N Reactor Building, 117-N Filter Building, 119-N Stack Sampler Building, 119-NA Continuous Airborne Effluent Monitoring Building, UPR-100-N-14 (119-N Drain System Leak), UPR-100-N-9 (119-N Cooling Water Drain Line Leak), 166-N Fuel Oil Storage Pumphouse.

Waste Type: Sludge

Waste Description: The waste included water and miscellaneous floor drainage containing sludge, grit and oil

The SubSite is Part Of:

Code: 100-N-102
Names: 100-N-102; 100-N Potentially Contaminated French Drains

Code: 100-N-103 **Classification:** Accepted
Names: 100-N-103; 100-N Steam Condensate French Drains **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: This site consists of 12 steam condensate french drains and their associated below grade piping components. The french drains were discovered during the Orphan Site Evaluation Report (OSR) historical review. This site includes the following subsites:

100-N-103:1, 100-N Steam Condensate French Drains (eleven inactive drains)
100-N-103:2, 100-N Steam Condensate French Drains (one active drain)

Location: Refer to the subsites for locations of the french drains.

Process Description: Steam was typically used at all facilities for heating purposes. As a non-contact system the steam remained uncontaminated. The steam transport process utilized a high pressure supply line and a low pressure return or discharge line. It was necessary to bleed both the supply and return lines to prevent condensate build up. The condensate was typically blown off from the above grade piping system into a below grade, covered french drain. French drain diameters and construction material varied depending on steam piping size, service capacity pounds per hour, and expected flow rate received.

This Site has the Following SubSites:

Code: 100-N-103:1
Names: 100-N-103:1; 100-N Steam Condensate French Drains (inactive)

Code: 100-N-103:2
Names: 100-N-103:2; 100-N Steam Condensate French Drains (active)

Code: 100-N-103:1 **Classification:** Accepted
Names: 100-N-103:1; 100-N Steam Condensate French Drains (inactive) **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: This subsite consists of 11 steam condensate french drains and their associated below grade piping components. Details of inlet pipes, and french drain size and construction details are provided in the process description below.

The following are site descriptions for each of the 11 steam condensate french drains in this subsite.

1. The site is a french drain with a 1.9-cm (0.75-in.) clean medium pressure steam return line from the 108-N Building (H-1-29247). This french drain was removed during the demolition of the 108-N building. See site comment section for disposition of this drywell during remediation of another waste site.
 2. The site is a 7.6-cm (3-in.) french drain, 2.8-m (9.2-ft) to wall. The site is associated with the 1902-N building, which housed clean export water valving and piping (H-1-45007, sht 22). See site comment section for disposition of this drywell during remediation of another waste site.
-

3. The site is a 0.61-m (24-in.) primary flash pipe with a 1.9-cm (0.75-in.) diameter, 13-m (43-ft) long medium pressure steam condensate pipeline from the wall of the 184-NC Building (H-1-45007, sht 28, 29).
4. The site is a 0.9-m (36-in.) french drain with a 6-m (20-ft) long pipe to the wall of the 1701-N clean badgehouse (H-1-45007, sht 27).
5. The site is a 0.9-m (36-in.) dry well abandoned in 1985, replaced by a 1.2-m (48-in) dry well, and received steam condensate from 184-N, 184-NA, and 184-N day tanks. (H-1-45007, sht 29; H-1-48915 shts 1 and 2).
6. The site is a 1.2-m (48-in.) dry well that replaced a 0.9-m (36-in) dry well in 1985, and received steam condensate from 184-N, 184-NA, and 184-N day tanks. A 7.6-cm (3-in.) pipe enters the dry well (H-1-45007, sht 29). See site comment section for disposition of this drywell during remediation of another waste site.
7. The site is a 0.61-m (24-in.) dry well with a 1.3-cm (0.5-in.) diameter, 31.5-m (103-ft) long steam condensate pipeline to the 1101-N wall, and a potable water line from the 1100-N office building (H-1-45007, sht 28).
8. The site is a dry well with a 30-m (98-ft) long, 2.54-cm (1.5-in.) diameter line connecting from the 1100-N Building (H-1-45007, sht 35, H-1-44195). There is a manhole with a valve and pipe inside immediately adjacent to the french drain.
9. The site is a 1.2-m (48-in.) dry well with a 10-cm (4-in.) floor drain from an equipment access pit, and a 10-cm (4-in.) cast iron floor drain line from a clean office area at the 105 N Building (H-1-28877, H-1-27705). See site comment section for disposition of this drywell during remediation of another waste site.
10. The site is a dry well with a 10-cm (4-in.) steam condensate pipeline from the 105 N Building and another 10-cm (4-in.) steam condensate pipeline from clean operations in 1712-N (H-1-45007, sht 43). See site comment section for disposition of this drywell during remediation of another waste site.
11. The site is a dry well with a 7.6-cm (3-in.) low pressure steam condensate pipeline from the 1734-N gas bottle storage building (H-1-45007, sht 43). See site comment section for disposition of this drywell during remediation of another waste site.

Location: The 100-N-103 Steam Condensate French Drains are located in the 100 NR-1 Operable Unit of the Hanford Site, near the 108-N chemical unloading facility, 1902-N export water tie-in building, 184-N powerhouse, 1701-N Gatehouse, 1100-N and 1101-N Office Buildings, 105-N Reactor, 1712-N Insulation Shop, and the 1734-N gas storage bottle building.

Waste Type: Not Specified

Waste The waste will include the pipelines and any potential contaminated soil.

Description:

The SubSite is Part Of:

Code: 100-N-103

Names: 100-N-103; 100-N Steam Condensate French Drains

Code: 100-N-103:2	Classification: Accepted
Names: 100-N-103:2; 100-N Steam Condensate French Drains (active)	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site is a 1.2-m (4-ft)-diameter, 5-m (16-ft)-long dry well for a filter and water supply vault. The dry well is buried 7.3 m (24 ft) below grade with coarse gravel at the bottom to the inlet of the 15-cm (6-in.)-diameter cast iron inlet pipe (H-6-302).	

Subsequent to the OSR, a review of the historical information for drain number 12 concluded

that the french drain is associated with an active export water line. Registration of this dry well as a miscellaneous stream under the Washington Underground Injection Control Program (WAC 173-218) has been submitted.

Location: The 100-N-103:2 subsite is located in the 100 NR-1 Operable Unit of the Hanford Site, near the 609 Fire Station.

Waste Type: Not Specified

Waste Description: The waste will include the pipelines and any potential contaminated soil.

The SubSite is Part Of:

Code: 100-N-103

Names: 100-N-103; 100-N Steam Condensate French Drains

Code: 116-N-1

Classification: Accepted

Names: 116-N-1; 1301-N Crib and Trench; 1301-N Liquid Waste Disposal Facility

Reclassification: Interim Closed Out (4/14/2009)

Type: Crib

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1985

Description: The waste site included a large crib and trench that has been remediated and reclassified to interim closed out. Before remediation the site was enclosed within a chain link fence and posted with "No Trespassing", "Danger - Unauthorized Personnel Keep Out", "Radiologically Controlled Area", "Underground Radioactive Material" and "Surface Contamination" signs.

Location: The crib and trench are located northeast of the 105-N Building, outside the 100N Area fence line. It is approximately 256 meters (840 feet) from the Columbia River.

Process Description: The crib and trench received radiologically contaminated water from the 105-N Reactor basin floor drains and the 109-N floor drains. The effluent contained activation and fission products as well as small quantities of corrosive liquids and laboratory chemicals. At times, the effluent consisted of water from the primary reactor coolant system, the periphery reactor cooling system and decontamination wastes from these systems. The crib operated from 1963 to 1965, it was used for the disposal of N Reactor cooling water. The crib was an open, rectangular excavation, 88.5 by 38.1 by 1.52 meters (290 by 125 by 5 feet deep). A sloped soil and gravel embankment formed the walls of the crib. The bottom was filled with a 0.9-meter (3-foot) thick layer of large boulders. In 1981, an additional stabilizing layer of large rock was added to the area around the weir box at the south end of the crib. In 1965 the "zigzag" trench was added to enhance percolation capacity. It measured 15.3 x 488 x 3.7 meter (50 by 1,600 by 12 feet) and ran northeast in a zigzag pattern from the north side of the crib. Wooden poles were laid across the trench to support wire screens to keep birds out of the trench. In 1982 the bird screens were covered with a precast concrete panel cover to minimize wildlife intrusion and airborne contamination. The dimensions of the concrete cover is 15.9 X 424 X 0.20 meters (52 by 1390 by 0.67 feet thick). The panels were placed over the existing wooden beams and the bird screens. The edges of the trench cover were backfilled and shotcreted. Spaces between cover panels were grouted. Both facilities operated in tandem until 1985 when the 116-N-3 Crib became the primary liquid disposal facility for the N Reactor, and the 116-N-1 Crib and Trench were taken out of service.

Related Sites/Structures: The site is associated 100-N-63, 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines (See Subsites) and UPR-100-N-31.

Waste Type: Process Effluent

Waste Description: The unit received radioactive water containing activation and fission products and small

Description: quantities of corrosive liquids and laboratory chemicals at an average flow rate of approximately 5,680 liters per minute (1,500 gallons per minute) (note: the 8 million liters assumes the crib effluent was steady 24 hours per day). The crib received radioactive effluent streams from the 105-N and 109-N Buildings. After 1965, the trench received the same wastes as the crib. Operational contaminant inventory records from 1964 through 1985 show a total of 3,000 curies of tritium, 2,300 curies of cobalt-60, 1,900 curies of strontium-90, 2,600 curies of cesium-137, and 23 curies of plutonium-239 being released to the crib and trench. An estimate of dangerous wastes from the decontamination of the primary coolant system discharged annually include 2,800 kilogram (6,100 pounds) of hydrazine test solution, 2,800 kilograms (6,100 pound) of ammonia test solution, 3,500 kilograms (7,800 pounds) of chloride test solution and 1,800 kilograms (3,900 pounds) of fluoride test solution per year of operation. No actual amounts are available. The estimates include common floor drains that discharged to the crib.

Closure Info: The cleanup verification package (CVP) for the 116-N-1 Crib and Trench (CVP-2006-00004), has demonstrated that remedial action at the site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the 100-NR-1 Interim Remedial Action Record of Decision (ROD) and Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units (RDR/RAWP), Explanation of Significant Difference for the 100-NR-1 Operable Unit Treatment, Storage, and Disposal Interim Action Record of Decision and 100-NR-1/100-NR-2 Operable Unit Interim Action Record of Decision (100-NR-1 ESD); and the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (CMS/CP). Only the soils of the 116-N-1 overburden, shallow zone, and the deep zone layer immediately in contact with the shallow zone have been sampled, analyzed, and modeled for groundwater protection in this CVP.

Remedial/corrective action at the site began in April 2002. Excavation of the site involved removing the overburden materials, debris, the contaminated and uncontaminated structure, and underlying contaminated soil. Approximately 8 m (26.2 ft) of piping was also removed between the crib and the 1315-N valve station during excavation of the sidewall of the crib. Closeout of this segment of piping was addressed using the verification sampling for the crib. The contamination within the boundaries of the UPR-100-N-31 waste site was also removed, but the waste site is not proposed to be interim closed out because of contaminant plumes that impacted active facilities and cannot be excavated until the active facilities are closed or relocated.

Waste site COCs were identified in the Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout (100-NR-1 SAP) and were also listed in Table 1 of the CVP as: strontium-90, americium-241, plutonium-239/240, nickel-63, cesium-137, cobalt-60, europium-154, europium-155, tritium (H-3), chromium (total), hexavalent chromium, mercury, nitrate (as nitrogen).

Final cleanup verification samples were collected on November 8, 2005 through November 10, 2005 for the combined 116-N-1 Crib and Trench area. Verification sampling of overburden was performed on December 1, 2003. Verification soil samples of the land bridge area were collected on August 3, 2003 and October 19, 2004. The final verification samples were submitted to offsite laboratories for analysis using approved EPA analytical methods, as required per the 100-NR-1 SAP.

Only the soils of the 116-N-1 overburden, shallow zone, and the deep zone layer immediately in contact with the shallow zone have been sampled, analyzed, and modeled for groundwater protection in this CVP. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 m [15 ft]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required. The 100-NR-1 ESD documents the balancing factors analysis that concluded to allow evaluation of residual radionuclide contamination in the deep zone for protection of groundwater and the river without

irrigation. Therefore, institutional controls to prevent irrigation are required.

Institutional controls will be implemented in accordance with the Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions. Consistent with the rural-residential exposure scenario specified in the ROD, it is assumed that contaminated groundwater would not be used for drinking, irrigation, or any other use for the time period specified in the ROD.

CVP, Revision 0, was submitted to Ecology in 2006. Ecology rejected the Waste Site Reclassification Form at that time due to the verification sample results exceeding Washington Administrative Code (WAC) 173-303-610(2)(b)(i) closure performance standards for hexavalent chromium of 2.0 mg/kg (based on WAC 173-340, amended 1996).

A Waste Site Reclassification Form (Control Number 2006-018) was attached to the Cleanup Verification Package (CVP). Tri-Party Agreement Handbook Procedure MP-14 requires Department of Ecology to disposition that form. We approve re-classification of the 116-N-1 waste site to "Interim Closed Out" with the following considerations.

The 116-N-1 is one of four waste sites that make up the 1301-N Surface Impoundment Resource, Conservation and Recovery Act (RCRA) Treatment, Storage and Disposal (TSD) Unit. The United States Department of Energy (USDOE) is remediating the four waste sites under authority of the 100-NR-1 TSD Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Record of Decision. Washington's Hazardous Waste Management Act requires USDOE to close the TSD in its entirety. This means that portions of the 116-N-1 cannot be considered closed as USDOE completes work on the other three waste sites.

Code:	116-N-2	Classification:	Accepted
Names:	116-N-2; 1310-N Chemical Waste Storage Tank; 1310-N Waste Storage Area; The Golf Ball	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1964
Status:	Inactive	End Date:	1/1/1987
Description:	The 116-N-2 Facility complex consists of piping, pumps, a transfer tank (commonly referred to as the silo) and a large, spherical storage tank (commonly referred to as the golf ball). The site was used as a collection tank for N Reactor primary piping decontamination wastes. The 3.4E+06-liter (9.0E+05-gallon) spherical tank is partially buried in the ground. A compacted soil radiation barrier, 7.6 meters (25 feet) high, surrounds the tank on three sides.		
Location:	The unit is located northeast of the 105-N Reactor Building, adjacent to the 116-N-1 Crib.		
Process Description:	The 116-N-2 Tank was used to temporarily store and neutralize acidic decontamination waste from the internal decontamination of the N Reactor primary loop through an underground pipeline. An additional, small scale transfer line enters the tank from the N Reactor Building. The primary loop was decontaminated every three to five years. Each decontamination event resulted in approximately 2.3E+06 liters (6.0E+05 gallons) of contaminated solution. The decontamination solutions contained approximately 80,000 liters (21,000 gallons) of 70% phosphoric acid and 180 kilograms (400 pounds) of diethylthiourea. The solutions were neutralized in the tank. From 1968 to 1972, the neutralized solutions were pumped into trucks parked on the east side of the containment area and transported to 200 Area for disposal. After 1972, the solution was sent to the 1314-N Liquid Waste Loadout Station. The solutions were also discharged to the 116-N-1 Crib, if necessary.		
Waste Type:	Process Effluent		
Waste Description:	Phosphoric acid used in the internal decontamination of the primary loop of the reactor, and		

successive rinse water were temporarily stored in this tank before being shipped to the 200 Area storage tanks. The liquid in the tank was neutralized with sodium hydroxide. Three unplanned releases of decontamination solution occurred at this site which cumulatively totaled 3.43E+05 liters (90,600 gallons).

Code:	116-N-3	Classification:	Accepted
Names:	116-N-3; 1325-N Crib and Trench; 1325-N Liquid Waste Disposal Facility	Reclassification:	Interim Closed Out (12/23/2002)
Type:	Crib	Start Date:	1/1/1983
Status:	Inactive	End Date:	1/1/1991

Description: The site has been remediated and closed out.

Location: The site was located at the northeast corner of the 100N Area outside the fence line, 305 meters (1,000 feet) east and 61 meters (200 feet) north of the 1301-N Crib.

Process Description: The 116-N-3 Crib (1325-N LWDF) was designed for the disposal of liquid waste percolation through the soil column. It was built to replace the 116-N-1 Crib and first received N Reactor effluent in 1983. The 116-N-3 Trench was put into service in September 1985 to provide additional disposal capacity. Effluent reportedly never overflowed the first earthen dam in the trench. The LWDF has not received waste since February 1987 and was closed under interim status. The process design capacity for the 1325-N LWDF was 1.64E+07 liters (4.32E+06 gallons) per day. The design capacity reflected the maximum volume of water discharged daily, rather than the physical capacity of the unit. This unit consisted of a rectangular concrete crib that measured 76.25 by 73.20 meters (250 by 240 feet) and a percolation trench. The trench, located on the northeast side of the crib, was 3 m (10 ft) wide, 2.1 m (7 ft) deep, and 915 m (3,000 ft) in length, and was divided into four equal sections by three earthen dams. The trench was also covered with concrete panels. Effluent was delivered to the 116-N-3 Crib through a 448-meter (1,468-foot) long by 0.9-meter (Diameter Nominal [DN] 900) (36-inch) diameter pipeline that entered the crib at the southwest end. A covered concrete by-pass structure ran parallel to the pipeline and connected to the crib at the southwest end. The by-pass structure was built at the same time as the 1312-N Retention Basin (also known as the Liquid Effluent Retention Facility or (LERF)).

Related Sites/Structures: 100-N-63, 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines; 100-N-63:1 Pipeline and concrete encased pipe by-pass structure.

Waste Type: Process Effluent

Waste Description: This unit received radioactive activation and fission products and small quantities (below regulatory limits) of corrosive liquids and laboratory chemicals. Dangerous waste code numbers include: F003, D002, D006, D007, D008, D009, U133, WC02, and WT02.

Closure Info: 116-N-3 and 100-N-63:1 were addressed as a group. The information below documents information for the group of sites.

This portion of the pipeline 100-N-63:1, approximately 66 meters (216.54 feet) west of 1213-N Diversion Box continuing to the southwest end of the 116-N-3 Crib, has been remediated and closed-out in CVP-2002-00002. For purposes of the CVP/closure report and consistent with the permitted TSD site designation, the 116-N-3 Crib and Trench, the 100-N-63:1 Pipeline, and the bypass structure are collectively referred to as the 116-N-3 site.

Cleanup Verification samples, including QA/QC samples were collected and analyzed for the established contaminants of concern. Shallow zone and deep zone samples were collected between August 24, 2001 and April 8, 2002 and may be viewed on the HEIS database under

SAF number B01-090.

Code: 116-N-4 **Classification:** Accepted

Names: 116-N-4; 1300-N Emergency Dump Basin **Reclassification:** None

Type: Retention Basin **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1987

Description: The site consists of the 1300-N Emergency dump basin. The 116-N-4 Emergency Dump Basin is a rectangular shaped, outdoor, concrete storage basin with a 10.7-centimeter (0.188-inch) carbon steel liner.

Location: The basin is located on the west side of the 109-N Building and the 105-N Reactor Building.

Release Description: The basin leaked to the soil at the northeast and northwest corners of the basin during the early 1980s.

Process Description: The 116-N-4 Emergency Dump Basin was originally designed to receive emergency single pass cooling water from N Reactor. In the late 1960's the unit was determined to be insufficient for its original purpose because it did not have adequate capacity for the volume of coolant used during an emergency cooling operation. It was replaced with the 1304-N Emergency Dump Tank (EDT) in 1973. From 1973 to 1987, 116-N-4 received contaminated liquid generated during the periodic blowdown of the steam generators located in the 109-N Building. This condensate contained low levels of radioactive contaminants. It also received radioactive waste from the N Reactor Lift Station. Since the shutdown of N Reactor in 1987, approximately 2.0E+06 liters (7.5E+05 gallons) of water has been maintained in the basin to cover the layer of sludge in the bottom of the basin to prevent it from drying and causing airborne contamination. Non-filtered river water has been added as needed to maintain an adequate water level.

Related Sites/ Structures: The basin is associated with suspected unplanned releases 100-N-29, 100-N-30 and 100-N-38.

Waste Type: Sludge

Waste Description: Sediments were sampled in 1995 and found to contain radionuclides exceeding Westinghouse Hanford Company Category I limits and heavy metal concentrations below Resource Conservation and Recovery Act (RCRA) limits. The site is, therefore, radiologically contaminated but is not a mixed waste site. Radionuclide and heavy metal characterization is provided in BHI-00731. Since basin leakage has occurred, additional contaminants may be expected in the soils beneath the basin. Contaminants in the Dump Basin liquid include average concentrations of 6.25 E+05 of H-3, 6.12 E+01 of C0-60, 5.70 E+04 of Sr-90, 2.51 E+01 of Zr-95, <5.16 E+01 of Ru-106, 2.16 E+01 of Sb-125, <5.16 E+00 of Cs-134, 9.27 E+02 of Cs-137, 1.62 E-02 of Pu-239 and 1.82 E-01 of Pu 239/240.

Code: 118-N-1 **Classification:** Accepted

Names: 118-N-1; 1303-N Radioactive Dummy Burial Facility; 1303-N Spacer Silos; 100-N Area Silos; 100-N Area Spacer Silos; 118-N **Reclassification:** None

Type: Silo **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1995

Description: The site was a temporary storage facility for contaminated fuel spacers. The silos are partially underground with a approximately 1.5 meter (5 foot) of the structures above ground covered with soil. The soil mound had scant vegetation growing on it and a single vent stack protruded

from the mound. A chain link fence surrounded the site on three sides and was posted with "Contamination Area, Underground Radioactivity and Soil Contamination Area" signs. The western side is barricaded with a 2.1-meter (7-foot) concrete wall. Following surface stabilization in 1998, the site was posted with Underground Radioactive Material signs.

- Location:** The site is located outside the northwest corner of the 105-N Building, approximately 15 meters (50 feet) north of the 105-N Transfer Area.
- Process Description:** The site contains three concrete silos, each 4.9 meters (16 feet) in diameter. Periodically, the contents were shipped to the 200 Area Burial Grounds for permanent disposal. Two of the silos are open bottomed.
- Waste Type:** Equipment
- Waste Description:** This site received byproduct radioactive metallic fuel spacers from the reactor. Quantities were variable based upon reactor operation levels. The radioactively contaminated fuel spacers were temporarily stored in the underground silos and then shipped to the 200 Area Low-Level Burial Grounds for disposal. All spacers were removed from the silos in September 1995.

Code: 120-N-1	Classification: Accepted
Names: 120-N-1; 1324-NA Percolation Pond	Reclassification: None
Type: Pond	Start Date: 1/1/1977
Status: Inactive	End Date: 1/1/1991

Description: The site was remediated in September/October 2000. The remedial activity for sites 100-N-58, 120-N-1 and 100-N-2 was documented in CVP-2001-00021. A Reclassification form was completed for 100-N-58. However for 120-N-1 and 120-N-2, Washington State Department of Ecology rejected the certification of closure from DOE. A post-closure groundwater plan must be submitted to Ecology and approved prior to approval of the Certification of Closure documentation.

Location: The 120-N-1 site was co-located with 100-N-58, 120-N-2 sites in the 100-N Area in the 100-NR-1 Operable Unit. These sites are about 100 m (328 ft) southeast of the 163-N Demineralization Plant Building, and are approximately 400 m (1,312 ft) from the Columbia River.

Release Description: The site has been remediated. This site received intermittent releases of corrosive liquids from the 163-N Demineralized Water Treatment Plant prior to May 1986. The alkaline Hanford soils acted as a buffer to neutralize acidic wastes.

Process Description: In 1977 the 120-N-1, 120-N-2, and 100-N-58 sites were initially constructed as the East Percolation Pond and North and South Settling Ponds, respectively. These unlined ponds received 163-N anion/cation regeneration effluent as well as the 183-N Filtered Water Plant filter backwash effluent. In 1982, because of pond percolation problems, the 183-N filter backwash was rerouted to an effluent disposal pond (130-N-1). During this time period the 100-N-58 site was backfilled.

Liquid wastes were transferred to the north and south settling ponds where particulates were allowed to settle out. After the solids, primarily from the filter backwash effluent, had settled the contents of the settling ponds were transferred to the percolation pond. Between 1983 and 1986, the settling ponds were closed and the percolation pond was enlarged. The regeneration effluent was then discharged directly to the percolation pond through a 20-centimeter (8-inch) diameter PVC valved pipeline. The filter backwash effluent was then discharged to the 130-N-1 Filter Backwash Disposal Pond through a rerouted 40-centimeter (16-inch) diameter PVC pipeline that ran under the 100-N-58 South Settling Pond. The south settling pond was

backfilled. Effluent was treated in the percolation pond by the alternate addition of acidic (cation) column regeneration effluent and alkaline anion column regeneration effluent. This alternate addition of low and high pH effluent served to neutralize the effluents. The percolation pond also made use of the buffering capacity and calcareous nature of the soil underlying it to neutralize these corrosive wastes.

Related Sites/ Structures: The 163-N Building, 183-N Building, 120-N-2 (1324-N) Surface Impoundment, and 100-N-58 (1324-N South Settling Pond) are associated with this site.

Waste Type: Process Effluent

Waste Description: Until 1983, the percolation pond received corrosive wastes from the regeneration of the demineralizer column in the 163-N Demineralizer Plant and filter backwash water. It also received nonregulated neutralized waste from the 1324-N Surface Impoundment and non-regulated process and cooling water from the 163-N Plant. Discharge of dangerous wastes was discontinued in April 1986. After November 1988, the percolation pond received neutralized waste water with a pH range between 4 and 11. The percolation pond no longer receives wastes. Sampling and analysis data of surface soils and sediment are listed in DOE/RL-90-22.

Closure Info: 120-N-1, 120-N-2 and 100-N-58 were addressed as a group. The information below documents information for the group of sites.

The site was remediated in September/October 2000.

Closure performance standards were established by the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These performance standards are documented in the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (CMS/CP) (DOE/RL-90-22) and the Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units (RDR/RAWP) (DOE/RL-2000-16). Permit conditions were established in the Hanford Facility Dangerous Waste Permit (Ecology 1994). While sites 120-N-1, 120-N-2, and 100-N-58 are not included in a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) record of decision (ROD) corrective action activities have been documented in CVP-2001-00021 (CVP).

The soil investigation conducted at these sites in 1992 and 1993 for the CMS/CP indicated that the site did not require soil remediation. Therefore, the selected remedial/corrective action included the removal and disposal of the miscellaneous site structures, including the 120-N-2 liner system, a small sampling shed, fencing, and other miscellaneous debris. The CMS/CP soil investigation indicated that there generally are no contaminants of concern (COCs) for these waste sites. However, because a former overflow area and the waste site influent pipelines required additional sampling (as specified by the CMS/CP), these sites were included in the Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout (SAP) (DOE/RL-2000-07). The verification samples collected under the sampling and analysis plan were analyzed for generally the same inorganic metals and wet chemical anions listed in the CMS/CP soil investigation. The samples were also analyzed for pH. The analytical results from the additional soil sampling and the pipeline scale sampling are presented in Appendix A of the CVP. The analytical results of the soil samples are consistent with the findings of the CMS/CP: soil concentrations are at or below Hanford Site or Washington State background concentrations.

Code: 120-N-2	Classification: Accepted
Names: 120-N-2; 1324-N Surface Impoundment	Reclassification: None
Type: Surface Impoundment	Start Date: 1/1/1986

Status: Inactive**End Date:** 1/1/1988**Description:** The site was remediated in September/October 2000. The remedial activity for sites 100-N-58, 120-N-1 and 100-N-2 was documented in CVP-2001-00021. A Reclassification form was completed for 100-N-58. However for 120-N-1 and 120-N-2, Washington State Department of Ecology rejected the certification of closure from DOE. A post-closure groundwater plan must be submitted to Ecology and approved prior to approval of the Certification of Closure documentation.**Location:** The 120-N-2 site was co-located with 120-N-1 and 100-N-58 sites in the 100-N Area in the 100-NR-1 Operable Unit of the Hanford Site in southeastern Washington State. These sites are about 100m (328 ft) southeast of the 163-N Demineralization Plant Building, and are approximately 400 m (1,312 ft) from the Columbia River.**Process Description:** In 1977 the 120-N-1, 120-N-2, and 100-N-58 sites were initially constructed as the East Percolation Pond and North and South Settling Ponds, respectively. These unlined ponds received 163-N anion/cation regeneration effluent as well as the 183-N Filtered Water Plant filter backwash effluent. In 1982, because of pond percolation problems, the 183-N filter backwash was rerouted to an effluent disposal pond (130-N-1). During this time period the 100-N-58 site was backfilled. Prior to 1982, approximately 1.63E+06 liters/day (4.3E+05 gallons/day) of acidic and caustic effluents were transferred by underground lines to the 120-N-2 Surface Impoundment to be neutralized. Caustic anion regeneration effluent was generally neutralized in the facility by the addition of acidic cation regeneration effluent. Acid cation regeneration effluent was similarly neutralized by the addition of caustic anion regeneration effluent. Once neutralization was complete, the neutralized effluent was discharged to the 120-N-1 Percolation Pond via a 30-centimeter (12-inch) polyvinyl chloride (PVC) drainline and/or a 30-centimeter (12-inch) PVC overflow line.**Related Sites/Structures:** The 163-N Building, 183-N Building, 100-N-58 (1324-N) South Settling Pond and 120-N-1 (1324-NA) Percolation Pond are associated with this site.**Waste Type:** Process Effluent**Waste Description:** The 1324-N Surface Impoundment received corrosive regeneration effluent and process and cooling water from the 163-N Demineralization Plant. Analytical results from surface soils and sediment test pit sampling are reported in DOE/RL-90-22.**Closure Info:** 120-N-1, 120-N-2 and 100-N-58 were addressed as a group. The information below documents information for the group of sites.

The site was remediated in September/October 2000.

Closure performance standards were established by the Washington State Department of Ecology, in concurrence with the U.S. Department of Energy, Richland Operations Office. These performance standards are documented in the 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (CMS/CP) (DOE-RL-90-22) and the Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and Disposal Units (RDR/RAWP) (DOE/RL-2000-16). Permit conditions were established in the Hanford Facility Dangerous Waste Permit (Ecology 1994). While sites 120-N-1, 120-N-2, and 100-N-58 are not included in a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) record of decision (ROD) corrective action activities have been documented in CVP-2001-00021 (CVP).

The soil investigation conducted at these sites in 1992 and 1993 for the CMS/CP indicated that the site did not require soil remediation. Therefore, the selected remedial/corrective action included the removal and disposal of the miscellaneous site structures, including the 120-N-2 liner system, a small sampling shed, fencing, and other miscellaneous debris. The CMS/CP soil

investigation indicated that there generally are no contaminants of concern (COCs) for these waste sites. However, because a former overflow area and the waste site influent pipelines required additional sampling (as specified by the CMS/CP), these sites were included in the Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout (SAP) (DOE-RL-2000-07). The verification samples collected under the sampling and analysis plan were analyzed for generally the same inorganic metals and wet chemical anions listed in the CMS/CP soil investigation. The samples were also analyzed for pH. The analytical results from the additional soil sampling and the pipeline scale sampling are presented in Appendix A of the CVP. The analytical results of the soil samples are consistent with the findings of the CMS/CP: soil concentrations are at or below Hanford Site or Washington State background concentrations.

Code:	120-N-3	Classification:	Accepted
Names:	120-N-3; 163-N Neutralization Pit and French Drain	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1963
Status:	Inactive	End Date:	1/1/1988
Description:	The 163-N Neutralization Pit measures 10.2 meters (33.3 feet) by 2.8 meters (9 feet) and is 2.4 meters (8 feet) deep. It is covered with plywood covers. A portion of the 163-N Neutralization Pit is covered with a concrete slab and metal shed.		
Location:	The site is located west of the 163-N Building		
Release Description:	Intermittent small releases of sulfuric acid and sodium hydroxide from the 163-N Demineralized Water Treatment Plant day-storage tanks were disposed to the soil at this location. The alkaline Hanford soils acted as a buffer to neutralize acidic wastes.		
Process Description:	Intermittent, small releases of sulfuric acid and sodium hydroxide were discharged from 163-N day storage tanks to the site.		
Waste Type:	Chemicals		
Waste Description:	The unit received unknown amounts of corrosive liquids, such as sodium hydroxide and sulfuric acid.		

Code:	120-N-4	Classification:	Accepted
Names:	120-N-4; 1310-N Hazardous Waste Storage Area; 1310-N Non-Hazardous Waste Pad; 1310-N Waste Oil Storage Pad	Reclassification:	None
Type:	Storage Pad (<90 day)	Start Date:	1/1/1985
Status:	Inactive	End Date:	1/1/1989
Description:	The 1310-N Hazardous Waste Storage Area was a concrete pad approximately 20 by 25 meters (70 by 80 feet), surrounded with a concrete berm (curb) and locked chain-link fence. Outside the pad the ground surface is gravel. A small open shed is in the southwest corner of the pad. The site is posted as a Radioactive Materials Area, and is also posted "Contaminated Lead Storage Area (For Re-Use)." The area contain (April 12, 2000) several wrapped objects marked with radioactive warning signs.		
Location:	The site is located immediately south of the 1310-N Facility.		
Release Description:	Waste sites 100-N-26 and 120-N-4 were impacted by a raw water pipeline break on December		

11, 2008. The regulators and tribes have requested that this release information be noted in WIDS. During the removal of the concrete pad at the 1524-N Hazardous waste storage facility on December 11, 2008 an unknown 1.5 inch tap into the export water line was inadvertently contacted. A rupture of the 12 inch export water line and a release of at least 50,000 gallons of raw water onto the surrounding area resulted. A temporary berm was constructed around the area using excess clean 100 Area Borrow Pit material to contain the release and control potential spread of radiological contamination associated with the 1524-N pad. Once the water line was turned off the water in the area immediately percolated into the ground. In-process and post-event surface soil radiological field survey results did not find any contamination spread as a result of the water release. A follow-up review of nearby monitoring wells as well as the standard waste site confirmatory sampling will be used to ascertain potential impacts/conditions.

Process Description: The unit stored waste held in drums and containers from 1985 to 1989. The waste oil drums have been removed. The pad is now used (as of April 12, 2000) to store lead lined burial casks and radioactive materials.

Code:	120-N-7	Classification:	Accepted
Names:	120-N-7; 108-N Acid Unloading Facility French Drain	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1963
Status:	Inactive	End Date:	1/1/1987

Description: The site appears as a vertical broken vitrified clay pipe extending well above grade on a discolored soil mound. Limestone is still visible inside the broken pipe. The lead pipe that delivered acid drips from the boom hose funnel to the french drain is visible at grade level just north of the french drain.

Location: The 120-N-7 French Drain is located at the Railroad Car Unloading Facility, approximately 31 meters (100 feet) east of the 108-N Building.

Release Description: The french drain received unknown amounts of sulfuric acid in intermittent discharges. The average amount released is believed to be less than 3.8 liters (1 gallon).

Process Description: The french drain was used to collect small releases of sulfuric acid from the overhead transfer boom hose coupling which offloaded sulfuric acid from railroad tank cars or tank trucks. A lead funnel and pipe directed the small releases to the french drain.

Waste Type: Chemical Release

Waste Description: The unit received unknown amounts of sulfuric acid in intermittent discharges. Each discharge is estimated to have averaged less than 3.8 liters (1 gallon) of liquid. The concentrated acid may have etched lead from the funnel and pipe as it discharged to the french drain.

Code:	124-N-1	Classification:	Accepted
Names:	124-N-1; 124-N-1 Septic Tank; 100-N Sanitary Sewer System No. 1	Reclassification:	None
Type:	Septic Tank	Start Date:	1/1/1963
Status:	Active	End Date:	

Description: The upper surface of the 124-N-1 Septic Tank is visible and measures 1.5 by 1 meters (58 by 40 inches) and stands 36 centimeters (14 inches) above grade. The circular seepage pit has 18.4

square meters (200 square feet) of infiltration area and 8,700 liters (2,300 gallons) of capacity. Sanitary wastes entered the septic tank through a 10-centimeter (4-inch) vitrified clay pipe connecting the septic tank to the cesspool.

Location: The septic tank and seepage pit are located about 14 meters (15 yards) south of the south wall of the 163-N Water Treatment Building.

Related Sites/ Structures: This site supports the 163-N Water Treatment Building.

Waste Type: Sanitary Sewage

Waste Description: This unit receives approximately 5,300 liters per day (1,400 gallons per day) of sanitary sewage.

Code: 124-N-2 **Classification:** Accepted

Names: 124-N-2; 124-N-2 Septic Tank; 100-N Sanitary Sewer System No. 2 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1987

Description: The unit includes a septic tank and seepage pit. The seepage pit provided approximately 18.4 square meters (200 square feet) of infiltration surface area and 8,700 liters (2,300 gallons) of fluid storage.

Location: The site is located southeast of the 182-N Building

Process Description: This unit received sanitary sewage from the 182-N Building.

Waste Type: Sanitary Sewage

Waste Description: During the period of operation, this unit received an estimated 757 liters/day (200 gallons/day) of sanitary sewage from the 182-N Building.

Code: 124-N-3 **Classification:** Accepted

Names: 124-N-3; 124-N-3 Septic Tank; 100-N Sanitary Sewer System No. 3 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1982

Status: Inactive **End Date:**

Description: A field visit in 1999 did not find any visual evidence of this site.

Location: The unit is located north of the 107-N Building.

Process Description: The unit is a cesspool consisting of a 1,900-liter (500-gallon) precast concrete perforated pipe with a solid cover, resting on a 0.61-meter (2-foot) thick pad of crushed stone. There are no surface indications of the cesspool's location since there is no above-ground access port to the pit.

Waste Type: Sanitary Sewage

Waste Description: When operational, this unit received approximately 170 liters/day (45 gallons/day) of sanitary sewage.

Code: 124-N-4 **Classification:** Accepted

Names: 124-N-4; 124-N-4 Septic Tank; 100-N Sanitary Sewer System No. 4 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1987

Description: The site is located inside an area that is posted as Contamination Area/Radiation Area.

Location: The unit is located in the northeast corner of 100-N Area, outside the fence, directly south of 1301-N Crib (116-N-1) and east of 1310-N.

Process Description: The unit includes a large drain field and two septic tanks, each having a capacity of 63,644 liters (14,000 gallons). The total infiltration surface area of the drain field was 826.8 square meters (8,900 square feet).

Waste Type: Sanitary Sewage

Waste Description: The unit received approximately 136,400 liters/day (30,000 gallons/day) of sanitary sewage.

Code: 124-N-9 **Classification:** Accepted

Names: 124-N-9; 124-N-9 Septic Tank; 100-N Sanitary Sewer System No. 9 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1985

Status: Active **End Date:**

Description: The site is located inside an area that is delineated by light posts and chain.

Location: The unit is located approximately 46 meters (150 feet) northeast of the 1120-N Building.

Process Description: The site consists of 2 septic tanks and a drain field. Each tank has a volume of 11,360 liters (3,000 gallons), and the drain field has an infiltration surface area of 325 square meters (3,500 square feet).

Waste Type: Sanitary Sewage

Waste Description: This unit receives approximately 8,300 liters/day (2,200 gallons/day) of sanitary sewage.

Description:

Code: 124-N-10 **Classification:** Accepted

Names: 124-N-10; 124-N-10 Sanitary Sewer System; Project H-677; 100-N Central Sewer System No. 10; 100-N Sewage Lagoon **Reclassification:** None

Type: Sewage Lagoon **Start Date:** 2/1/1987

Status: Active **End Date:**

Description: Three sewer ponds (or lagoons) (identified in the drawings as the aeration pond, stabilization pond, and infiltration pond) with a total length of 822.75 ft by 220 ft wide with the long axis on a heading of 045 degrees true. The coordinates provided are taken from the drawing and represent the approximate centroid of the aeration pond. The site, which serves a minimum of 27 facilities or buildings, consists of a three pond sewage lagoon facility, a server trunk line and other pipelines, two lift stations, new manholes, and associated sewer system instrumentation and annunciation capability.

Location: The site is located 1 mile northwest of the intersection of N Avenue and Route 4 North cutoff.

The sanitary sewer system lies parallel with and north of the railroad tracks that intersect N Avenue.

Process Description: This system processed domestic human sewage.

Related Sites/ Structures: These ponds are part of the 100-N Central Sewer System No. 10. Piping runs underground to the sewage ponds. Piping is accessible through manholes.

Waste Type: Sanitary Sewage

Waste Description: The maximum design flow for this septic system is 50,000 gallons per day. It is designed for a maximum of 2,500 employees. The site has received domestic wastewater sewage from the 100-N Area and domestic sewage pumped from septic tanks throughout the Hanford Site.

Incidental solids (rags, scum, and other debris) are removed from the system and disposed of as solid waste at an approved disposal site. The discharge from the infiltration pond percolates down to the groundwater.

Code: 128-N-1 **Classification:** Accepted

Names: 128-N-1; 128-N-1 Burning Pit; 100-N Burning Pit **Reclassification:** None

Type: Burn Pit **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1989

Description: The site shows evidence of burning, in the form of burnt trash and cans. Most of the site has been backfilled.

Location: The site is located approximately 460 meters (1,500 feet) northeast of the 1120-N Building, and is southeast of 116-N-3.

Process Description: Combustible materials, such as nuisance vegetation and combustible wastes (office waste, tools and hardware, and potentially paints and solvents), have been burned at this site. After the establishment of the Hanford Central Landfill in the early 1973, the pit was used only for burning nuisance vegetation.

Waste Type: Misc. Trash and Debris

Waste Description: Combustible materials, such as nuisance vegetation and combustible wastes (office waste, tools and hardware, and potentially paints and solvents), have been burned at this site. The quantity of material burned at the site is unknown. Since the establishment of the Hanford Central Landfill (in the early 1970's), this unit has been used for burning nuisance vegetation only.

Code: 130-N-1 **Classification:** Accepted

Names: 130-N-1; 183-N Backwash Discharge Pond; 183-N Filter Backwash Pond; 126-N-1 **Reclassification:** None

Type: Pond **Start Date:** 1/1/1983

Status: Active **End Date:**

Description: The site consists of a natural marsh-like pond which receives filter backwash from the 183-N Water Filter Plant.

Location: The site is located approximately 0.4 kilometers (0.25 miles) southeast of the 1324-N Facility.

Waste Type: Water

Waste Description: The unit receives filter backwash containing polyacrylamide and aluminum sulfate.

Description:

Code: 1908-N **Classification:** Accepted

Names: 1908-N; 1908-N Outfall **Reclassification:** None

Type: Outfall **Start Date:** 1/1/1963

Status: Active **End Date:**

Description: This site consisted of an open-topped, compartmentalized, reinforced concrete outfall structure. A 260 centimeter (102 inch) line discharged into the southeast face of the structure, and a 260 centimeter (102 inch) pipeline exited the northwest face to the Columbia River.

Location: The 1908-N Sealwell (Outfall) is located west of the 109-N Building, west of the 1300-N Emergency Dump Basin and south of the 1301-N Emergency Dump Tank on a steep bank which leads to the river.

Process Description: The site was an outfall structure (seal well) that was used as a sump for several discharge lines and to drop the liquid discharge level for overflow to the river. The outfall also discharged to a flume which was used as an alternative to the river pipelines. An unknown level of radioactive contamination exists within the structure because the discharge lines were associated with the reactor secondary steam system. The outfall received more than 2 million cubic meters per day of single pass raw river water from the Circulating Raw Water (CRW) System, and discharged it to the river. The CRW supplied once-through untreated river water to 16 dump condensers and 7 surface condensers.

Related Sites/ Structures: The following are related to the site: a 259-centimeter (102-inch) River Effluent pipeline, (100-N-77), an emergency outfall flume, (100-N-79), and the 1300-N Emergency Dump Basin 76-centimeter (30 inch) overflow line.

Waste Type: Construction Debris

Waste Description: The 1908-N Sealwell received raw river water used to cool the secondary cooling water for the N Reactor. The reported date was April 18, 1986.

An unknown level of radioactive contamination exists within the structure because the discharge lines were associated with the reactor's secondary steam system. Therefore, while no specific COPCs have been identified, the outfall structure has potential radioactive contamination.

Code: 1908-NE **Classification:** Accepted

Names: 1908-NE; 1908-NE Building; HGP Outfall; HGP SWMU #7 **Reclassification:** Interim Closed Out (6/15/2004)

Type: Outfall **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1988

Description: The site has been interim closed out. The unit consisted of a an open-topped, compartmentalized, reinforced concrete outfall structure.

Location: The unit was located in the 100-N Area, approximately 61 meters (200 feet) downstream from the 181-NE River Pumphouse Building on the Columbia River at river mile 379.6.

Process Description: The outfall received single pass raw river water which had passed through the Hanford Generating Plant (HGP) condensers, as well as waste water from the 100-N-1 Settling Basin.

Related Sites/ Structures: The site was associated with the 100-N-1 Settling Basin, and the 100-N-80 River Effluent

Structures: Pipeline.

Waste Type: Construction Debris

Waste Description: The unit was designed to provide controlled waste water releases from the Hanford Generating Plant (HGP) facility. The unit was permitted under the National Pollutant Discharge Elimination System (NPDES). Releases to the outfall included coolant water, any releases from the HGP building sump prior to the late 1960s, and discharges from the HGP Settling Pond.

The contaminants of potential concern include Strontium-90, cobalt-60, cesium-137, arsenic, barium, cadmium, chromium, lead, selenium, silver, mercury, and PCBs.

Code: 2607-FSM **Classification:** Accepted

Names: 2607-FSM; 609 Building Septic Tank 2607-FSM; 6607-FSM; 100 Area Fire Station Septic Tank; 1607-FSM **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1960

Status: Active **End Date:**

Description: The 6607-FSM Septic Tank is a single-chamber, reinforced concrete tank. This unit includes a drainfield.

Location: The septic system lies at the southwest corner of the 609 Building (100N Fire Station) and northwest of the intersection of Route 1 and Route 4 North in the 600 Area.

Process Description: The 6607-FSM septic tank receives sanitary effluent from the 609 Building and disposes of it through a sub-surface soil absorption system.

Related Sites/Structures: The 6607-FSM septic system is associated with the 609 Building (100N Fire Station).

Waste Type: Sanitary Sewage

Waste Description: The 2607-FSM septic system receives sanitary wastewater at a rate of approximately 550 gallons (2,082 liters) per week.

Code: 600-35 **Classification:** Accepted

Names: 600-35; Debris Area Between 100-N and 100-D Areas **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This relatively flat ground covered with fine gravel chips with little or no vegetation. A well-head (number 87-55) and the 100-N export water line were noted on the southern edge and along the east-west line of the site, respectively. On May 8, 2008, a field evaluation of the site was made by the Orphan Sites Evaluation team. The team described the site as a 15 meter (50 ft) diameter area of wood and metal debris, including a T-handled valve and vent pipe.

Location: The unit location is in the northwest quarter of the northwest quarter of the northeast quarter of Section 27 of T 14N R 26E. The unit is located in a depression just west of Route 4 N between 100-N and 100-D, about 610 meters (2,000 feet) south of junction of the Route 2 N and Route 4 N.

Process Description: This site appears to be a former rock crushing/screening operation area and borrow pit (on the northern edge) with evidence of some dumping.

Waste Type: Misc. Trash and Debris
Waste Description: Miscellaneous surface debris was the only waste identified at this site. This debris includes a ladder, an 20-centimeter (8-inch) diameter steel pipe, metal scrap wire rope, miscellaneous wood debris, pieces of aluminum, and a container lid (no markings). A deteriorated 12 volt lead-acid battery of the type used in heavy equipment. A 208-liter (55-gallon) drum (no marking) was observed approximately 76 meters (250 feet) west of the site.

Code: 600-339 **Classification:** Accepted
Names: 600-339; 100 Area Fire Station Dry Well **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: This site consists of a 1.83 m (six foot) diameter dry well and associated inlet piping, which was part of the original 1960 construction, located west of the 609 Building.
Location: E572202.54 N145349.19

Code: 600-340 **Classification:** Accepted
Names: 600-340; 100 area Fire Station Soil Stained Areas **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: This site consists of two (2) locations one with discolored top soil and the other with a white granular stain surface area.
Location: E572161.02 N145395.78, E572213.75 N145447.13

Code: 600-347 **Classification:** Accepted
Names: 600-347; 100 Area Fire Station Burn Pit **Reclassification:** No Action (11/21/2011)
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of an engineered burn pit. The dimensions of the burn pit are 6 m (20 ft) by 3 m (10 ft) by 1 m (0.9 ft) deep. The site was used to dispose various flammable liquids and petroleum products from approximately 1959 to 1984.
Location: The 600-347 waste site is located 47.6 m (156 ft) northeast of the northeast corner of the 609 Building (100 Area Central Fire Station). The burn pit is at coordinates E572244.99 N145399.31.
Closure Info: Remedial action was determined to be unnecessary, and the confirmatory sampling data has been used to document this subsite for reclassification as a No Action site.

Code: 600-348 **Classification:** Accepted
Names: 600-348; 100 Area Fire Station Underground Storage Tanks **Reclassification:** None
Type: Storage Tank **Start Date:**
Status: Inactive **End Date:**

Description: (500 gallon) fire station gasoline tank removed in late 1987. The second site is a 7571 L (2000 gallon) diesel fuel oil tank and underlying soil used to supply the 609 Building hot water boiler.

Location: E572205.40 N145329.93, E572208.86 N145356.60

Code: 628-2 **Classification:** Accepted

Names: 628-2; 100 Area Fire Station Burn Pit **Reclassification:** None

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:** 1/1/1985

Description: This site is an unmarked pit composed of sand and dirt with sparse vegetation showing signs of stress. The site has ash, debris, and soil discoloration. During a site visit on October 27, 1999, a small shallow pit was observed. A pile of soil at the east end of the pit suggests that the depression was created by heavy equipment. The bottom of the small pit is covered with rock and cobble. There are a few signs of burning (small pieces of charred wood) and some debris in the pit itself. Most of the debris and signs of burning and stressed vegetation are outside of the pit, to the south and west. Debris at the site includes charred wood, metal, electrical wiring and equipment, and roofing material. The vegetation in the area is primarily cheatgrass and bunch grasses with some sagebrush. There are some circular shaped areas with little or no vegetation. It is difficult to determine the extent of the site; the evidence of burning and stress is scattered and mixed with undisturbed areas. There is also scattered debris in surrounding areas that does not appear to have been subject to burning.

Location: This site is located 130 meters (426.5 feet) north of the 100 Area Fire Station.

Process Description: The original information indicates that mainly motor oil and diesel fuel contaminated with water or deemed unusable was burned here. However, there is no supporting written documentation.

Waste Type: Chemicals

Waste Description: The waste site contains motor oil, diesel fuel, and toluene. Other chemicals were potentially burned at the site.

Code: UPR-100-N-1 **Classification:** Accepted

Names: UPR-100-N-1; 100-N 1304-N Dump Tank; Emergency Dump Tank Inlet Valve Box Leak; UN-100-N-1 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: The site is an unplanned release covering an area of ground estimated at 20,000 square feet (1,858 square meters).

Location: The site extends from the 1304-N Emergency Dump Tank to the front of the 181-N River Water Pump House, approximately 45 meters (147 feet) from the Columbia River.

Release Description: On March 27, 1974 an estimated 113,550 liters (30,000 gallons) of radioactive water leaked onto the ground due to a line leak from the inlet valve box near the 1304-N Emergency Dump Tank. The water flowed down the bank from the Emergency Dump Tank, covered the roadway below the tank, and extended to the front of the 181-N Building. An estimated 139 square meters (1,500 square feet) was contaminated outside the 100-N area security fence. The security fence is considered the site boundary.

Related Sites/ Structures: The site is associated with 1322-N Valve Pit, 105-N Lift Station, 1301-N Crib, a 91 centimeter (36 inch) underground pipeline, 1304-N Emergency Dump Tank, and a 76 centimeter (30 inch) underground pipeline.

Waste Type: Process Effluent

Waste Description: The leak consisted of filtered water in the estimated amount of 113,550 liters (30,000 gallons) containing 0.2 Curies of radioactive constituents.

Code: UPR-100-N-2 **Classification:** Accepted

Names: UPR-100-N-2; 100-N FLV-858 Valve Leak; UN-100-N-2 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:** 1/1/1980

Description: The site is on area of ground estimated at 28 square meters (300 square feet).

Location: The release was located in the 100 N Area, on the northeast corner of Emergency Dump Basin (116-N-4), below grade.

Release Description: A crack in a 2.5-centimeter (1-inch) body relief drain line from the FLV858 valve leaked mildly contaminated reactor effluent from a point 3 meters (10 feet) below grade. The leak rate was estimated at 38 liters/minute (10 gallons/minute) and was determined to be due to corrosion of the valve. Estimated surface area affected is 28 square meters (300 square feet).

Related Sites/ Structures: The site is associated with the 105-N Building.

Waste Type: Process Effluent

Waste Description: The release consisted of primary coolant water containing less than 1 curie of beta/gamma.

Code: UPR-100-N-3 **Classification:** Accepted

Names: UPR-100-N-3; Dummy Fuel Transfer Line; Spacer Disposal System Transport Line Leak; UN-100-N-3; UN-116-N-3 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1978

Status: Inactive **End Date:** 1/1/1978

Description: The site began as a 1.2-meter (4-foot) diameter and 0.8-meter (2.5-foot) deep sink hole. Currently, the spill site is within a radiation control zone.

Location: The release occurred in the 100-N Area near the north side of the 105-N Lift Station. The site was about 4.7 meters (15.4 feet) northeast of the 1722N Decontamination Hot Shop, and about 0.16 kilometers (0.1 mile) from the Columbia River. This is also the location for UPR-100-N-10 and UPR-100-N-12.

Release Description: A leak developed in the dummy fuel spacer transfer line, a 7.6-centimeter (3-inch) reinforced plastic pipe extending from the 100-N Fuel Storage Basin to the dummy disposal pit. The leak rate was estimated to be 74.6 liters (25 gallons) per minute. It was not known how long the leak had been occurring. However, due to the size of the sink hole, it was judged to have occurred within the week prior to identification.

Related Sites/ Structures: The site is associated with the 100-N Area Spacer Silos (118-N) and the 105N Fuel Storage

Structures: Basin

Waste Type: Water

Waste Description: The release consisted of storage basin water with an estimated radionuclide release of 0.07 curies of cobalt-60, 0.8 curies of strontium-90, 0.25 curies of cesium-137, 0.14 curies of cerium/praseodymium-144, 0.0004 curies of plutonium-239, and 1.0 curies of tritium (assumed).

Code: UPR-100-N-4 **Classification:** Accepted

Names: UPR-100-N-4; 1322-A Sump Overflow; UN-100-N-4 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1977

Description: The original site of contamination was the 1322-NA (Effluent Water Pilot Plant) floor and ground by the front and rear doors on outside the site also includes the drainage tank in Building 1322-N (Waste Treatment Pilot Plant Facility).

Location: The 1322 Buildings are about 195 meters (640 feet) northeast of the 105-N (Reactor Facility).

Release Description: The 1322-N Drainage Tank top vent sprayed low-level radioactive water. The 1322-NA sink drain backed up and flowed over the 15-centimeter (6-inch) curb and onto the ground in the front and back of the building. The release occurred on May 7, 1977.

Related Sites/Structures: The site is associated with Buildings 105-N, 1322-N, and 1322-NA.

Waste Type: Water

Waste Description: The site received low-level radioactive water. The total activity was 0.5 millicuries.

Code: UPR-100-N-5 **Classification:** Accepted

Names: UPR-100-N-5; 116-N-2 Radioactive Chemical Waste Treatment Storage Facility; 1310-N Chemical Waste Storage Tank Leak; UN-100-N-5 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1972

Status: Inactive **End Date:** 1/1/1972

Description: The release occurred in the 1310-N Radioactive Chemical Waste Handling Facility on the recirculation pump discharge line.

Location: The site is located in the 100N Area northeast of the center of the 105-N (Reactor Facility) approximately 10.4 meters (134 feet) northwest of the 1310-N Chemical Waste Storage Tank and 233 meters (833 feet) from the bank of the Columbia River. The spill site is within a radiation control zone.

Release Description: A leak occurred in the piping at the Radioactive Chemical Waste Handling Facility, between the recirculation pump and the 116-N-2 Tank, and radioactive waste was discharged to the ground. The start date was June 16, 1972 and the end date was June 27, 1972.

Related Sites/Structures: The site is associated with the 105-N Reactor Facility and the 1310-N Chemical Waste Storage Tank.

Waste Type: Water

Waste Description: The leak consisted of 340,650 liters (90,000 gallons) of radioactive wastewater containing

Description: decontaminated chemicals. The waste contained approximately 35 curies of activity, of which 26 curies were cobalt-60. The solution had a pH of approximately 9.

Code: UPR-100-N-6 **Classification:** Accepted

Names: UPR-100-N-6; 1 1/2 Inch Chemical Decontam. Waste Drain Line Leaks; Chemical Decontamination Waste Drain Line Leak; UN-100-N-6; UN-116-N-6 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:**

Description: A site visit in August 2000 found a roped area east of 1714-N. The area was posted Underground Radioactive Material and Controlled Area. A soil mound was inside the roped area.

Location: The site is located between the 1714N building and the 1310-N tank.

Release Description: The buried 3.8-centimeter (1.5 inch) line leaked radiologically contaminated water in the general area between buildings 1714N and 1310N. The release occurred on September 10, 1985.

Process Description: This site is a 3.8 centimeter (1.5 inch) waste line, buried 0.9 meters (3 feet) below grade. This chemical decontamination waste drain line runs between the 1714N (Radioactive Chemical Waste Handling Facility) and the 1310N (Chemical Waste Storage Tank).

Related Sites/ Structures: This drain line interconnects with 1714N (Radioactive Chemical Waste Handling Facility) and 1310N (Chemical Waste Storage Tank).

Waste Type: Process Effluent

Waste Description: The release consisted of approximately 6,813 liters (1,800 gallons) of radiologically contaminated water containing an estimated 0.2 curies cobalt-60, 0.04 curies manganese-54, 0.003 curies ruthenium-103, and 0.003 curies of cesium-137.

Code: UPR-100-N-7 **Classification:** Accepted

Names: UPR-100-N-7; Ten-Inch Radioactive Drain Return Line Leak; UN-100-N-7; UN-116-N-7 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/1985

Description: A leak occurred in a buried 25.4-centimeter (10-inch) drain line between the 109-N Building and the 1909-N Valve Pit.

Location: The leak was located in a section of the buried 25.4 centimeter (10-inch) diameter radioactive drain return pipe between the 109N Building to the 1909-N Valve Pit. This pipe is approximately 69.4 meters (228 feet) from the bank of the Columbia River.

Release Description: Adjacent groundwater monitoring wells detected increased levels of iodine-131, indicating a nearby leak to the water table. Approximately 1,907,842 liters (504,000 gallons) leaked. The release occurred on April 29, 1985.

Related Sites/ Structures: The 25.4 centimeter (10 inch) Radioactive Drain Return (RDR) line interconnects with the 109N Building and the 1909 Valve Pit.

Waste Type: Process Effluent
Waste Description: The release consisted of approximately 1,907,042 liters (504,053 gallons) of radiologically contaminated N-Reactor cooling water containing an estimated 1.0 curies sodium-24, 0.5 curies cobalt-60, 0.09 curies ruthenium-103, 0.4 curies chromium-51, 0.2 curies zirconium-95, 0.3 curies tellurium-132, 0.30 curies manganese-54, 0.1 curies niobium-95, 0.5 curies iodine-131, 1.2 curies iron-59, 0.2 curies cerium-141, 0.2 curies cerium-144, and 0.8 curies technecium-99.

Code: UPR-100-N-8 **Classification:** Accepted

Names: UPR-100-N-8; 1322-A Sump Overflow; UN-100-N-8 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1975

Status: Inactive **End Date:** 1/1/1975

Description: The original site of contamination was the 1322-NA (Effluent Water Pilot Plant) including the area surrounding the sump, floor, various pieces of equipment, and the ground just outside the rear door (south door).

Location: The 1322-NA Building is located approximately 195 meters (640 feet) northeast of the 105-N Reactor Facility. The release took place in the soil immediately outside the south door of 1322-NA Effluent Water Pilot Plant. This is partly on the same location as UPR-100-N-4.

Release Description: The 0.3-centimeter (1/8-inch) tygon sample tube came off the 91-centimeter (36-inch) radioactive drain return line sampler sample line and up to 379 liters (100 gallons) of radioactive water was released to the soil.

Related Sites/Structures: The site is associated with Buildings 105-N, 1322-N, and 1322-NA.

Waste Type: Water

Waste Description: The release contained up to 379 liters (100 gallons) of radioactive water contaminated with mixed fission and activation products to a level of 1,000,000 picocuries/liter. The total activity was 0.5 millicuries.

Code: UPR-100-N-9 **Classification:** Accepted

Names: UPR-100-N-9; 119-N Cooling Water Drain Line Leak; UN-100-N-9 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:**

Description: The site is an excavation site (backhoe) greater than 1.2 meters (4 feet) below grade and includes a 5-centimeter (2-inch) valve on a drain line.

Location: The site is located in the 100N Area, north of 105-N (Reactor Facility) and about 26 meters (85 feet) northwest of 119-N (Air Sample Monitoring Stack Sampler).

Release Description: A backhoe accidentally ruptured a buried 5-centimeter (2-inch) diameter cooling water drain valve during exploratory digging. Contaminated water immediately flowed into the excavation hole around the valve at approximately 19 liters (5 gallons) per minute and maintained a water level 1.2 meters (4 feet) below grade. The release occurred on October 14, 1974.

Related Sites/Structures: The site is associated with the 105-N (Lift Station), the 116-N-1 Crib and Trench, and the 119-N (Air Sample Monitoring Stack Sampler).

Waste Type: Water

Waste Description: The release of 8,327 liters (2,200 gallons) of low-level radioactive contaminated water contained about 500,000 picocuries. The water was released from the 119-N cooling water drain line.

Code: UPR-100-N-10 **Classification:** Accepted

Names: UPR-100-N-10; 100-N Area 105-N Check Valve; Lift Station Gravity Drain Line Leak; UN-100-N-10 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1975

Status: Inactive **End Date:** 1/1/1975

Description: The leak occurred in an area previously marked as a radiation zone.

Location: The leak occurred in the 100-N Area near the north side of the 105-N Lift Station, about 4.7 meters (15.4 feet) northeast of the 1722-N Decontamination Hot Shop, and about 0.16 kilometers (0.1 mile) from the Columbia River. This is also the location for UPR-100-N-3 and UPR-100-N-12.

Release Description: Approximately 379 liters (100 gallons) of contaminated water leaked to the ground during preparations for the removal of a check valve in the gravity drain line to the lift station on May 13, 1975.

Related Sites/ Structures: The leak is associated with the 105-N Reactor Facility.

Waste Type: Water

Waste Description: The release contained 0.001 curies of mixed fission and activation products.

Code: UPR-100-N-11 **Classification:** Accepted

Names: UPR-100-N-11; 100-N Area Valve Bonnet; Five Hundred Pound Valve Bonnet Contamination in Uncontrolled Area; UN-100-N-11 **Reclassification:** None

Type: Unplanned Release **Start Date:** 10/2/1975

Status: Inactive **End Date:** 10/3/1975

Description: The contaminated site consisted of asphalt road, shoulder/roadside, and field area.

Location: The site is located on the east side of Highway 4 North, approximately 45.7 meters (150 feet) southeast of the center line of 100-N access road.

Release Description: A contaminated 227-kilogram (500-pound) valve bonnet, wooden box, and plastic wrapping fell from a truck onto the road and into a field adjacent to the roadway. The wooden box broke open spreading spot contamination on the roadway and in the field. Contamination levels measured were: on roadway blacktop (impact/contact) - 1,000 mrad/hr; on roadway adjacent to where valve hit - 20,000 to 50,000 counts per minute; area where valve came to rest - 5 rads to 10 rads per hour; area adjacent to where valve came to rest - 25,000 to 50,000 counts per minute.

Related Sites/ Structures: The release is associated with the 105-N Reactor Facility.

Waste Type: Equipment

Waste Description: Five to 10 rads per hour were measured where the valve bonnet came to rest in the field.

Waste Description: Measurements of 1,000 millirads per hour were taken where it hit the road; 20,000 to 5,000 counts per minute on 18.6 square meters (200 square feet) of road; and 25,000 to 50,000 on the surface of the field adjacent to the valve bonnet.

Code: UPR-100-N-12 **Classification:** Accepted

Names: UPR-100-N-12; Spacer Transport Line Leak; UN-100-N-12 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/1979

Description: The site began as a 0.6 by 0.9-meter (2 by 3-foot) diameter and 0.46-meter (1.5-foot) deep sink hole. The dimensional limits of the extent of contamination are not provided in reference material. The dimensions for the observed sink hole have been reported. The extent of contamination migration to groundwater is assumed.

Location: The site is located in the 100-N Area near the north side of the 105-N Lift Station, about 4.7 meters (15.4 feet) northeast of the 1722-N Decontamination Hot Shop, and about 0.16 kilometers (0.1 mile) from the Columbia River. This is also the same location as UPR-100-N-3 and UPR-100-N-10.

Release Description: A leak in the dummy fuel spacer transfer line, a 7.6-meter (3-inch) reinforced Bonstrand plastic pipe extending from the 100-N Fuel Storage Basin to the dummy disposal pit. The maximum leak rate was estimated to be 284 liters (75 gallons) per minute. It is not known how long the leak had been occurring. The approximate maximum time the valve could have been open was 55 hours. Dummy spacers were transferred December 4,5,10,11,12,13,14, and January 8. The release was reported March 13, 1979.

Related Sites/Structures: The release is associated with the 100-N Area Spacer Silos (118-N) and 105-N Fuel Storage Basin.

Waste Type: Water

Waste Description: The release consisted of 946,000 liters (250,000 gallons) of storage basin water containing 0.19 curies of cobalt-60, 0.4 curies of cesium-137, and 0.00057 curies of plutonium-239/240. The water was originally from the fuel storage basin and had been used to help dislodge fuel spacers through the spacer transport line. Excavated soil was checked for radioactivity and read 50 to 100 millirem per hour.

Code: UPR-100-N-13 **Classification:** Accepted

Names: UPR-100-N-13; 1314-N Drywell Overflow; 1314-N Loading Station; UN-100-N-13 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1973

Status: Inactive **End Date:**

Description: The 1314-N Liquid Waste Loadout Station is a transfer station consisting of numerous valves, pumps, underground/overhead piping and couplings, and underground tanks.

Location: The release was located at the northern end of the 100N Area, approximately 91 meters (300 feet) from the Columbia River inside the radiation zone at the 1314-N Liquid Waste Loadout Station.

Release Description: N Plant Operations personnel were filling a railroad waste tank car. After approximately 26,500 liters (7,000 gallons) of solution had been pumped into the 75,700-liter (20,000-gallon) waste tank car, solution began overflowing from the tank car fittings. The tank car loading

pump was turned off, and solution began to flow up through the drain in the catch basin beneath the car. The catch basin overflowed into the adjacent dry well, which also filled and overflowed. Approximately 380 liters (100 gallons) of solution flowed out of the dry well and covered 1.9 square meters (20 square feet) of ground. Approximately 284 liters (75 gallons) of spent decontamination solution was released to the ground.

Process Description: The unit receives liquid radioactive waste from 116-N-2 Radioactive Chemical Waste Treatment and Storage Facility, and the 107-N Spent Fuel Basin Recirculation Facility. The effluent is transferred into railway tank cars and transported to the 200 Area for processing and disposal.

Related Sites/Structures: This release is associated with the 116-N-2 Radioactive Chemical Treatment and Storage Facility; 107-N Spent Fuel Basin Recirculation Facility.

Waste Type: Water

Waste Description: The release consisted of 289 liters (75 gallons) of spent decontamination solution containing 0.011 curies.

Code: UPR-100-N-14 **Classification:** Accepted

Names: UPR-100-N-14; 119-N Drain System Leak; UN-100-N-14 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is the soil, near the 119-N Sample Building, that was contaminated during the release.

Location: This site is on the north and east sides of the 116-N Air Stack, and approximately 100 meters (330 feet) north of the 105-N Reactor Building.

Release Description: While maintenance personnel were working on the 119-N drain system, to correct loss of coolant flow in a condensate collection sampler, backflow from the drain occurred. Effluent water was discharged to the ground near the building. This release occurred on August 5, 1974 and is documented on Unusual Occurrence Report number 74-24.

Waste Type: Process Effluent

Waste Description: The release consisted of effluent water containing 0.0008 curies of beta/gamma activity.

Code: UPR-100-N-17 **Classification:** Accepted

Names: UPR-100-N-17; 166-N Diesel Oil Supply Line Leak; UN-100-N-17 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1966

Description: The site is an unplanned release of diesel oil that occurred at the 166-N Tank Farm.

Location: The 166-N Tank Farm is located between the 116-N Air Stack and the 116-N-2 Facility (Golf Ball).

Release Description: External corrosion of a 10.2 centimeter (4 inch) diesel oil supply line, between the oil storage tank and the west dike, caused the line to leak and release diesel oil to the soil in August 1966.

The oil drained through the soil to groundwater, where it migrated toward the Columbia River.

Waste Type: Oil
Waste The leak consisted of 80,000 gallons of diesel oil.
Description:

Code: UPR-100-N-18 **Classification:** Accepted
Names: UPR-100-N-18; 166-N Four-Inch Diesel Oil Supply Line to 184-N Leak; UN-100-N-18 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1973
Status: Inactive **End Date:** 1/1/1973
Description: The site is approximately 757 liters of diesel oil that drained to the soil (per PNL-6456).
Location: The release occurred between the 166-N Tank Farm and the 184-N Diesel Oil Day Tank.
Release Description: External corrosion caused leakage in the 10.2-centimeter (4-inch) diesel oil supply line in August 1973.

Waste Type: Oil
Waste The leak consisted of diesel oil.
Description:

Code: UPR-100-N-19 **Classification:** Accepted
Names: UPR-100-N-19; 184-N Day Tank Fuel Oil Spill; UN-100-N-19; UN-116-N-19 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1984
Status: Inactive **End Date:**
Description: A site visit in July 1999 found that the Day Tanks have been removed. The tank foundations are located inside an area surrounded by light post and chain.

Location: The release occurred at the 184-N Fuel Oil Day Tank.
Release Description: The day tank was overfilled, and fuel oil spilled onto the ground in April 1984.

Waste Type: Oil
Waste The release consisted of No. 6 fuel oil.
Description:

Code: UPR-100-N-20 **Classification:** Accepted
Names: UPR-100-N-20; 166-N Two-Inch Diesel Oil Return Line Leak; UN-100-N-20; UN-116-N-20 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1985
Status: Inactive **End Date:** 1/1/1985
Description: This waste site is approximately 757 liters of diesel oil that drained to the soil. The contaminated soil was removed and properly disposed (per WHC-SD-EN-TI-251).

Location: The release site was located near Tank 1 in the 166-N Tank Farm.

Release Description: External corrosion caused the 5 centimeter (2 inch) diesel oil return line to leak in June 1985

Release

Description:

Waste Type: Oil

Waste Description: The release consisted of Number 2 diesel oil.

Code: UPR-100-N-21

Classification: Accepted

Names: UPR-100-N-21; 184-N Diesel Oil Day Tank Overflow; UN-100-N-21; UN-116-N-21

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1986

Status: Inactive

End Date:

Description: The Day Tanks have been removed. The tank foundations are located inside a chained area marked 184-ND.

Location: The site was located at the 184-N Diesel Oil Day Tank.

Release Description: Failure of the tank-level annunciator caused overfilling of the day tank during an oil transfer on April 25, 1986.

Waste Type: Oil

Waste Description: The release consisted of Number 2 diesel oil.

Description:

Code: UPR-100-N-22

Classification: Accepted

Names: UPR-100-N-22; 184-N Diesel Oil Supply Line Leak No. 1; UN-100-N-22; UN-116-N-22

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1986

Description: Approximately 3,785 liters of diesel oil was released to the soil (per WCH-SD-EN-TI-251).

Location: The site was located just outside the 184-N Power House

Release Description: External corrosion caused the diesel oil supply line to leak. The release occurred on June 23, 1986.

Waste Type: Oil

Waste Description: The release consisted of Number 2 diesel oil.

Description:

Code: UPR-100-N-23

Classification: Accepted

Names: UPR-100-N-23; 184-N Diesel Oil Supply Line Leak No. 2; UN-100-N-23; UN-116-N-23

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Description: This site is approximately 757 liters of diesel oil released to the soil (per WHC-SD-EN-TI-251).

Location: The site was located near the Diesel Oil Day Tank for the 184-N Power House.

Release Description: External corrosion of the piping system was the cause of the leak on January 10, 1987. The

Description: leak was detected through inventory discrepancy.

Waste Type: Oil

Waste The release consisted of Number 2 diesel oil.

Description:

Code: UPR-100-N-24

Classification: Accepted

Names: UPR-100-N-24; 166-N Fuel Oil Supply Line
Leak; UN-100-N-24; UN-116-N-24

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Description: An unknown amount of fuel oil was released to the soil due to corrosion of the fuel supply line (per WHC-SD-EN-TI-251).

Location: The site was located near the 166-N Tank Farm, on the west side of the No. 6 fuel oil tank.

Release Description: The leak was caused by external corrosion brought on by a leaking heat trace line. Leakage occurred during routine oil transfer, and waste oil was periodically removed. The release occurred on February 1, 1987

Process Description: The leak occurred during routine oil transfer.

Waste Type: Oil

Waste An unknown amount of Number 6 fuel oil.

Description:

Code: UPR-100-N-25

Classification: Accepted

Names: UPR-100-N-25; UN-100-N-25; Uncontrolled
Venting of 1310-N Tank

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: There is no visual evidence of this release.

Location: The site was located adjacent to the 1310-N Chemical Waste Tank, 366 meters (1,200 feet) northeast of the 105-N Building.

Release Description: On May 15, 1975, the annual chemical decontamination of the N Reactor primary piping was initiated. During this process, radioactive material is flushed from the primary system to the 1301-N storage tank. An operator was stationed at an open manhole (on top of the tank) to confirm that water was entering the tank. Upon observing water flow, the manhole cover was supposed to be replaced to prevent the release of unfiltered air from the tank. As the operator was beginning to replace the manhole cover, a forceful spray of water came out of the manhole. The surge lasted approximately one minute. An estimated 378 to 1900 liters (100 to 500 gallons) of contaminated water was released to the ground inside the posted Radiation Zone. Smearable contamination up to 20,000 counts per minute was found.

Description: visual evidence of this release.

Location: The release occurred adjacent to the 1304-N Emergency Dump Tank.

Release Description: During a drawdown test, the 1304-N Emergency Dump Tank overflowed, spilling primary coolant water. No water reached the river. The release occurred on July 22, 1974.

Related Sites/ Structures: The site is associated with the 1304-N tank (100-N-57).

Waste Type: Water

Waste Description: The release consisted of primary coolant water containing fission and activation products contaminating the area to a maximum of 500 counts/minute.

Code: UPR-100-N-31 **Classification:** Accepted

Names: UPR-100-N-31; Radioactive Effluent Water Spill Near 116-N-1 (1301-N); UN-100-N-31 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:**

Description: The release site is not currently marked or posted.

Location: The release occurred on the west side of the berm just west of the 1301-N Liquid Waste Disposal Facility.

Release Description: While sample lines were being installed in a 15-centimeter (6-inch) steel casing through the berm on the west side of the 1301-N Crib, the water level in the crib was raised 38 to 46 centimeters (15 to 18 inches) as a result of an Emergency Dump Tank drawdown test. De to the increased water level, approximately 3785 liters (1000 gallons) of effluent was released, contaminating 186 square meters (2,025 square feet) of soil.

Related Sites/ Structures: The 116-N-1 Crib and Trench was the originator of the liquid. Also related was 100-N-63, 100-N Reactor (1314-N, 116-N-1 and 116-N-3) TSD Underground Pipelines (See Subsites)

Waste Type: Water

Waste Description: The release consisted of radioactive effluent containing fission and activation products. The gross beta/gamma concentration of the spilled water was 700 disintegrations/minute/milliliter.

Code: UPR-100-N-32 **Classification:** Accepted

Names: UPR-100-N-32; 1304-N Dump Tank; Emergency Dump Tank Bypass Line Leak; UN-100-N-32 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: Approximately 3,785 liters of effluent water was released to the soil. Most of the contaminated soil was removed; the remaining contamination was covered with clean fill (per WHC-SD-EN-TI-251).

Location: The release occurred on the southeast side of the 1304-N Emergency Dump Tank.

Release Description: A leaking check valve in the Emergency Dump Tank bypass line released radioactive effluent water to the ground. The release occurred on September 16, 1974.

Waste Type: Water

Waste Description: The release consisted of radioactive effluent water containing fission and activation products. A mud sample read 20,000 counts/minute. The water was analyzed for gross activity. It was estimated that less than 10 millicuries of radioactive material remained on the ground.

Code: UPR-100-N-35 **Classification:** Accepted

Names: UPR-100-N-35; 100-N Fuel Basin Drainage System Leak; 105-N Fuel Storage Basin Drainage System Leak; UN-100-N-35; UN-116-N-35 **Reclassification:** None

Type: Unplanned Release **Start Date:** 2/28/1986

Status: Inactive **End Date:** 11/1/1986

Description: The release occurred at the 105-N Reactor Building.

Location: This leak occurred under the western end of the 105-N Reactor core, which is being left in place as part of the Interim Safe Storage (ISS) project.

Release Description: Routine sampling of the 100-N Area groundwater wells detected slightly elevated levels of iodine-131. Drawdown tests on the basin determined that the leak was not from the basin. Further tests and investigations determined the intermittent leak to be coming from a sub-basin drain line approximately 8.5 meters (28 feet) below the ground. The leak, estimated to be less than 11 liters (3 gallons) per minute, occurred only during feed and bleed (addition of water) of the 100-N Fuel Basin.

Waste Type: Water

Waste Description: The release consisted of radioactively contaminated water containing an estimated 1.6 curies manganese-5, 0.4 curies cobalt-60, 0.3 curies niobium-95, 0.1 curies iodine-131, 0.4 curies cesium-137 and 0.3 curies cerium-144.

Code: UPR-100-N-36 **Classification:** Accepted

Names: UPR-100-N-36; 184N; 184N Annex; Diesel Generator Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The unit is in a graveled area previously disturbed from historic spills.

Location: The site is located between Buildings 153N and 184N.

Release Description: Numerous spills of diesel fuel and motor oil used for normal operation and maintenance occurred over a 13 year period. During this period, the site was used as a diesel air compressor staging area.

Waste Type: Oil

Waste Description: Evidence of spills include stained gravel and a strong smell of petroleum products in the soil beneath (noted during an excavation).

Code: UPR-100-N-37 **Classification:** Accepted

Names: UPR-100-N-37; HGP Transformer Yard Oil Stained Gravel; SWMU #1 **Reclassification:** Interim Closed Out (6/15/2004)

Type: Unplanned Release **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1986

Description: The site has been remediated and interim closed out. Transformers were sitting on a 3-meter (10-foot) square concrete pedestal on a gravel pad. Oil stains were visible at the base of every transformer in the yard.

Location: The transformer yard was located northwest of the 185-N Building, west of the 100-N operation area.

Process Description: The former HGP was located in the 185-N Building and consisted of two 430-megawatt turbine generators that operated from 1966 until 1986 using steam from the adjacent 100-N production reactor for generation of electricity. Mineral oil containing polychlorinated biphenyls (PCB's) and solvents was used routinely during equipment maintenance. Washington Public Power Supply System personnel indicated that dielectric fluid was used in the transformer that did not contain PCB's.

Waste Type: Oil

Waste Description: Dielectric fluid consisting of mineral oil has seeped onto the ground. Washington Public Power Supply System (WPPSS) personnel have verbally stated that polychlorinated biphenyls (PCBs) have never been used in the transformers. However, the RCRA Facility assessment report states that, based on the dates of operation, the presence of PCB's is suspect.

Code: UPR-100-N-39 **Classification:** Accepted

Names: UPR-100-N-39; Corridor 22 Suspect Liquid Unplanned Release (Cleaned Up) **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a concrete slab and hatch cover posted "Surface Contamination." The surrounding area is gravel.

Location: In the 100-N Area, the site is located just outside the Corridor 22 doorway in the southwest area of the 105-N Reactor Building.

Release Description: In 1983 or 1984, several hundred liters of radioactively contaminated water was spilled outside Corridor 22. Scrub water from the Fission Product Filter Trap overflowed and discharged to the ground.

Related Sites/ Structures: The 105-N Fission Product Filter Trap is associated with the site.

Waste Type: Water

Waste Description: Several hundred liters of radioactively contaminated water from the Fission Product Filter Trap overflowed and discharged to the ground.

Code: UPR-100-N-42 **Classification:** Accepted

Names: UPR-100-N-42; 10/9/87 184-N; 184-N Day Tank Area Liquid Unplanned Release; Day Tank Diesel Oil Spill **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1987

Status: Inactive **End Date:**

Description: The 184-N Day Tank Area is surrounded by a 1.5-meter (4.8-foot) concrete wall that is 25

meters (85 feet) long by 12.8 meters (42 feet) wide, has a sand floor, and contains two 130,000 liters (35,000 gallons) Number 6 fuel oil tanks and one 30,000 liter (8,000 gallon) diesel oil tank.

Location: The 184-N Day Tank area is located north of the 184-N Power House.

Release Description: On October 9, 1987, an unknown amount of diesel oil was spilled.

Waste Type: Oil

Waste Description: The site received diesel oil.

Code: UPR-100-N-43 **Classification:** Accepted

Names: UPR-100-N-43; 166-N / 184-N Pipelines Liquid Unplanned Release 2 (4/26/89; Cleaned Up) **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1989

Status: Inactive **End Date:**

Description: The release site occurred at the oil supply pipe from the 166-N to 184-N Buildings. The diesel oil day tank is connected to the 166-N Storage tanks by a 10 centimeter (4 inch) underground supply line.

Location: The leak occurred at three locations along the pipeline, but the three locations were not provided in the historical documentation. The WIDS site is mapped as one data point, about 49 meters (160 feet) southeast of the 105-N Reactor Building, between the 184-N Building and the 184-N Day Tank Area.

Release Description: A diesel oil leak occurred at three locations along the pipeline from 166-N to 184-N Buildings at three different flange joints. The exact location of these flange joints is not given in the referenced descriptions. The release was reported on April 26, 1989.

Waste Type: Oil

Waste Description: The spill was diesel oil from the diesel oil supply line to the 184-N Day Tank.

Description:

200-BC-1

Code: 216-B-14	Classification: Accepted
Names: 216-B-14; 216-BC-1 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1956
Description:	The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs and the 216-BC-201 siphon tank were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.
Location:	The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.
Process Description:	The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.
Related Sites/ Structures:	The site is associated with the 216-BC-201 Siphon Tank, 200-E-222-PL, and UPR-200-E-83.
Waste Type:	Process Effluent
Waste Description:	The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building during uranium recovery operations. The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-15	Classification: Accepted
Names: 216-B-15; 216-BC-2 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1957
Description:	The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.
Location:	The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.
Process Description:	The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission

products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.

Related Sites/ Structures: The site is associated with the 216-BC-201 Siphon Tank, 200-E-222-PL and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building during uranium recovery operations. The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-16

Classification: Accepted

Names: 216-B-16; 216-BC-3 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1956

Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.

Location: The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Process Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.

Related Sites/ Structures: The site is associated with the 216-BC-201 Siphon Tank, 200-E-222-PL and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-17	Classification: Accepted
Names: 216-B-17; 216-BC-4 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1956
Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.	
Location: The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.	
Process Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.	
Related Sites/ Structures: The site is associated with the 216-BC-201 Siphon Tank, 200-E-222-PL and UPR-200-E-83.	
Waste Type: Process Effluent	
Waste Description:	The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate. Curren (1972) states that the 216-B-17 crib received tank farm first cycle scavenged waste in January 1956.

Code: 216-B-18	Classification: Accepted
Names: 216-B-18; 216-BC-5 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1956
Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.	
Location: The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.	
Process Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission	

products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.

Related Sites/ Structures: The site is associated with the 216-BC-201 Siphon Tank, 200-E-222-PL and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant from 221-U Building.

The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-19

Classification: Accepted

Names: 216-B-19; 216-BC-6 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1957

Status: Inactive

End Date: 1/1/1957

Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. The area has been covered with clean soil and posted as an Underground Radioactive Material area. There are concrete AC 540 markers to identify the site.

Location: The crib is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Process Description: The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs received tri-butyl phosphate waste from the U-Plant Uranium Recovery operations and scavenged tank farm waste via underground pipelines. From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U Plant to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was precipitated by adding ferrocyanide. The addition of ferrocyanide to the waste was called "scavenging". The supernate liquor was released to the ground in the BC Cribs and Trenches via underground pipelines and above ground pipe extensions. The unit is a dispersion structure, 3.0 by 3.0 by 0.9 meters (10 by 10 by 3 feet) high, made of wood, cinder block, and steel, over a 1.5-meter (5-foot) bed of 7.6-centimeter (3-inch) gravel, with a 35.6-centimeter (14-inch) inlet pipe located 1.8 meters (6 feet) below grade. The bottom dimensions of the excavation are 12.2 by 12.2 meters (40 by 40 feet) and 3.96 meters (13 feet) deep. The side slope is 2:1.

Related Sites/ Structures: The site is associated with the 216-BC-201 Siphon Tank and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U

Building. The waste is high in salt and is neutral to basic. The waste contained inorganic

compounds such as ferrocyanide, nitrate and phosphate. Curren (1972) states that the 216-B-19 crib received both U Plant and Tank Farm scavenged waste.

Code:	216-B-20	Classification:	Accepted
Names:	216-B-20; 216-B-20 Trench; 216-BC-7 Trench	Reclassification:	None
Type:	Trench	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1956
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations.		
Location:	The trench is located south of the 200 East Area in the BC Crib Area (across Route 4S). The BC Cribs and Trenches are located inside the BC Controlled Area.		
Release Description:	See UPR-200-E-83		
Process Description:	From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced through precipitation by adding ferrocyanide. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. The trench was divided into 19-meter (62.5-foot) sections by 0.6-meter (2-foot) high earthen dams. The side slope is 1:1.5. The depth was designed to be 3 meters (10 feet) but is often documented as 1.8 meters (6 feet).		
Related Sites/ Structures:	The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.		
Waste Type:	Process Effluent		
Waste Description:	The site received scavenged waste from uranium recovery (tributyl phosphate [TBP] solvent extraction from the 221-U Building). The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate.		

Code:	216-B-21	Classification:	Accepted
Names:	216-B-21; 216-B-21 Trench; 216-BC-8 Trench	Reclassification:	None
Type:	Trench	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1956
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations.		
Location:	The unit is located on the west side of the 216-B-20 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.		
Release Description:	See UPR-200-E-83		
Process Description:	From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth		

Description: phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ The trench is associated with 221-U and UPR-200-E-83.

Structures:

Waste Type: Process Effluent

Waste The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U

Description: Building. The waste is high in salt and is neutral to basic. The waste includes inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-22

Classification: Accepted

Names: 216-B-22; 216-B-22 Trench; 216-BC-9 Trench

Reclassification: None

Type: Trench

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1956

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench was divided into 19 meters (62.5 foot) sections by 0.6-meter (2 foot) high earth dams. The side slope is 1:1.5. The depth was designed to be 3.7 meters (12 feet), but some documents report approximately 1.8 meters (6 feet).

Location: The unit is located on the west side of the 216-B-21 Trench, south of the 200 East Area (across Route 4S). The BC Cribs and Trenches are located inside the BC Controlled Area.

Release See UPR-200-E-83

Description:

Process From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 received and 216-B-52 waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ The trench is related to 221-U and UPR-200-E-83.

Structures:

Waste Type: Process Effluent

Waste The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U

Description: Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate

Code: 216-B-23

Classification: Accepted

Names: 216-B-23; 216-B-23 Trench; 216-BC-10 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1956

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is divided into eight 19-meter (62.5-foot) sections by 1.2-meter (4-foot) high earth dams. The unit has a 1:1.5 side slope.

Location: The unit is south of the 200 East Area (across Route 4S) . The BC Cribs and Trenches are located inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate

Code: 216-B-24 **Classification:** Accepted

Names: 216-B-24; 216-B-24 Trench; 216-BC-11 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1956

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is divided into eight 19-meter (62.5-foot) sections by 1.2-meter (4-foot) high earthen dams. It has a 1.5:1 side slope.

Location: The unit is directly south of the 216-B-23 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20

through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste: The site received the scavenged tributyl phosphate (TBP) supernatant from 221-U Building.

Description: The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-25

Classification: Accepted

Names: 216-B-25; 216-B-25 Trench; 216-BC-12 Trench

Reclassification: None

Type: Trench

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1956

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is divided into eight 19-meter (62.5-foot) sections by 1.2-meter (4-foot) high earthen dams. It has a 1.5:1 side slope.

Location: The site is directly south of the 216-B-24 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U

Description: Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-26

Classification: Accepted

Names: 216-B-26; 216-B-26 Trench; 216-BC-13 Trench

Reclassification: None

Type: Trench

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1957

Description: A portion of this trench was excavated in 2008. The BC trenches were surface stabilized as a

unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations.

Location: The site is directly south of the 216-B-25 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. Although some documentation states the trench is divided into eight 19-meter (62.5-foot) sections by 1.2-meter (4-foot) high earthen dams with a of 1.5:1 side slope, a 1956 photograph shows the trench was divided into only three sections by earth dams.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, phosphate and nitrate

Code: 216-B-27 **Classification:** Accepted

Names: 216-B-27; 216-B-27 Trench; 216-BC-14 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1957

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is divided into eight 19-meter (62.5-foot) sections, separated by 1.2-meter (4-foot) high earthen dams. It has a 1.5:1 side slope.

Location: The site is directly south of the 216-B-26 Trench, south of the 200 East Area (across Route 4S). The BC Cribs and Trenches are located inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83

Related Sites/**Structures:****Waste Type:** Process Effluent**Waste Description:** The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate**Code:** 216-B-28 **Classification:** Accepted**Names:** 216-B-28; 216-B-28 Trench; 216-BC-15 Trench **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1957**Status:** Inactive **End Date:** 1/1/1957**Description:** The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench construction divided it into eight 19-meter (62.5-foot) sections, separated by 1.2-meter (4-foot) high earthen dams. It has a 1.5:1 side slope.**Location:** The unit is directly south of the 216-B-27 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.**Release Description:** See UPR-200-E-83**Process Description:** From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. The following are related to the unit: eight 7.62-centimeter (3-inch) Schedule 40 pipes, approximately 6.7 meters (22 feet) long, placed along the side slope, 19.2 meters (63 feet) apart; eight 7.62-centimeter (3-inch) gate valves for the above pipes, at ground level; wooden cover composed of three 2 by 4s, spaced 3 meters (10 feet) apart, running the length of the unit, with 1 by 6s crossing the width, 1.2 meters (4 feet) apart; 4 by 4 support stakes, 0.76 meters (2 feet 6 inches) long, spaced 2.4 meters (8 feet) apart to secure the wooden cover to the unit.**Related Sites/** This trench is related to UPR-200-E-83.**Structures:****Waste Type:** Process Effluent**Waste Description:** The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. The waste contained inorganic compounds such as ferrocyanide, nitrate and phosphate.**Code:** 216-B-29 **Classification:** Accepted**Names:** 216-B-29; 216-BC-16 Trench **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1957**Status:** Inactive **End Date:** 1/1/1957**Description:** The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered

with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).

Location: The trench is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with 221-U uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-30 **Classification:** Accepted

Names: 216-B-30; 216-B-30 Trench; 216-BC-17 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1957

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).

Location: The unit is directly south of the 216-B-29 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Release See UPR-200-E-83

Description:

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-31 **Classification:** Accepted

Names: 216-B-31; 216-B-31 Trench; 216-BC-18 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1957

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).

Location: The unit is directly south of the 216-B-30 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.

Release See UPR-200-E-83

Description:

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.

Related Sites/ The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Structures:**Waste Type:** Process Effluent**Waste Description:** The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-32 **Classification:** Accepted**Names:** 216-B-32; 216-B-32 Trench; 216-BC-19 Trench **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1957**Status:** Inactive **End Date:** 1/1/1957**Description:** The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).**Location:** The unit is directly south of the 216-B-31 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.**Release Description:** See UPR-200-E-83**Process Description:** From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area.**Related Sites/ Structures:** The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.**Waste Type:** Process Effluent**Waste Description:** The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-33 **Classification:** Accepted**Names:** 216-B-33; 216-B-33 Trench; 216-BC-20 Trench **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1957

Status:	Inactive	End Date:	1/1/1957
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized.		
Location:	The unit is directly south of the 216-B-32 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.		
Process Description:	From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).		
Related Sites/ Structures:	The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.		
Waste Type:	Process Effluent		
Waste Description:	The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.		

Code:	216-B-34	Classification:	Accepted
Names:	216-B-34; 216-BC-21 Trench	Reclassification:	None
Type:	Trench	Start Date:	1/1/1957
Status:	Inactive	End Date:	1/1/1957
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The site is a trench that was used for disposal of medium-activity liquid waste. The trench has been backfilled and the area has been surface stabilized.		
Location:	The unit is directly south of the 216-B-33 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area. The BC Cribs and Trenches are located inside the BC Controlled Area.		
Process Description:	From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20		

through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. The trench was a long narrow excavation with a 1:1.75 side slope. It was divided crosswise into two equal sections by an earthen dam. The dam was 1.5 meters (5 feet) high and 1.5 meters (5 feet) wide at the top. A 10.2 centimeter (4 inch) Schedule 40 pipe ran along the top edge of the trench. Four 7.62-centimeter (3-inch) Schedule 40 pipe sections extended laterally from the 10.2-centimeter (4-inch) pipe, down the side slope into the trench. Liquid discharge into the trench was controlled by gate valves located at the top of the lateral lines. A cover, constructed of 1 by 6 and 2 by 4 wood framing and sisalkraft paper, extended the length of the trench. The vertical distance from the cover to the trench bottom was a minimum of 1.5 meters (5 feet).

Related Sites/ Structures: The trench is associated with the U Plant uranium recovery process and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building. The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-52 **Classification:** Accepted

Names: 216-B-52; 216-B-52 Trench; 216-BC-22 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1958

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations.

Location: The unit is immediately north of the 216-B-23 Trench, south of the 200 East Area (across Route 4S) in the BC Crib Area.

Process Description: From 1952 to 1958, waste containing uranium and fission products, produced by the bismuth phosphate separations process, were removed from underground storage tanks and reprocessed at 221-U to recover the uranium from the waste. After the uranium was removed, the cesium and strontium content of the effluent was reduced by precipitation. The supernate liquor was released to the ground in the BC Cribs and Trenches. A total of 16 unlined trenches, 216-B-20 through 216-B-34 and 216-B-52 received waste from the Uranium Recovery Process. Trenches 216-B-53A, 216-B-53B, 216-B-54 and 216-B-58 received laboratory and PRTR waste from 300 Area. The unit is divided in half by an earthen dam at the center. The dam is 1.5 meters (5 foot) high and 1.5 meters (5 foot) wide at the top. The side slope of the trench is 1.25:1.

Related Sites/ Structures: The site is associated with 221-U and UPR-200-E-83.

Waste Type: Process Effluent

Waste Description: The site received scavenged waste from the uranium recovery process in 221-U (tributyl phosphate [TBP] solvent extraction). The waste is high in salt and is neutral to basic. It contained inorganic compounds such as ferrocyanide, nitrate and phosphate.

Code: 216-B-53A **Classification:** Accepted

Names: 216-B-53A; 216-B-53A Trench; PRTR Trench **Reclassification:** None

Type:	Trench	Start Date:	1/1/1965
Status:	Inactive	End Date:	1/1/1965
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations.		
Location:	The trench is located south of the 200 East Area (across Route 4S) in the BC Crib Area. It is located inside the BC Controlled Area.		
Release Description:	On September 29, 1965, an accident occurred in the 300 Area when some test fuel at the Plutonium Recycle Test Reactor (PRTR) in the 309 building failed, causing failure of the process tube which contaminated the 309 reactor's moderator coolant system. The Rupture Loop Ion Exchange (RLIX) test loop and the PRTR main cleanup system were both contaminated with residual plutonium fuel and fission products. Nearly 3.8 million liters (1 million gallons) of light water was initially contaminated. However additional cooling water was added over many days following the accident and the contaminated water volume rose to nearly 53 million liters (14 million gallons). The contaminated effluent was transferred to the 340 facility and then transported by tanker trucks to the 200 Area. The trucking of contaminated liquid continued on an around the clock basis through October 1965. Some contaminated equipment was transported to the 200 North Area and stored in 212-N.		
Process Description:	The trench was active during October and November 1965. The site received waste from a liquid release at the Plutonium Recycle Test Reactor (PRTR) in the 300 Area. Contaminated liquid was transported to the 200 Area via tanker trucks. Use of the trench discontinued when specific retention capacity was reached. Of all the specific retention trenches at this location, only 216-B-53A is considered to be a TRU waste site, containing 100 grams of plutonium. The trench was divided into two sections by an earthen dam at the center. The dam was 1.5 meters (5 feet) high and 12.7 centimeter (5 inches) wide at the top. The side slope of the open trench was 1.75:1.		
Related Sites/Structures:	The trench is related to the 309 building, the 340 facility and an incident that occurred in the 309 building ion exchange column (sitecode 309-WS-2). It is located inside the BC Radiologically controlled area UPR-200-E-83.		
Waste Type:	Process Effluent		
Waste Description:	The site received waste from the Plutonium Recycle Test Reactor in the 300 Area. The waste is neutral to basic. This trench received 100 grams of plutonium.		

Code:	216-B-53B	Classification:	Accepted
Names:	216-B-53B; 216-B-53B Trench; 216-B-53 Trench	Reclassification:	None
Type:	Trench	Start Date:	1/1/1962
Status:	Inactive	End Date:	1/1/1963
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The BC Cribs and Trenches are located inside the radiologically controlled area known as the BC Controlled Area (UPR-200-E-83).		
	The trench is divided into two sections by an earthen dam at the center. The dam is 1.5 meters (5 feet) high and 12.7 centimeter (5 inch) wide at the top. The side slope is 1.75:1.		
Location:	The trench is located south of the 200 East Area (across Route 4S) in the BC Crib Area. The		

trench is inside the BC Controlled Area.

Release Description: See UPR-200-E-83

Process Description: Liquid waste from the 300 Area laboratory facilities was sent to the 340 facility via the process sewer. Waste that was above the release limits for the 300 Area Process Ponds was sent by tanker truck to the 200 Area for disposal.

Related Sites/ Structures: The trench is associated with 300 Area laboratory waste and the 340 facility.

Waste Type: Process Effluent

Waste Description: The site received liquid waste from the 300 Area Hanford Laboratory Operations. The waste is low in salt and is neutral to basic.

Code: 216-B-54	Classification: Accepted
Names: 216-B-54; 216-B-54 Trench	Reclassification: None
Type: Trench	Start Date: 1/1/1963
Status: Inactive	End Date: 1/1/1963

Description: The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is located inside the Radiologically Controlled Area boundaries known as the BC Controlled Area (UPR-200-E-83).

Location: The trench is located south of the 200 East Area (across Route 4S). The trench is within the BC Controlled Area.

Release Description: In 1969, contaminated Russian thistles were found growing on trenches 216-B-53A, 216-B-53B and 216-B-54. The weeds had a maximum dose rate of 1500 millirem per hour. The contaminated weeds were removed and buried. Action was taken to inhibit weed growth on the trenches.

Process Description: Liquid waste from the 300 Area laboratory facilities was sent to the 340 facility via the process sewer. Waste that was above the release limits for the 300 Area Process Ponds was sent by tanker truck to the 200 Area for disposal. Although some reference documents state the trench was active from 1963 to 1965, ARH-947 and ARH-2806 state the trench was activated in March 1963 and removed from service in October 1963. The trench was divided into two sections by an earthen dam at the center. The dam was 1.5 meters (5 feet) high and 12.7 centimeter (5 inches) wide at the top. The side slope of the open trench was 1.75:1.

Related Sites/ Structures: The trench is associated with the 300 Area laboratory facilities and the 340 facility.

Waste Type: Process Effluent

Waste Description: The site received waste from the Hanford Laboratory Operations (BNWL) in the 300 Area. The waste is low in salt and is neutral to basic.

Code: 216-B-58	Classification: Accepted
Names: 216-B-58; 216-B-58 Trench; 216-B-59 Crib	Reclassification: None

Type:	Trench	Start Date:	1/1/1965
Status:	Inactive	End Date:	1/1/1967
Description:	The BC trenches were surface stabilized as a unit. The backfilled trenches have been covered with clean soil and posted as Underground Radioactive Material. Concrete AC 540 markers outline the area where the trenches are located, but do not identify specific trench locations. The trench is within the posted Radiologically Controlled Area known as the BC Controlled Area (UPR-200-E-83). The trench was divided into 7.6-meter (25-foot) sections by 1.2-meter (4-foot) high earthen dams. Each section had a wooden cover. A 1.22-meter (48-inch) diameter pipe was placed along the bottom. The pipe was corrugated with five 10.16-centimeter (4-inch) diameter holes around the bottom half.		
Location:	The trench is located south of the 200 East Area (across Route 4S) in the BC Crib Area.		
Process Description:	Liquid waste from the 300 Area laboratory facilities was sent to the 340 facility via the process sewer. Waste that was above the release limits for the 300 Area Process Ponds was sent by tanker truck to the 200 Area for disposal. The trench was covered with 8 wooden cover frames, 5.5 meter (18 feet) wide by 8.5 meter (28 feet) long a 7.62-centimeter (3-inch) schedule 40, carbon steel pipe, approximately 7 meters (23 feet) long placed along a side of the structure.		
Related Sites/ Structures:	The trench is associated with 300 Area laboratory facilities and the 340 facility.		
Waste Type:	Process Effluent		
Waste Description:	The site received Batelle Northwest laboratory (BNWL) waste from the 300 Area. The waste is low in salt and is neutral to basic.		

Code:	200-E-14	Classification:	Accepted
Names:	200-E-14; 216-B-201; 216-BC-201 Siphon Tank; IMUST; Inactive Miscellaneous Underground Storage Tank	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1957
Description:	The 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs and the 216-BC-201 siphon tank were surface stabilized as a single area. All the surface structures (risers and vents) have been removed. There are concrete AC 540 markers to identify the site. The vents were visible until 1981 when the area was surface stabilized. The vent risers were removed at ground level and the area was covered with at least 0.6 meters (2 feet) of additional top soil. The area is posted as Underground Radioactive Material.		
Location:	The siphon tank is located south of Route 4S, south of the 200 East Area. The tank is north of and adjacent to the 216-B-14 through 216-B-19 Cribs. The tank is 18 meters (60 feet) north of the center line between the 216-B-14 and 216-B-15 Cribs.		
Process Description:	The 216-BC-201 siphon tank was used to discharge waste to the 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs. The siphon tank would receive and hold the waste until the tank level reached 1.6 meters (5.5 feet). When this level was reached, the siphon action would begin and the tank contents would discharge to the designated crib. The siphon action would stop when the tank level reached 0.07 meters (6 inches). The siphon action was intended to flood the crib area with a significant amount of liquid, resulting in a uniform spread of contaminants throughout the crib, instead of a large amount of contaminants concentrating near the discharge point.		

Related Sites/ Structures: 216-B-15, 216-B-16, 216-B-17, 216-B-18 and 216-B-19 cribs, 241-BY Tank Farm and 221-U.

Waste Type: Process Effluent

Waste Description: Most of the liquid waste dispersed through this tank originated from the Uranium Recovery Process in 221-U (U-Plant). The process reclaimed the uranium metal from the tank farm waste derived from the bismuth phosphate fuel processing activities. Curren (1972) states that 216-B-17 and 216-B-19 also received scavenged tank farm waste. The waste includes ferrocyanide, phosphate, cesium, strontium, uranium, cobalt and ruthenium. The total effluent to the six cribs that passed through the 216-BC-201 Siphon Tank was 3.896E+07 liters (1.032E+07 gallons). At the time of discharge (1956), the total radionuclide activity for all six cribs equaled 26 curies of cobalt-60, 1,840 curies of cesium-137, 1,850 curies of strontium-90, 70 grams of plutonium and 1,410 kilograms (640 pounds) of uranium.

Code: 200-E-114-PL **Classification:** Accepted

Names: 200-E-114-PL; 216-BC-2805; 2805-E1, 2805-E2, 2805-E3 and 2805-E4; Pipeline from 216-BY-201 to 216-BC-201; Pipeline from 241-BY Tank Farm to 241-C Tank Farm and BC Cribs Trenches **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1954

Description: The two parallel underground pipelines are marked with metal posts and Underground Radioactive Material - Pipeline signs. (see subsites)

Location: The pipeline begins north of the 241-BY Tank Farm at the 216-BY-201 Flush Tank. It extends eastward to a point between the 216-B-8 Crib and the 216-B-51 French Drain. The pipeline turns southward and connects to a valve pit (see sitecode 200-E-223). A portion of the line diverts from the valve pit to the 241-C Tank Farm. Another portion of pipeline continues south and connects to the 216-BC-201 Siphon Tank in the BC Cribs and Trenches area. The BC Cribs and Trenches are located south of 200 East Area, south of Route 4 South.

Release Description: The Dyncorp Integrated Soil, Vegetation and Animal control group submitted two posted Contamination Areas located on this pipeline to WIDS as a Discovery Sites. In February 2000, they found growing contaminated vegetation on the underground pipeline northeast of 241-B Tank Farm, approximately 27 meters (90 feet) southeast of the 216-B-51 French Drain. The maximum contamination levels identified was 2000 counts per minute beta/gamma. Although some of the contaminated vegetation was removed, the area remains posted as a Contamination Area. A second area with growing contaminated vegetation was identified in October 2000. This area is located north of the 241-B Tank Farm, between the 216-B-8 Tile Field and the 216-B-51 French Drain.

Process Description: The pipeline is constructed of two parallel, 10 centimeter (4 inch) diameter carbon steel pipes buried in the same soil trench. Encasements were constructed at areas where the pipeline crosses under roadways. During the Uranium Recovery project from 1952 through 1954, this pipeline was used to transfer waste from the 241-BY Tank Farm to the BC Cribs and Trenches area. The waste first cascaded through several tanks in the 241-BY Tank Farm to allow some contamination to settle inside the tank farm before being discharged to the cribs and trenches via the underground pipeline. The entire scavenging mission necessitated the construction of the transfer system using pipelines 2805-E1, 2805-E2, 2805-E3 and 2805-E4 (Sitecode 200-E-114-PL). The entire system can be traced on the series of H-2-2900 thru 2909. The valve box (Sitecode 200-E-223) allowed waste to move north to BY or south to BC cribs.

Related Sites/ The pipeline is associated with the 241-BY Tank Farm, 241-C Tank Farm, the BC Cribs and

Structures: Trenches, 200-E-221-PL (to 216-B-51) and the 200-E-223 valve pit.

Waste Type: Soil

Waste Description: The waste is the pipeline and adjacent soil contaminated from pipeline leaks. The pipeline carried scavenged uranium recovery process waste (tri-butyl phosphate solvent extraction).

This Site has the Following SubSites:

Code: 200-E-114-PL:1

Names: 200-E-114-PL:1; North/South Pipeline

Code: 200-E-114-PL:2

Names: 200-E-114-PL:2; East/West Pipeline

Code: 200-E-114-PL:3

Names: 200-E-114-PL:3; Underground Steel Line from Gate Valve (North of 216-BC-201 Siphon Tank) to 216-B-20 Trench

Code: 200-E-114-PL:1

Classification: Accepted

Names: 200-E-114-PL:1; North/South Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 1 is the north-south portion of the pipeline that runs from 216-BY-201 Flush Tank to 216-BC-201 Flush Tank. It runs through the 200-E-223 Valve Pit. The pipeline is constructed of two parallel, 10 centimeter (4 inch) diameter pipes buried in the same soil trench.

Location: The north/south pipeline is begins east of the 241-BY tank farm and extends south, east of Baltimore Ave. It exits the 200 East Area fence and continues under Route 4 South and connects to the 216-BC-201 flush tank.

Process Description: The entire scavenging mission necessitated the construction of the transfer system using pipelines 2805-E1, 2805-E2, 2805-E3 and 2805-E4. The entire system can be traced on the series of H-2-2900 thru 2909. The valve box allowed waste to move north to BY or south to BC cribs.

The SubSite is Part Of:

Code: 200-E-114-PL

Names: 200-E-114-PL; 216-BC-2805; 2805-E1, 2805-E2, 2805-E3 and 2805-E4; Pipeline from 216-BY-201 to 216-BC-201; Pipeline from 241-BY Tank Farm to 241-C Tank Farm and BC Cribs Trenches

Code: 200-E-114-PL:2

Classification: Accepted

Names: 200-E-114-PL:2; East/West Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 2 is the east-west portion of the pipeline that extends from the 200-E-223 Valve Pit to the 241-C Tank Farm. The pipeline is constructed of two parallel, 10 centimeter (4 inch) diameter pipes buried in the same soil trench.

Location: This segment is located inside 200 East Area, north of 7th Street. It extends from the 200-E-223 Valve Pit to the 241-C Tank Farm.

Process Description: The entire scavenging mission necessitated the construction of the transfer system using

Description: pipelines 2805-E1, 2805-E2, 2805-E3 and 2805-E4 (Sitecode 200-E-114-PL). The entire system can be traced on the series of H-2-2900 thru 2909. The valve box allowed waste to move north to BY or south to BC cribs.

The SubSite is Part Of:

Code: 200-E-114-PL

Names: 200-E-114-PL; 216-BC-2805; 2805-E1, 2805-E2, 2805-E3 and 2805-E4; Pipeline from 216-BY-201 to 216-BC-201; Pipeline from 241-BY Tank Farm to 241-C Tank Farm and BC Cribs Trenches

Code: 200-E-114-PL:3

Classification: Accepted

Names: 200-E-114-PL:3; Underground Steel Line from Gate Valve (North of 216-BC-201 Siphon Tank) to 216-B-20 Trench

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Four inch diameter underground steel line from gate valve (north of 216-BC-201 siphon tank) to 216-B-20 trench. A Notice of Radiological Problem was issued in January 2007. Wind had uncovered a portion of this old radioactive underground line. The maximum dose rate on the line was 60 mr/hr at contact. No removable contamination was identified.

Location: The BC Cribs and Trenches are located south of 200 East Area, south of Route 4 South. The pipeline is located east of the BC cribs.

Process Description: The pipeline subsite begins as an underground line connecting to the 216-BC-201 flush tank. It emerged as an aboveground line west of the encasement (H-2-3203) that diverted waste to the BC trenches.

The SubSite is Part Of:

Code: 200-E-114-PL

Names: 200-E-114-PL; 216-BC-2805; 2805-E1, 2805-E2, 2805-E3 and 2805-E4; Pipeline from 216-BY-201 to 216-BC-201; Pipeline from 241-BY Tank Farm to 241-C Tank Farm and BC Cribs Trenches

200-CB-1

Code: 216-B-4 **Classification:** Accepted

Names: 216-B-4; 216-B-4 Dry Well; 216-B-4 French Drain; 216-B-4 Reverse Well **Reclassification:** None

Type: Injection/Reverse Well **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1949

Description: The site is marked with a single concrete AC-540 marker post, with an Underground Radioactive Material sign attached to the post. The top of the well extends 0.6 meters (2 feet) above ground.

Location: The french drain is located south of the 221-B Building, east of the 222-B building and north of the 292-B Building

Related Sites/Structures: The french drain is related to the 291-B Stack and the 292-B building. The pipeline associated with this waste site is 200-E-230-PL.

Waste Type: Water

Waste Description: Before August 1947, the site received 291-B Stack drainage. After August 1947, the site received floor drainage from the 292-B Building. The waste is neutral to basic and low salt with less than one curie of total beta contaminants. The B Plant AAMS Report also mentions transuranic fission products.

Code: 216-B-13 **Classification:** Accepted

Names: 216-B-13; 216-B-13 Crib; 216-B-13 French Drain; 216-B-B; 291-B Crib **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1976

Description: A single, concrete AC-540 marker is the only site identifier. There an Underground Radioactive Material sign attached to the concrete post.

Location: The french drain is located south of 221-B and northeast of the 291-B-1 Stack.

Process Description: Many documents state the unit operated from August 1947 to June 1976. In June 1976, the stack drainage was rerouted to a cell drainage sample tank. The french drain is constructed of two 1.22 meter (4 feet) diameter by 1.53 meter (5 feet) long tile pipes, stacked vertically and filled with crushed limestone. The unit has a plywood cover, located 2.44 meters (8 feet) below grade. Two and a half tons (2,270 kilograms) of limestone were used as a base and to fill the tile pipes. The bottom of the drain is 5.5 meters (18 feet) below ground surface. However, an Atlantic Richfield Hanford Company memo, created on October 3, 1974, states the drain line to the french drain was cut and capped in June 1974.

Related Sites/Structures: The french drain is associated with the 291-B stack. The pipeline that fed the french drain is sitecode 200-E-243-PL.

Waste Type: Process Effluent

Waste Description: The site received the 291-B-1 Stack drainage. In 6/76, the stack drainage was rerouted to a catch tank, jetted to the wind tunnel, drained to a sump, and then pumped to a cell drainage sample tank. The waste is low in salt and is neutral to basic.

Code: 216-B-60 **Classification:** Accepted
Names: 216-B-60; 216-B-60 Crib **Reclassification:** None
Type: Crib **Start Date:** 1/1/1967
Status: Inactive **End Date:** 1/1/1967

Description: The crib is not visible because the 225-B Building was built on top of the crib site in 1975. There is a sign posted on the south wall of the 225-B building indicating where the 216-B-60 crib is located.

Location: The crib is located at the west end of the 221-B Building. The southeast portion of the 225-B Encapsulation Facility was built over the crib site.

Process Description: The 216-B-60 crib was a single use, specific retention crib. The crib was constructed of two steel caissons positioned side by side (standing on end) that were 2.4 meters (8 feet) in diameter and 4.2 meters (14 feet) tall. The two caissons were installed in November 1967 to receive waste from the cleanout of the 0.6 meter (24 inch) 221-B cell drain header. The cleanout process was completed in December 1967. The first caisson received 18, 499 liters (4887 gallons) of sludge solids and was capped with concrete. The second caisson received a small volume of flush water. The 0.6 meter (24 inch) line was plugged after cleanout and the caissons were backfilled to grade.

Related Sites/ Structures: The crib is associated with the 221-B facility operations.

Waste Type: Process Effluent

Waste Description: The site received the cell cleanout solid and liquid waste from the 61 centimeter (24 inch) 221-B Building cell cleanout drain line. The waste was low in salt and was neutral to basic. Composite sample results indicated 715.5 kilograms of uranium, 0.08 grams of plutonium, 777 curies of Ce-144, 8 curies of Cs-137 and 5 curies of Eu-154.

Code: 221-B **Classification:** Discovery
Names: 221-B; B Plant Canyon; B Plant Facility **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1945
Status: Inactive **End Date:**

Description: The B Plant facility is one of the original Hanford chemical processing buildings. The 221-B Process Canyon is a large, reinforced concrete building. It consists of twenty sections (two cells per section) with expansion joints between each section. The building is divided lengthwise into the gallery side and the canyon chemical processing side by a thick, concrete shielding wall running the full length of the building.

Location: The facility is located inside 200 East Area, on Atlanta Ave.

Code: 200-E-6 **Classification:** Accepted
Names: 200-E-6; Sanitary Sewer Repair and Replacement **Reclassification:** None
2607-E4; Septic Tank
Type: Septic Tank **Start Date:** 1/1/1981
Status: Inactive **End Date:** 1/1/1998

Description: The septic tank is surrounded by chain with four steel posts painted yellow. The tank is posted with a septic tank sign. The tank has two 10 centimeter (4-inch) PVC pipes which protrude

vertically from the ground. The sanitary tile field is surrounded with a steel post and chain barricade and is posted with Caution Underground Radioactive Material signs.

Location: The site is located just east of the 221-B Building and south of the inactive 2607-E4 septic tank.

Process Description: The septic system received waste from the 221-B Building.

Waste Type: Sanitary Sewage

Waste Description: The site received sewage from lavatory facilities within the 221-B Building.

Code: 200-E-55 **Classification:** Accepted

Names: 200-E-55; Effluent Drain East of 291-B Sand Filter; Miscellaneous Stream #322 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1997

Description: There are no visual surface features for this drain. It has been marked with a single steel post. The drain is below grade and east of the B-Plant Sand Filter. The french drain consists of a hole 1.83 meters (6 feet) in diameter, 0.9 meters (3 feet) deep backfilled with gravel.

Location: The french drain is located 3.6 meters (12 feet) east of the east end of the 291-B Sand Filter (WIDS Site Code 200-E-30).

Process Description: Sand Filters were added to the B Plant exhaust system in 1948. Condensate from the sand filter drained to a pipe in the bottom of the east end of the sand filter that dispersed the effluent to a gravel filled hole adjacent to the sand filter.

Related Sites/Structures: The drain is associated with the 291-B Sand Filter (200-E-30). The pipeline to this french drain is sitecode 200-E-214-PL.

Waste Type: Process Effluent

Waste Description: The drain received condensate from the B-Plant canyon sand filter and rain water that leaked through the sand filter roof. An auger drill sample of the sand filter french drain was collected in September 1994. A spilt spoon sample was collected at 4.8 meters (16 feet) below ground surface. Maximum contamination levels in the soil read 20,000 disintegrations per minute beta/gamma and 2100 disintegrations per minute alpha with hand held instruments. The sample was shipped to a mobile laboratory for analysis.

Code: 2607-E4 **Classification:** Accepted

Names: 2607-E4; 2607-E4 Septic Tank and Tile Field **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1998

Description: The septic tank and tile field are marked with a Sanitary Sewer/Drain Field sign and lie with a posted Underground Radioactive Material area. The 2607-E4 Septic Tank is constructed of reinforced concrete that drains to an adjacent tile field.

Location: The 2607-E4 Septic Tank is located northeast of the 221-B Building. The tile field is northeast of the tank.

Process Description: The 2607-E4 Septic Tank and associated tile field were designed to accept and treat sanitary sewer effluent from B-Plant facilities.

Related Sites/ Structures: The 2607-E4 Septic Tank is associated with the 2607-E4 Tile Field and B-Plant Facilities.

Waste Type: Sanitary Sewage

Waste Description: This septic tank received sanitary wastewater and sewage from B Plant facilities at an estimated rate of 0.24 cubic meters (8.5 cubic feet) per day. The tank was abandoned in 1998. No information was provided related to sampling.

Code: UPR-200-E-1 **Classification:** Accepted

Names: UPR-200-E-1; Waste Line Failure on South Side of 221-B **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1946

Description: The unplanned release is not separately marked or posted.

Location: The release occurred on the south side of the 221-B Building.

Release Description: Soil contamination was detected approximately 24.4 meters (80 feet) from the location of a waste line rupture location that was identified on June 17, 1946. The additional contamination was assumed to be migration from the first line failure. Following the discovery of the additional contamination, test holes were dug to determine the extent of the contamination.

Related Sites/ Structures: This unplanned release is associated with UPR-200-E-80.

Waste Type: Process Effluent

Waste Description: The original line break (metal waste line) had dose rates up to 400 rad per hour.

Code: UPR-200-E-2 **Classification:** Accepted

Names: UPR-200-E-2; Spotty Contamination Around the B and T Plant Stacks; UN-200-E-2 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1947

Status: Inactive **End Date:**

Description: This unplanned release is not physically posted or marked.

Location: In 1947, document indicated radioactive particulate contamination was identified in a 300 meter (1000 foot) radius around the B and T Plant stacks.

Release Description: A document written on 11/18/1947 states radioactive particulate matter was found within a 305 meters (1,000 feet) radius around the B Plant and T Plant stacks. A study of the ground contamination found that mist-like particles were released over a larger area and that the particulate matter had magnetic properties.

Waste Type: Chemicals

Waste Description: Spotty ground contamination around the B Plant stack. Most stack releases consisted of ruthenium.

Code: UPR-200-E-44 **Classification:** Accepted

Names: UPR-200-E-44; BCS Waste Line Leak South of 221-B; UN-200-E-44 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1972

Status: Inactive **End Date:**

Description: The release site is not separately marked or posted. There is no visual evidence of the area that caved in.

Location: The unplanned release occurred south of 221-B, near the R-17 Change House. north of 7th Street. The Change House no longer exists.

Release Description: A small cave-in was discovered south of the R-17 change house next, to the black-top road (7th Street). There was no radiological reading identified in the cave-in at the time of discovery. An excavation was done after lunch that identified a leak in the 15 centimeter (6 inch) BCS crib line. Soil removed from the excavation was contaminated from 10,000 to 20,000 counts per minute. The dose rate on the pipe was 20 millirad per hour. There was no contamination spread from the excavation.

Related Sites/ Structures: This site is associated with B Plant and UPR-200-E-103.

Waste Type: Process Effluent

Waste Description: The leaking effluent from the BCS crib line caused the ground to cave in. The dirt was contaminated with readings of 10,000 to 20,000 counts per minute. The pipe was contaminated with readings up to 20 millirem per hour.

Code: UPR-200-E-52 **Classification:** Accepted

Names: UPR-200-E-52; Contamination Spread Outside the North Side of 221-B; UN-200-E-52 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1975

Status: Inactive **End Date:**

Description: In 2008, an area approximately 4 meters (13 feet) wide by 9 meters (30 feet) was posted with a WIDS sign and Underground Radioactive Material Area signs (see photos).

Location: The unplanned release occurred on the north side of 221-B, near the steps that cross the railroad tunnel. Soil contamination occurred under the drain of the steam pressure relief pipe discharge from the E-5-2 Strontium Concentrator.

Release Description: On August 1, 1975, soil contamination ranging to 20,000 counts per minute was detected under the drain of the steam pressure relief pipe discharge from the E-5-2 Strontium Concentrator, and an area about 0.91 meters (3 feet) wide and 2.74 meters (9 feet) high on the north side of the 221-B Building was contaminated to 100,000 counts per minute outdoors. Soil on the western berm adjacent to the railroad cut was also contaminated. The apparent cause was that contamination migrated from the leaking tube bundle of the recently replaced E-5-2 strontium concentrator to the pipe gallery piping. It was then forced outside by operation of the relief valve when the operating steam pressure was increased to 35 pounds per square inch while the relief valve setting remained at 32 pounds per square inch.

Waste Type: Process Effluent

Waste Description: Beta/gamma with readings up to 20,000 counts per minute were found in the soil under the steam pressure relief discharge pipe from the E-5-2 Strontium Concentrator. Another area on the north side of 221-B was contaminated up to 100,000 counts per minute.

Waste Description: canyon. Soil samples collected in 1972 found the release was predominantly cesium-137. Approximately 30 curies of cesium was released, but half of the release was removed with the soil excavated to expose the line leak.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-41

Names: UPR-200-E-41; UPR-200-E-85; UN-200-E-41 Soil Contamination in the Vicinity of R-13 Stairwell (221-B)

Code: UPR-200-E-87

Classification: Accepted

Names: UPR-200-E-87; 216-E-15; 224-B South Side Plutonium Ground Contamination; UN-200-E-87; UN-216-E-15

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1953

Description: Some areas on the south side of 224-B are posted with Underground Radioactive Material signs. The release site is not specifically marked.

Location: The UPR-200-E-87 site is located on the south side of the 224-B Building in the 200 East Area.

Release Description: Plutonium-239 is believed to have leaked into the soil from underground pipelines located on south side of the 224-B Building because of the large amount of plutonium contaminated soil found while excavating near pipelines at 224-T in 1972. Because 224-T and 224-B were built exactly alike, alpha-laden moisture may also have seeped into the soil from underground pipeline joints at 224-B Building.

Related Sites/ Structures: UPR-200-E-87 is associated with the underground pipelines at the 224-B Building and UPR-200-W-102.

Waste Type: Process Effluent

Waste Description: Approximately 75 grams (3 ounces) of plutonium-239 may have leaked into the soil at 224-B, based on an actual excavation that found contaminated soil at 224-T in 200 West Area.

Code: UPR-200-E-103

Classification: Accepted

Names: UPR-200-E-103; BCS Line Leak South of R-17 at 221-B; UN-200-E-103

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1972

Status: Inactive

End Date: 1/1/1972

Description: The release site is not marked or posted. The change house structure has been removed.

Location: UPR-200-E-103 occurred in the soil surrounding a process transfer line south of the R-17 Change House and adjacent to Seventh Street. The change house structure has been removed.

Release Description: A 0.3 meter (1 foot) diameter depression was noted in the blacktop near 7th Street, just south of the R-17 construction change house. The maximum radiation reading in the depression was 1500 counts per minute. The hole was sealed with a filter and barricaded as a radiation area until the line could be valved off and repaired. The blacktop and dirt were excavated down to the BCS line. Maximum contamination in the dirt was 100,000 counts per minute. The contaminated dirt was taken to the burial ground.. The line was found to have several openings in it. The leaking section of pipe was removed and replaced. There was no spread of contamination or personnel contamination noted during the line repair.

Related Sites/ Structures: UPR-200-E-103 was associated with the 221-B Building, the BCS transfer line south of the R-17 Change House, and UPR-200-E-44.

Waste Type: Process Effluent

Waste Description: The release consisted of contaminated liquid from the BCS crib line, with radiation levels up to 1,500 counts per minute at the surface of the depression and 100,000 counts per minute inside the excavation.

200-CP-1

Code: 202-A **Classification:** Discovery
Names: 202-A; PUREX Canyon; PUREX Facility **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1955
Status: Inactive **End Date:**
Description: The 202-A facility is a large, reinforced concrete structure that includes a concrete canyon with below grade cells that contain the equipment used for chemical separation.
Location: The PUREX facility is located inside 200 East Area, on 4th Street.

Code: 216-A-11 **Classification:** Accepted
Names: 216-A-11; 216-A-11 French Drain; **Reclassification:** None
Miscellaneous Stream #465
Type: French Drain **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1972
Description: The site is inside a small area delineated by steel posts and chain. It is posted as an Underground Radioactive Material area. A 0.76 meter (2.5 foot) diameter, circular metal cover is visible. One concrete AC-540 marker identifies the site. The unit is composed of two reinforced concrete pipes placed vertically end to end. The excavation is 3.0 meters (10 feet) in diameter and extends to a depth of 1.5 meters (5 feet) below the bottom. Both the drain and the excavation are filled with 8-centimeter (3-inch) rock to the top and are backfilled over.
Location: The site is located near the southeast corner of the 202-A Building, south of Trap Pit #1.
Process Description: A sump in the bottom of Trap Pit #1 collected steam condensate and equipment leakage that drained into 216-A-11.
Related Sites/ Structures: The site is associated with the PUREX Trap Pit #1 and pipeline 200-E-266-PL.
Waste Type: Steam Condensate
Waste Description: The site received the Trap Pit #1 drainage from the 202-A Building. The waste was low in salt and was neutral to basic. The site contains less than 50 curies total beta activity.

Code: 216-A-12 **Classification:** Accepted
Names: 216-A-12; Miscellaneous Stream #463 **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1972
Description: The site is not marked or posted. There are no visible surface features for this drain. The wall of the trap pit includes a "French Drain" label. The unit is composed of two reinforced concrete tile pipes placed vertically end to end. The excavation is 3.0 meters (10 feet) in diameter and extends 1.5 meters (5 feet) below the bottom. Both the drain and the excavation are filled with gravel to the top of the unit and backfilled over. This site cannot be visually located.
Location: The site is located at the center of the south side of the 202-A Building, approximately 23 meters (75 feet) from the building.
Process Description: A sump in the bottom of Trap Pit #3 collected steam condensate, rain water and equipment

Description: leakage and drained it to 216-A-12.

Related Sites/ Structures: The site is associated with PUREX Trap #3 and pipeline 200-E-267-PL.

Waste Type: Steam Condensate

Waste Description: The site received the Steam Trap Pit #3 drainage from the 202-A Building. The waste was low in salt and was neutral to basic. The site contains less than 50 curies total beta activity. It is possible that more than one Trap Pit drained to this french drain.

Code: 216-A-13 **Classification:** Accepted

Names: 216-A-13; 216-A-13 French Drain; Miscellaneous Stream #460 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1962

Description: The site is not marked or posted. A 1.2 meter (45 inch) diameter metal cover is visible over the drain. The drain is constructed of two lengths of concrete pipe placed vertically end to end. The unit is filled to a depth of 0.9 meters (3 feet) with 5 to 8 centimeters (2 to 3 inches) of rock. This unit has a bed of gravel around the lower section of pipe extending a minimum of 0.3 meters (1 foot) away from the pipe in all directions.

Location: The site is located approximately 6 meters (20 feet) west and 6 meters (20 feet) south of the the southwest corner of the 202-A Building.

Process Description: The site received the seal water from the air sampler vacuum pumps in the 202-A Building.

Related Sites/ Structures: The site is associated with PUREX, the 216-A-35 French Drain and pipeline 200-E-273-PL.

Waste Type: Water

Waste Description: The site received the seal water from the air sampler vacuum pumps in the 202-A Building. The waste is low in salt, neutral to basic, and contains less than 1 curie total beta activity.

The 1993 PUREX AAMS Report lists the total volume released as 100,000 liters (30,000 gallons), but does not give the reference for this discrepancy from the original Stenner report. It is assumed that the original number is correct, and the AAMS report added an extra "0" in error.

Code: 216-A-14 **Classification:** Accepted

Names: 216-A-14; French Drain - Vacuum Cleaner Filter Pit; Miscellaneous Stream #462 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1972

Description: The drain is not marked or posted. There are no visible surface features for this french drain. The Vacuum Cleaner Filter Pit is a concrete box with approximately 0.6 meters (2 feet) above grade. The sump is inside the pit and drains through an underground pipe to the buried french drain. The drain is composed of two reinforced concrete pipes placed vertically end to end. The excavation is 3.0 meters (10 feet) in diameter and extends to a depth of 1.5 meters (5 feet) below the bottom. Both the drain and the excavation are filled with 8-centimeter (3-inch) rock to the top and backfilled over. The filter pit access is labeled Contamination Area, Radiation Area, Airborne Contamination and Confined Space. A 10 centimeter (4 inch) M23b-UD inlet

pipe, approximately 1.5 meters (5 feet) long, extends horizontally into the unit, 7.9 meters (26 feet) below grade. The site has a 1.3 centimeter (0.5 inch) thick steel cover.

Location: The site is located south of the center of the 202-A Building, 5.5 meters (18 feet) east of the Filter Pit.

Process Description: A sump in the bottom of Filter Pit collected steam condensate, stormwater and equipment leakage that drained to 216-A-14.

Related Sites/ Structures: The site is associated with the Vacuum Cleaner Filter Pit and pipeline 200-E-268-PL.

Waste Type: Steam Condensate

Waste Description: The site received the vacuum cleaner filter and blower pit drainage from the 202-A Building. The waste was low in salt, neutral to basic, and contains less than 1 curie total beta activity.

Code: 216-A-32 **Classification:** Accepted

Names: 216-A-32; 216-A-32 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1959

Status: Inactive **End Date:** 1/1/1972

Description: The site is currently surrounded with cement posts with Underground Radioactive Material signs. There had been an inner area marked with steel posts, chains and Surface Contamination signs. The area was surface stabilized in 2001 and is now covered with clean gravel.

Location: The crib is located northeast of 202-A, inside the PUREX exclusion fence.

Process Description: Perforated vitrified clay pipe was placed horizontally on the fill 1.5 meters (5 feet) above the bottom of the excavation. Two layers of sisalkraft paper separate the crib gravel from the overlying earthen backfill.

Related Sites/ Structures: The site is associated with 202-A and the 200-E-107 stabilized area. The pipeline associated with this crib is sitecode 200-E-194-PL.

Waste Type: Water

Waste Description: The site received the 202-A canyon crane maintenance facility floor, sink, and shower drainage. The site contains less than 1 curie total beta activity. In a letter (Walsar 1966), Isochem Corporation indicates the intent to dispose of 24,600 liters (6,500 gallons) of approximately 50% Soltrol (a brand of purified kerosene) diluent in this crib. BHI-00178 (1995) reports that investigators were unable to verify if the proposed disposal took place.

Code: 216-A-35 **Classification:** Accepted

Names: 216-A-35; 216-A-35 Dry Well; 216-A-35 French Drain **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1966

Description: The drain is a raised cement structure, painted yellow and surrounded with Underground Radioactive Material signs. The top cover is marked Confined Space.

Location: The site is located approximately 9 meters (30 feet) south of the west end of the 202-A PUREX Building, south of the 216-A-13 French Drain.

Process The site is a french drain that was a replacement for the 216-A-13 French Drain. The inlet pipe

Process
Description: enters the french drain 3.2 meters (10.5 feet) below grade. Disposal to the site was terminated when the effluent flow rate exceeded the infiltration capacity of the soil. The site was deactivated by capping the effluent pipeline to the unit and rerouting the effluent to the 216-A-29 Ditch via the 202-A Chemical Sewer.

Related Sites/ Structures: The site is associated with PUREX , the 216-A-13 French Drain and pipeline 200-E-272-PL.

Waste Type: Water

Waste Description: The site received the seal cooling water from the air sampler vacuum pumps in the 202-A Building. The waste is low in salt, neutral to basic, and contains less than 1 curie of total beta activity.

Code: 200-E-65 **Classification:** Accepted

Names: 200-E-65; 202A Building Steam Condensate; Miscellaneous Stream #466 Injection Well (R) **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The site is a 1.2 meter (4 foot) diameter concrete drain with a metal plate cover. It is flush with the ground surface. On October 15, 1998, the inside of the drain was dry.

Location: The site is located on the southeast corner of 202-A, east of railroad tunnel #1 (218-E-14). It is located inside posted boundaries sitecode 200-E-107, that has been recently stabilized and downposted to an Underground Radioactive Material area.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the PUREX facility and 200-E-107.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate. However, the drain is located within an area that had been posted as a Radiological Contamination Area (see sitecode 200-E-107). A radiation survey done in October 1998 did not detect any contamination.

Code: 200-E-67 **Classification:** Accepted

Names: 200-E-67; 202A Building Steam Condensate; Miscellaneous Stream #494 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The drain is located inside a dome shaped caisson. The dome shaped caisson is surrounded by post and chain and posted with Contamination Area signs. The dome is labeled 202-A-417.

Location: The site is located adjacent to the south wall of 202-A.

Related Sites/ Structures: The site is associated with the 202-A-417 Catch tank.

Structures:**Waste Type:** Steam Condensate**Waste Description:** The drain is located inside a caisson that is posted as a Contamination Area.**Code:** 200-E-70 **Classification:** Accepted**Names:** 200-E-70; Injection Well (Q); Line #8801 Steam Condensate; Miscellaneous Stream #64 **Reclassification:** None**Type:** Injection/Reverse Well **Start Date:****Status:** Inactive **End Date:** 1/1/1997**Description:** The site is a 0.9 meter (3 foot) diameter drain with four holes in the cover located 2.1 meters (7 feet) east of the steam line. There are several open-ended, cut pipes. It is assumed these pipes once were connected to the drain cover. The cover is posted with Confined Space signs. On May 18, 2000, it was located inside a posted Contamination Area.**Location:** The site is located south of 202A, on the east side of the railroad tunnel #1 (218-E-14).**Process Description:** Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.**Waste Type:** Steam Condensate**Waste Description:** The drain received non-contaminated steam condensate. However, the drain had been located within a large Soil Contamination Area (200-E-107). During a site walkdown in 1998, the RCT found 10,000 disintegration per minute beta/gamma on the steam pipes and in the gravel using a hand held instrument.**Code:** 200-E-71 **Classification:** Accepted**Names:** 200-E-71; Injection Well (O); Line #8801 Steam Condensate; Miscellaneous Stream #63 **Reclassification:** None**Type:** Injection/Reverse Well **Start Date:****Status:** Inactive **End Date:** 1/1/1997**Description:** The site is a man-made hole under the steam line. It is approximately 0.9 meters (3 feet) deep and 0.61 meters (2 feet) wide. There is no drain structure. The steam vented directly into the soil.**Location:** The site is located south of 202-A, on the west side of the 218-E-14 Tunnel. It is adjacent to the southeast side of 216-A-11.**Process Description:** Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.**Waste Type:** Steam Condensate

waste type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate. However, it had been located inside a larger area that was posted as a Soil Contamination Area (see sitecode 200-E-103).

Code: 200-E-73 **Classification:** Accepted

Names: 200-E-73; Injection Well (M); Line #8801 Steam Condensate; Miscellaneous Stream #61 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The site is a 0.9 meter (3 foot) diameter concrete structure with a rusty metal cover.

Location: The site is located near the south wall of 202A, between 202A and the 291AH Ammonia Off-gas filter building, adjacent to the south side of 291-AD.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with 200-E-103.

Waste Type: Steam Condensate

Waste Description: The drain received non-contaminated steam condensate, but the drain is located within the boundaries 200-E-103. This area had been a Soil Contamination Area prior to being surface stabilized in 1999.

Code: 200-E-74 **Classification:** Accepted

Names: 200-E-74; Injection Well (N); Line #8801 Steam Condensate; Miscellaneous Stream #62 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a 0.9 meter (3 foot) diameter drain with a rusty metal cover. On October 15, 1998, the inside of the covered drain was inspected. The drain was dry, but rust stained.

Location: The site is located southeast of 202A, on the west side of the 218-E-14 tunnel.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate, but is located within an area that had been posted as a Soil Contamination Area (200-E-103).

Code: 200-E-77 **Classification:** Accepted

Names: 200-E-77; Injection Well (S); Line #8801 Steam Condensate; Miscellaneous Stream #65 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a 1.2 meter (4 foot) diameter concrete structure with a metal cover. The structure is slightly above grade and is filled with rocks. On October 15, 1998, the inside of drain was dry.

Location: The site is located on the northeast corner of 202-A. It is located inside a posted Contamination Area (see 200-E-107).

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate, but is located within an area that had been posted as a Contamination Area (200-E-107).

Code: 200-E-79 **Classification:** Accepted

Names: 200-E-79; Injection Well (T); Line #8801 Steam Condensate; Miscellaneous Stream #66 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a 0.9 meter (3 foot) diameter concrete drain under a steam line with a metal cover. There is a rusty pipe going into the drain. On October 15, 1998, the inside of the drain was dry. It was inside a posted Contamination Area.

Location: The site is located on the southeast corner of the PUREX Railroad Cut. It is inside a posted radiologically posted area known as 200-E-107.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: Although the drain received non-contaminated steam condensate, it is located inside and area that had been a posted Contamination Area (200-E-107).

Code: 200-E-84 **Classification:** Accepted

Names: 200-E-84; 202A Building Steam Condensate; Injection Well (C); Miscellaneous Stream #58 **Reclassification:** None

Code: 2607-EE **Classification:** Accepted
Names: 2607-EE; 2607-EE Septic System **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1956
Status: Inactive **End Date:**
Description: The site is a septic tank with a drain field extending northeast of the septic tank. The area is surrounded with light duty posts and chain. One riser pipe is visible.
Location: The septic tank is located northeast of 202-A, east of the railroad cut, inside the PUREX exclusion fence.
Related Sites/ Structures: The site is associated with the 202-A facility and the 200-E-107 stabilized area.
Waste Type: Sanitary Sewage
Waste Description: The unit received sanitary wastewater and sewage from the PUREX facility. The source area is in a potentially contaminated zone; therefore, the waste has the potential of being contaminated.

Code: UPR-200-E-28 **Classification:** Accepted
Names: UPR-200-E-28; Contamination Release Inside the PUREX Exclusion Area; UN-200-E-28 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1961
Status: Inactive **End Date:**
Description: This release occurred in the eastern half of the PUREX exclusion area. The exclusion area is posted as a Contamination Area. The release can not be individually distinguished within the zone.
Location: Contamination spread to the eastern half of the PUREX exclusion area.
Release Description: On November 30, 1961, a general spread of low-level contamination to the eastern half of the PUREX exclusion area occurred. Fission products escaped from a trap pit because of failures in a process vessel steam coil and in the trap pit piping.
Related Sites/ Structures: The surface contaminated areas inside the PUREX facility fence were surface stabilized in 1999 and 2001. See WIDS sitecodes 200-E-103 and 200-E-107.
Waste Type: Process Effluent
Waste Description: Fission product specks were released from a PUREX trap pit due to process vessel steam coil failures.

Code: UPR-200-E-39 **Classification:** Accepted
Names: UPR-200-E-39; Release from 216-A-36B Crib Sampler (295-A); UN-200-E-39 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1968
Status: Inactive **End Date:**
Description: The release site is not separately marked or posted. It is located inside a large surface stabilized area known as 200-E-103 that is posted as an Underground Radioactive Material area.
Location: The site release occurred on the ground and blacktop area outside the 216-A-36B Crib Sampler Shack (#295-A). The sample shack is located inside the PUREX Exclusion fence, south of 202-

A, adjacent to the west side of the PUREX Storage Tunnel.

Release Description: On February 6, 1968, pressurized ammonia scrubber liquid was found to be spewing from the vent filter at the 216-A-36B Crib Sampling Shack (295-A). The contaminated ammonia scrubber water erupted through the vent and filter and onto the ground around the outside of the sample shack. Approximately 60.4 square meters (650 square feet) of ground and blacktop was affected. Contamination levels ranged from 20 to 450 millirad/hour. The cause was determined to be that the export pressure was too high, resulting in back-pressure through the vent.

Related Sites/ Structures: The site is associated with 216-A-36 Crib, the 295-A Sample Shack and 200-E-103.

Waste Type: Process Effluent

Waste Description: The site received pressurized PUREX ammonia scrubber waste containing fission products. The readings were 20 to 450 millirad/hour.

Code: UPR-200-E-96 **Classification:** Accepted

Names: UPR-200-E-96; Ground Contamination SE of PUREX; UN-200-E-96; UN-216-E-24 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site was described in 1980 as an area measuring approximately 1.0 hectare (2.5 acres) located adjacent to the east and south sides of 202-A (PUREX). These areas are now covered with gravel and posted as Underground Radioactive Material areas.

Location: The release site include contaminated areas on the south and east sides of PUREX.

Release Description: From a conversation with Harold Maxfield on October 8, 1981, it was determined the area had become contaminated by residual specks from the operation of the 291-A Stack and work activities in the 241-A-151 diversion box during the operational years of the PUREX Plant.

Related Sites/ Structures: The release site is associated with 200-E-103, 200-E-107, the 291-A Stack and the 241-A-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: The release consisted of low-level radioactive particles resulting from PUREX operations, most likely fall out from the 291-A stack and diversion box activities.

200-CR-1

Code: 202-S **Classification:** Accepted
Names: 202-S; 202-S REDOX; S Plant **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1967

Description: The 202-S Building is one of the five canyon buildings. The inactive waste management unit is a large reinforced concrete structure. The canyon's processing areas and equipment are contained in small rooms called cells. The nine cells are arranged in rows that are spanned by a large crane. Each cell is topped by a thick, concrete cover. This cover is removed by the crane, allowing access to the underlying cells. The gallery above the cell cover is the same height as the cell, allowing process equipment to be manipulated during maintenance and operations.

Location: The 202-S Building is located in the southern portion of the 200 West area just north of the 222-S Laboratory.

Process Description: The Reduction Oxidation (REDOX) Facility was used to extract plutonium and uranium from fuel rods irradiated at the Hanford Site reactors. The REDOX process employed an organic solvent extraction process that used methyl isobutyl ketone to separate uranium and plutonium from each other and the fission products in the fuel rod.

Related Sites/Structures: Structures associated with this facility include the 200 West Tank Farms, 202-S process equipment, 211-S Tank Farms, the S-Plant Cribs, Ditches, and Trenches, and waste transfer lines (200-W-152-PL).

Waste Type: Equipment
Waste Description: The unit contains solid radioactive waste.

The Following Sites Were Consolidated With This Site:

Code: 296-S-1
Names: 296-S-1; 296-S-1 Stack
Code: 296-S-2
Names: 296-S-2; 296-S-2 Stack; Hoods Ventilation and PR Cage; REDOX North Sample Gallery
Code: 296-S-4
Names: 296-S-4; Low-Level Decontamination Sink and Special Work Permit Lobby Vent; REDOX Decontamination Room; Regulated Shop; Regulated Tool Room
Code: 296-S-6
Names: 296-S-6; 296-S-6 Stack; REDOX Silo Ventilation

This Site has the Following SubSites:

Code: 202-S:1
Names: 202-S:1; 211-S Tank Farm

Code: 202-S:1 **Classification:** Accepted
Names: 202-S:1; 211-S Tank Farm **Reclassification:** None
Type: Process Unit/Plant **Start Date:**
Status: Inactive **End Date:**

Description: The 211-S Tank Farm is located west of the 202-S canyon building. It was a liquid chemical

Description:

storage area. The tank farm consists of eight above ground steel storage tanks ranging from 16,430 liters (4300 gallons) to 186,200 liters (49,000 gallons). The tanks held nitric nonahydrate, nitric acid, sodium dichromate and sodium hydroxide. All of the tanks, pumps and piping were flushed and emptied when the REDOX facility was deactivated. The area had been posted as a Contamination Area due to migration of contamination from nearby contaminated processes and Surface Contamination Areas. The 211-S Tank Farm was covered with a minimum of 15.24 centimeters of clean gravel in November 2002. The area was downposted as an Underground Radioactive Material Area.

The SubSite is Part Of:**Code:** 202-S**Names:** 202-S; 202-S REDOX; S Plant**Code:** 2904-S-170**Classification:** Accepted**Names:** 2904-S-170; 2904-S-170 Control Structure; 2904-S-170 Weir Box**Reclassification:** None**Type:** Control Structure**Start Date:** 1/1/1954**Status:** Inactive**End Date:** 1/1/1976

Description: The 2904-S-170 Control Structure is an inactive, below grade concrete structure. From the surface it can be identified by four metal posts surrounding the site. It is posted with Underground Radioactive Material signs. Two 76 centimeter (30 inch) diameter vitrified clay pipes provided inlet and outlet underground access to the structure. The 2904-SA sample building is located over the south end of the weir structure. A manhole and a riser are visible adjacent to the 2904-SA building.

Location: The site is located southwest of the 202-S canyon facility, near the southwest corner of the 211-S tank farm.

Process Description: The unit was built to regulate and measure the process waste flow from the REDOX facility before routing the effluent to liquid waste disposal sites.

Related Sites/Structures: The weir is associated with the 200-W-152-PL pipeline, the 2904-SA sample building, the 202-S facility and the liquid effluent disposal sites.

Waste Type: Process Effluent

Waste Description: This unit contains low-level contaminated concrete and piping. The quantity of contaminated waste has not been determined. There is beta/gamma smearable contamination and penetrating radiation present. Contamination was derived from the effluents traveling through the unit.

Code: 218-W-7**Classification:** Accepted**Names:** 218-W-7; 222-S Vault**Reclassification:** None**Type:** Burial Vault**Start Date:** 1/1/1952**Status:** Inactive**End Date:** 1/1/1960

Description: The waste site is a carbon steel burial vault. The outer surface of the vault is coated with a layer of hot coal tar enamel to prevent corrosion, 4.3 meters (14 feet) deep, resting on a 0.3-meter (1-foot) concrete foundation. The vault has a dome and vent structure that extends 3.2 meters (10.5 feet) to the surface. The ground surface is graveled, and the vent is protected by yellow metal poles and a chain with radiation zone signs.

Location: The unit is located southeast of the 222-S Building.

Process

Description:

Related Sites/ Structures: Site UPR-200-W-137 is the contamination inside this vault, and is (in effect) a duplicate site.

Waste Type: Misc. Trash and Debris

Waste Description: This vault received dry, packaged laboratory and sampler waste from the 222-S Laboratory.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-137

Names: UPR-200-W-137; 218-W-7; UN-200-W-137

Code: UPR-200-W-43 **Classification:** Accepted

Names: UPR-200-W-43; Contaminated Blacktop East of 233-S; UN-200-W-43 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1957

Status: Inactive **End Date:**

Description: The site is no longer marked or posted. The 233-S building was demolished in 2003 and 2004.

Location: The area of contamination was located east of the 233-S building.

Release Description: A radiation zone was originally established in this area in January 1957, but was surveyed and found to be free of contamination. On February 12, 1957, a small roped area at the corner of the electrical substation east of 233-S was being surveyed for release after being decontaminated. An area of blacktop beyond the posted area was found to be contaminated with levels up to 2,000 disintegrations per minute. The Records Management Officer (RMO) day supervisor, who was observing the survey, contaminated his shoes to 1,000 disintegrations per minute. The contaminated shoes were cleaned to less than 500 disintegrations per minute and released. The cause of the contamination spread could not be determined. However, it is presumed that the contamination from inside the posted area blew out during a wind storm. In 1957, the area was posted as a Radiation Zone pending clean up.

Waste Type: Soil

Waste Description: Alpha with readings up to 2,000 disintegrations per minute was found on the black top north of REDOX and east of 233-S.

Code: UPR-200-W-56 **Classification:** Accepted

Names: UPR-200-W-56; Contamination at the REDOX Column Carrier Trench; UN-200-W-56 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1961

Status: Inactive **End Date:**

Description: The site is located inside the REDOX facility fence. It is not separately marked or posted.

Location: The contamination occurred at the REDOX Column Carrier trench (outlet) west of the 233-S Building and north of REDOX.

Release Description: On February 6, 1961, a sudden heavy rainstorm washed contamination from a papered area of an outside radiation zone into a ground recess adjacent to the zone. A grossly contaminated steel cable was being decontaminated and contamination was spread out of the radiation zone across the sloping terrain. Contamination to 30,000 counts per minute was detected over about

200-CU-1

Code: 221-U **Classification:** Accepted
Names: 221-U; 221-U Building; 221-U Canyon Building; 276-U; U Plant **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1958

Description: The 221-U Process Canyon is a large, reinforced concrete building. It consists of twenty sections (two cells per section) with expansion joints between each section. The building is divided lengthwise into the gallery side and the canyon chemical processing side by a thick, concrete shielding wall running the full length of the building. The building contains processing equipment and tanks that supported the uranium recovery process. The canyon deck currently is used to store radioactively contaminated surplus/spare equipment. The 221-U facility is accessed through the 271-U annex, which is attached to the west side of the 221-U building.

Location: The 221-U building is located in the central portion of the 200 West Area, near the corner of 16th Street and Beloit Ave.

Process Description: 221-U was used for the Uranium Recovery Process. This process extracted relatively pure uranium from the liquid waste from the bismuth phosphate plutonium separation process that was stored in the tank farm tanks. The Uranium Recover process transformed the recovered uranium into uranium trioxide powder. The bismuth phosphate process, used in T Plant and B Plant, isolated only the plutonium from the dissolved, irradiated fuel rods. The bismuth phosphate "Metal Waste" stream, containing uranium and associated the fission products, was transferred to the underground storage tanks in the tank farms. The metal waste stream contained approximately 0.5 pounds of uranium per gallon of liquid waste. The uranium bearing waste in the tank farms was recovered from the underground tanks by sluicing and transferred to 221-U for processing. Tributyl Phosphate (TBP) solvent was used to extract and decontaminate the recovered uranium from the fission products and residual plutonium. The Uranium Trioxide Plant (224-U) was used to the purified uranyl nitrate solutions and calcine into uranium trioxide powder. The operation in 224-U continued after the completion of the Uranium Recovery process ended in 1958. Different chemical separation processes were used in REDOX and PUREX that separated the uranium from the waste stream, in the form of Uranyl Nitrate, before the waste was sent to the tank farms. The Uranyl Nitrate stream from the Redox facility was sufficiently decontaminated from the fission products to permit a direct feed to the 224-U calcination facility via an aboveground pipeline. Uranyl Nitrate from PUREX was delivered to 224-U via tanker trucks. After the Uranium Recovery process ended in 1958, the U Plant canyon was used to decontaminate large pieces of process equipment. This activity was transferred to 221-T in 1961.

Related Sites/ Structures: Structures associated with 221-U Building include the 271-U Operations Services Building, the 211 tanks, 276 tanks, 222-U laboratory, 291-U stack and the 224-U Building.

Waste Type: Process Effluent

Waste Description: Processing areas and equipment are contaminated with uranium and fission products. Residual chemicals remain from the uranium recovery and equipment decontamination activities.

This Site has the Following SubSites:

Code: 221-U:1
Names: 221-U:1; Chemical Storage Tanks; 211-U Tank Farm

Code: 221-U:2
Names: 221-U:2; Chemical Storage Tanks; 211-AU Tank Farm; 211-UA
Code: 221-U:3
Names: 221-U:3; 276-U Tank Farm; Solvent Storage Tanks

Code: 221-U:1 **Classification:** Accepted
Names: 221-U:1; Chemical Storage Tanks; 211-U Tank Farm **Reclassification:** None
Type: Process Unit/Plant **Start Date:**
Status: Inactive **End Date:**

Description: The 211-U Tank Farm was a bulk liquid storage area, consisting of nine aboveground storage tanks. The tanks are located on the west side of the 221-U building. Six tanks are horizontal tanks, 2.7 meter diameter, 11 meters long (9 foot diameter, 36 feet long). Three of the horizontal tanks were sodium hydroxide storage tanks, one was a demineralized water storage tank and two were considered spare tanks. Three tanks are vertical tanks, 3 meter diameter, 4.2 meters high (10 foot diameter, 14 feet high). One was a demineralized water storage tank and two were chemical make-up tanks. The bulk liquid was transferred to the 211-U tanks from rail cars or trucks. In 2002, only four horizontal tanks and one vertical tank remained. The area had been posted with Radiological Buffer Area/Radioactive Material Area signs. The area around the tanks was covered with clean gravel and reposted with Underground Radioactive Material signs.

The SubSite is Part Of:

Code: 221-U
Names: 221-U; 221-U Building; 221-U Canyon Building; 276-U; U Plant

Code: 221-U:2 **Classification:** Accepted
Names: 221-U:2; Chemical Storage Tanks; 211-AU Tank Farm; 211-UA **Reclassification:** None
Type: Process Unit/Plant **Start Date:**
Status: Inactive **End Date:**

Description: The 211-UA (alias 211-AU) Tank Farm consists of sixteen aboveground storage tanks. Thirteen tanks have a capacity of 380,000 liters (100,000 gallons) each. The tanks are located on the west side of the 221-U building. Nine of these tanks were nitric acid storage tanks and four were sodium hydroxide storage tanks. Three smaller tanks 2.7 meters in diameter and 2.7 meters tall (9 feet diameter, 9 feet tall) were nitric acid sample tanks. The bulk liquid was transported to the tanks in railcars or trucks. The Uranium Recovery Process at 224-U received uranyl nitrate from REDOX and PUREX. After the uranium was removed, the "reclaimed" nitric acid was stored in the 211-UA tanks. It was transferred from 224-U to 211-UA via overhead lines. The slightly radioactive nitric acid was recycled back to REDOX and PUREX. In the 1960's and 1970's it was returned to the separations facilities in railcars. It was pumped out of the 211-UA tanks into the railcars via underground lined and a pump pit. Some leakage was associated with the pumping process and caused low level radioactive contamination around the area. The reclaimed nitric acid storage was moved from 211-UA to a holding tank within the 224-U facility in the 1980's and the railcar unloading platform was abandoned. Some residual acid and waste water, contaminated above crib release limits, continued to be stored in the 211-UA tanks. All the acid and waste water was removed from the tanks prior to being transitioned to the new Environmental Restoration Contractor in 1994. Although the tanks were emptied, the acid pump pit and underground lines had not been flushed. Leaking

valves and seals and residual contamination in the pump pit caused low level radioactive contamination to spread around the tanks and railcar unloading platform. The area was posted as a Contamination Area again in the early 1990's. The lines and pump pit were flushed in 1998 and the surface contamination was covered with gravel. The area was changed to an Underground Radioactive Material Area. In 2002, only ten tanks remained. They had been posted with Contamination Area signs. The area surrounding the tanks was covered with clean gravel and reposted with Underground Radioactive Material signs.

The SubSite is Part Of:

Code: 221-U

Names: 221-U; 221-U Building; 221-U Canyon Building; 276-U; U Plant

Code: 221-U:3

Classification: Accepted

Names: 221-U:3; 276-U Tank Farm; Solvent Storage Tanks

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The 276-U Solvent storage area consists of six tanks mounted inside a cement basin, located on the south end of the 221-U building. Tank leakage was collected in a sump that could be returned to the tanks, sent to a drum out facility or discharged to cribs. The 276-U tanks are connected to the 221-U building by the hot pipe trench in the 221-U pipe gallery. Organic make-up solutions of tributyl phosphate and diluent were stored and treated and routed to the 221-U vessels via the pipe gallery. The diluent storage tank has a (29,000 gallon) capacity. The tributyl phosphate storage tank has a (6,000 gallon) capacity. The organic receiver storage tank has a (10,000 gallon) capacity. The organic treatment storage tank has a (10,000 gallon) capacity. The organic treatment sample storage tank has a (1,300 gallon) capacity. The RAX feed storage tank has a (10,000 gallon) capacity.

The SubSite is Part Of:

Code: 221-U

Names: 221-U; 221-U Building; 221-U Canyon Building; 276-U; U Plant

Code: 271-U

Classification: Accepted

Names: 271-U; 271-U Building; 271-U Office Building

Reclassification: None

Type: Office

Start Date: 1/1/1952

Status: Inactive

End Date:

Description: The 271-U Office Building was the office/service building constructed of a reinforced concrete foundation, floors, and pillars with pumice block walls. The four story structure (including the basement) is physically attached to the gallery side of the 221-U Canyon.

Location: The building is attached to the northern gallery side of 221-U.

Process Description: The building has been used primarily for office space. Previously, the building has been used for storing contaminated equipment, craft services, process support functions and training. The third floor of the building was used for preparing chemicals and plutonium storage.

Related Sites/Structures: Structures associated with 271-U include the 221-U Canyon, other U Plant Facilities, and the shops, maintenance, and ventilation equipment in the 271-U basement.

Waste Type: Chemicals

Waste: Residual chemicals and radionuclides may be present in some portions of this building. The

Waste Description: contamination may be related to vermin intrusion or from processes that were conducted in this unit.

Code: 291-U **Classification:** Accepted
Names: 291-U; 291-U Fan Control House **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1945
Status: Inactive **End Date:**

Description: The building is constructed of reinforced concrete foundation and floor, concrete and block walls, and a concrete slab roof covered with asphalt and gravel, trimmed in wood. It is a one-story, one-room building with wooden doors containing the ventilation system instrumentation. Two electric fans are located outside, adjacent to the building. The fan control house is located within a larger, posted Underground Radioactive Material area, although the 291-U building and exhaust fans remain posted as Contamination Areas.

Location: The building is located east of 221-U.

Process Description: The 291-U Complex was originally built in 1944-1945 to provide exhaust ventilation for the 221-U Canyon Building. The 221-U Building is retired, but the 291-U exhaust ventilation system still serves its original purpose and is planned to remain in operation until the 221-U Building is decommissioned.

Related Sites/Structures: The 291-U-1 Stack, 291-U Stack Sand Filter (200-W-44), and 221-U Vessel Vent Pit (216-U-7) are associated with the exhaust system.

Waste Type: Equipment

Waste Description: The instrument house has likely become contaminated from exhaust from 221-U.

Code: 291-U-1 **Classification:** Accepted
Names: 291-U-1; 291-U-1 Stack; 291-U Stack **Reclassification:** None
Type: Stack **Start Date:** 1/1/1945
Status: Inactive **End Date:**

Description: The unit consists of a reinforced concrete stack, lined with acid-resistant brick resting on an octagonal, two-tiered foundation of brick and concrete. The stack is 61 meters (200 feet) high and 4.3 meters (14 feet) in diameter at the base. The stack is located within a larger Underground Radioactive Material area, although the 291-U building and exhaust fans remain posted as Contamination Areas.

Location: The stack is located east of 221-U.

Process Description: The ventilation system for U-Plant was taken off line on September 15, 2011. The system was completely deactivated and final effluent samples were obtained.

The 291-U Complex was originally built in 1944-1945 to provide exhaust ventilation for the 221-U Canyon Building. The 221-U Building is retired, but the 291-U exhaust ventilation system still serves its original purpose and is planned to remain in operation until the 221-U Building is decommissioned. In April 2005, the drainage valve from the 291-U-1 stack to the 241-UX-302A catch tank was closed.

Related Sites/Structures: The 291-U Fan House, 291-U Stack Sand Filter (200-W-44), and 221-U Vessel Vent Pit (216-

Structures: U-7) are associated with the exhaust system.

Waste Type: Chemicals

Waste Description: The air exhaust system was contaminated with radioactive particulates.

Code: 292-U

Classification: Accepted

Names: 292-U; 292-U Stack Monitoring Station; 291-U Stack Exhaust Monitoring Building

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The 292-U building is a cement block structure.

Location: The 292-U building is located west of Beloit Ave. and south of the 291-U-1 exhaust stack.

Related Sites/Structures: The 292-U building is associated with the 291-U-1 exhaust stack.

200-CW-1

Code: 216-A-25	Classification: Accepted
Names: 216-A-25; 216-A-25 Swamp; Gable Mountain Pond; Gable Mountain Swamp; Gable Pond	Reclassification: None
Type: Pond	Start Date: 1/1/1957
Status: Inactive	End Date: 1/1/1987

Description: The site was a large, water-filled pond that received cooling water from the Plutonium Uranium Extraction (PUREX) and B-Plant operations. The pond had a total surface area of 32 hectares (82 acres), 28 hectares (71 acres) in the main pond and a 4.4-hectare (11-acre) overflow pond. The average depth of the unit was 1.5 meters (5 feet), with a maximum depth of 3 meters (9 feet). The pond has been backfilled and surface stabilized. The backfilled pond is delineated with concrete markers and posted as Underground Radioactive Material. An additional area of soil contamination was identified in 1996, north of the west end of the overflow pond. This area was given the Waste Information Data System (WIDS) Site Code number 600-118. In 1997, the area was surface stabilized and reposted as Underground Radioactive Material, adding 3.3 hectares (8.2 acres) to the total radiologically posted area.

Location: The site is located south of Gable Mountain, north of Route 11A.

Release Description: Radiation surveys done following the F-15 Tank coil leak in June 1964 found up to 22 rads/hour at 5 centimeters (2 inches) over the inlet, and 500 millirem per hour at 5 centimeters (2 inches) along the shoreline. Water samples ranged from 48,000 picocuries per cubic centimeter (collected in June 1964 to 12 picocuries per cubic centimeter (collected in October 1964). A task force was formed consisting of operations management personnel, process engineers, a chemist, a geologist/hydrologist, a biologist, a health physicist and a waste disposal engineer. A follow up report written in 1965 (Radiation Control of Accidentally Contaminated Seepage Ponds -RL-SA-15) determined that of the 10,000 curies of fission products released, the highest percentage of significant contaminants was niobium-95, zirconium-95, yttrium-91, strontium-89, cerium-144 and praseodymium-144. Water fowl were periodically harvested following the incident to determine the amount of external and internal contamination. External contamination on waterfowl collected at Gable Pond ranged from 100 millirem per hour (collected on June 22, 1964) to 500 counts per minute (collected on November 3, 1964). The internal strontium and cesium concentration ranged from 180,000 picocuries per gram of cesium-137 and 370 picocuries per gram of strontium (analyzed in June 1964) to 1 picocuries per gram of cesium-137 and less than detectable strontium (analyzed in November 1964). Copper sulfate was added on two occasions to Gable Pond to eliminate algae and invertebrates following the 1964 incident in order to eliminate water fowl food sources. Three parts per billion of copper sulfate was the desired concentration. Most of the contamination was absorbed into the pond bottom sediments. An effort was made to coat the pond bottom with bentonite clay to reduce the percolation rate and raise the liquid level of the pond one foot. Applying a uniform layer of clay was a problem. After adding six and a half tons of clay non uniformly by various methods, other solutions were sought. In 1964, ground water samples in the vicinity (north/northeast) of Gable Pond were sampled. Analysis ranged from 49 picocuries per cubic centimeter in August 1964 to 11 picocuries per gram in October 1964. The contaminants were mostly ruthenium-103, ruthenium-106 and zirconium-niobium-95. Down gradient wells were at background levels. It was determined that groundwater contamination was not a significant problem. However, groundwater samples collected in 1984 showed an elevated concentration of strontium-90. An Unusual Occurrence Report (#84-27) was issued and lead to the deactivation and stabilization of the pond

Related Sites/ Structures: An outfall structure was located at the southeast corner of the unit (see H-2-3332). The pond is also associated with an overflow area known as 600-118.

Waste Type: Water

Waste Description: Until May 1958, the unit received the process cooling water from 202-A Building (Plutonium Uranium Extraction [PUREX] Plant). From May 1958 to 1960, the unit received the above plus cooling water from the contact condenser in the 241-A-431 Building. In 1960, the unit received the above plus the surface condensator cooling water in the 241-A-401 Building (A Tank Farm). From November 1967 to January 1968, the unit received the above plus the wastewater from the 284-E Powerhouse. From January 1968 to March 1969, the unit received the above plus the cooling water and steam condensate from the 244-AR Vault. In March 1969, the pipeline to the contact condenser cooling system from the 241-A-431 Building Vault was valved out. After March 1977, the unit received the above plus the 242-A Evaporator steam condensate cooling water. (RHO-CD-798 shows a valve at the east end of the 216-B-2-3 Ditch connecting to PUREX Cooling Water Line to Gable Pond. The graphic is labeled "Effluent Pipelines and Transfer Capabilities for Gable Mountain and B Ponds". The B-Plant Aggregate Area Management Study Report [AAMSR] does not list B-Plant as a contributor to the Gable Pond inventory. However, WHC-SD-DD-TI-036 states that Gable Pond later served B-Plant.

The Following Sites Were Consolidated With This Site:

Code: 600-118

Names: 600-118; Contaminated Soil Northwest of Gable Mountain Pond; Hot Spot Northwest of Gable Mountain Pond

Code: 216-B-3 **Classification:** Accepted

Names: 216-B-3; 216-B-3 Main Pond; 216-B-3 Swamp; B Plant Swamp; B Pond; B Swamp; B-3 Pond; West Side Overflow Pond **Reclassification:** None

Type: Pond **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1994

Description: The 216-B-3 Pond has been backfilled and surface stabilized. It is marked and posted with Underground Radioactive Material Area signs and Danger - Do Not Enter signs. The main pond was roughly rectangular, with a surface area of 14 hectares (35 acres). The pond was expanded to include three additional lobes, 216-B-3A, 216-B-3B, and 216-B-3C, with areas of 4 hectares (10 acres), 4 hectares (10 acres), and 17 hectares (41 acres), respectively. The three expansion lobes are considered three separate waste sites. Collectively, the expansion ponds are also a separate RCRA treatment, storage and disposal (TSD) unit.

Location: The pond is located east of the 200 East Area perimeter fence, northeast of the 202-A Building .

Release Description: In addition to routine flows, the following process upsets have added to the inventory of the pond: UPR-200-E-32: In November 1963, a coil leak developed in the 221-B Building 6-1 Tank; UPR-200-E-34: In June 1964, a cooling coil leak developed in the F-15 process waste tank in the Plutonium Uranium Extraction (PUREX) facility; UPR-200-E-51: On 5-18-77 fifteen kilograms of cadmium was released to B Pond via the ditches; UPR-200-E-138: In March 1970, a leaking manometer sensing line from the 221-B Building 8-1 Tank.

Process Description: The site received waste between April 1945 and May 1994. Prior to the construction of the 216-B-3A and 216-B-3B Expansion Ponds in 1983, an area directly west of the Main Pond served as an overflow area. The 216-B-3A and 216-B-3B Expansion Ponds were constructed to receive the increased effluent discharge from the restart of the PUREX Facility. The 216-B-3C Expansion Lobe was constructed to received the increased effluent due to the closure of Gable Mountain Pond.

Related Sites/ The site is associated with B Plant and PUREX operations, the 216-B-3 ditches, the 216-A-29

Structures: Ditch and the 200-E-126-PL pipeline system.

Waste Type: Process Effluent

Waste Description: Waste streams flowed from the 216-A-29 and 216-B-3-3 Ditches into the 216-B-3 Pond. Discharges to 216-B-3 via 216-B-3-3 included: 221-B Building steam condensate and process cooling water; 284-E Powerhouse water; 244-CR Vault cooling water; 244-AR Vault and 242-A Evaporator cooling water; 202-A process cooling water, condenser cooling water, and air sampler vacuum pumps seal cooling water; 241-BY Tank Farm condenser cooling water; and Waste Encapsulation Storage Facility cooling water. Discharges to 216-B-3 via 216-A-29 included 202-A chemical sewer and acid fractionator condensate. The main pond received corrosive and toxic dangerous waste from two primary sources: the regeneration of the Plutonium Uranium Extraction (PUREX) plant demineralizer columns and from spills of dangerous or mixed waste from PUREX. The spills included hydrazine, cadmium nitrate, and ammonium fluoride/ ammonium nitrate. The backwash from the regeneration of the demineralizer columns included nitric acid, sulphuric acid, sodium hydroxide, and potassium hydroxide.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-34
Names: UPR-200-E-34; Liquid Release to B-Pond and Gable Pond; UN-200-E-34

Code: 216-B-3A RAD	Classification: Accepted
Names: 216-B-3A RAD; West Expansion Lobe; 216-B-3 1st Overflow Pond; 216-B-3A Expansion Lobe Residual Radioactive Waste	Reclassification: None
Type: Pond	Start Date: 1/1/1983
Status: Inactive	End Date: 1/1/1984

Description: This site is the residual radioactive contamination that remains in the 216-B-3A Pond. The site was closed out as a RCRA Treatment, Storage and Disposal Unit following cleanup of chemical contamination. The unit is roughly rectangular with approximately 4.5 hectares (11 acres) of surface area. It is inactive and dry. It was sampled and released from radiological controls with the exception of the percolation trench that is posted as a Soil Contamination Area. The pond was approximately 5.5 meters (18 feet) lower than the 216-B-3 Main Pond elevation. 8-millimeter (0.3-inch) plastic was placed along the slope of the pond banks and covered with gravel.

Location: The pond is located east of 200 East Area, east of the 216-B-3 Main Pond.

Release Description: In 1958, the dike on the east side of the 216-B-3 Pond broke and flooded into a ravine on the east side of the pond. The area was released from radiological controls in 1970. The area where the release occurred was later used to create the 216-B-3A Lobe of B Pond. Later, in 1984, a break in the barrier between 216-B-3A and 216-B-3B (West and East Expansion Lobes) was noted.

Process Description: The 216-B-3A was constructed to receive overflow from the 216-B-3 Main Pond due to increased effluent discharge from the restart of the Plutonium Uranium Extraction (PUREX) plant. The 216-B-3A Overflow Pond was connected to the 216-B-3 Main Pond by the 216-B-351 Spillway. The spillway was designed with a manually operated slide gate in the headwall. The water flowed from the main pond, through the culvert, down a 0.61-meter (2-foot) wide, concrete-lined ditch, to a fiberglass reinforced 0.3-meter (1-foot) flume, to the overflow pond. The pond operated from October 1983 to January 1984, when the dike between the 216-B-3A and 216-B-3B ponds failed (Occurrence Report #84-02). Prior to the dike failure, the 216-B-3B Pond had never been used. All the discharge from the failed dike was contained in the 216-B-

3B Pond. In response to the incident, the 216-B-3A and 216-B-3B Ponds were isolated. Effluent flow to the 216-B-3 Main Pond was reduced. A trench was dug in the 216-B-3A Pond to increase its infiltration rate. The trench measured 182 meters (600 feet) by 9 meters (30 feet) and was 2 meters (6 feet) deep. The debris from the dike failure was removed from the 216-B-3B Pond and a series of trenches were dug to increase its infiltration rate. Both 216-B-3A and 216-B-3B Ponds were fully operational by June 1984.

Related Sites/ Structures: The overflow pond is associated with UPR-200-E-14, 216-B-3, 216-B-3B and 216-B-351 Spillway.

Waste Type: Process Effluent

Waste Description: 216-B-3A received overflow from the 216-B-3 Main Pond. Potential sources include 221-B steam condensate and process cooling water, 284-E Powerhouse water, 244-CR, 244-AR and 242-A cooling water, 202-A process, condenser, and air sampler vacuum pump cooling water, 202-A chemical sewer, fractionator condensate, and WESF cooling water.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-14

Names: UPR-200-E-14; 216-B-3 Pond Dike Break; UN-200-E-14

Code:	216-B-3B RAD	Classification:	Accepted
Names:	216-B-3B RAD; East Expansion Lobe; 216-B-3B Expansion Lobe Residual Radioactive Waste	Reclassification:	None
Type:	Pond	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1985

Description: The unit is roughly rectangular with approximately 4.4 hectares (11 acres) of surface area. It is dry with a small radiologically posted area (Surface Contamination) in the northwest corner of the pond. The 216-3A, 3B and 3C Expansion ponds make up a separate RCRA TSD Unit.

Location: The pond is located east of the 200 East Area perimeter fence and east of the 216-B-3 Main Pond.

Release Description: In January 1984, the dike between 216-B-3A and 216-B-3B was found to be breached in the vicinity of the overflow channel. (Unusual Occurrence Report 84-02). The channel and the supporting area were washed away. There was no effluent released beyond the pond boundaries. At the time of the release, radiological surveys of the area found it to be clean and the area was released for the repair crews. There is currently (July 1999) a small Surface Contamination Area posted in the northwest corner of the pond at a rip rap inlet. This inlet may be the "overflow channel" mentioned in the 1984 Unusual Occurrence Report, but no sketch of the release area was included with the occurrence report.

Process Description: The 216-B-3A and 216-B-3B were constructed to receive overflow from the 216-B-3 Main Pond due to the increased effluent discharge from the restart of the Plutonium Uranium Extraction (PUREX) plant. In January 1984, the dike between the 216-B-3A and 216-B-3B ponds failed. Prior to the dike failure, the 216-B-3B Pond had never been used. All the discharge from the failed dike was contained in the 216-B-3B Pond. In response to the incident, the 216-B-3A and 216-B-3B Ponds were isolated. Effluent flow to the 216-B-3 Main Pond was reduced. A trench was dug in the 216-B-3A Pond to increase its infiltration rate. The trench measured 182 meters (600 feet) by 9 meters (30 feet) and was 2 meters (6 feet) deep. The debris from the dike failure was removed from the 216-B-3B Pond and a series of trenches were dug to increase its infiltration rate. Both 216-B-3A and 216-B-3B Ponds were declared fully operational by June 1984. Although 216-B-3B was considered an active pond, it never

received any effluent with the exception of the 216-B-3A dike failure incident. The spillway between 216-B-3A and 216-B-3b is know as 216-B-351. It consists of a 1 meter (36 inch) diameter corrugated steel culvert.

Related Sites/ Structures: The overflow pond is associated with 216-B-3, 216-B-3A and the 216-B-351 Spillway.

Waste Type: Process Effluent

Waste Description: With the exception of the 216-B-3A dike failure incident, the 216-B-3B Pond Lobe was never used. In 1991, a characterization borehole was drilled through the 216-B-3B Pond (well # 699-42-41B). It was drilled to a depth of 124 feet with a cable tool rig and split tube sampling. The casing was later pulled and the well was abandoned. Twenty six samples were analyzed for radionuclides (Sample numbers B00GV6 - B00GV9, B00GW0 -B00GW9, B00GX2 -B00GX8, B00GY0- B00GY2, B00GY9, B00GZ2-B00GZ8). No radioactive field readings were noted. Aliquots submitted to the onsite laboratory found no evidence of radioactive contamination. Samples were taken at intervals from depths of 1.5 to 37 meters (5 to 122 feet).

Code: 216-B-3C RAD	Classification: Accepted
Names: 216-B-3C RAD; 216-B-3C Expansion Lobe Residual Radioactive Waste	Reclassification: None
Type: Pond	Start Date: 1/1/1985
Status: Active	End Date: 1/1/1997

Description: The unit is rectangular pond with approximately 17 hectares (41 acres) of surface area. It was excavated into a very coarse gravel layer with a very high percolation rate. The pond was constructed with eight parallel north-south trenches and one east-west trench at the spillway.

Location: The site is located east of the 200 East Area Perimeter fence and southeast of the 216-B-3 Main Pond.

Process Description: The 216-B-3C Pond was constructed in 1985 to accommodate the increased effluent flow that resulted from the decommissioning of Gable Mountain Pond. In 1994, when the 216-B-3-3 Ditch and the 216-B-3 Main Pond sites were decommissioned, effluent was routed directly to the 216-B-3C Pond via a pipeline. A spillway (216-B-354) consisting of two 0.76-meter (30-inch) corrugated metal pipes was designed for a maximum flow of 74,000 liters (20,000 gallons) per minute. Later, the pond was considered a contingency pond for the Treated Effluent Disposal Facility (TEDF) effluent could be diverted to 216-B-3C in the event that Pump Station 3 fails.

Related Sites/ Structures: The site is associated with the PUREX facility, 216-B-3 Main Pond and the 200 East Powerhouse Ditch.

Waste Type: Process Effluent

Waste Description: The 216-B-3C received effluent from the 216-B-3A Overflow Pond from 1985 to 1994. In 1994, the effluent from the 216-B-3-3 Ditch was routed directly to the 216-B-3C. Effluent included water from the 200 East Powerhouse Ditch. The flow to 216-B-3C was permanently isolated on August 18, 1997.

Code: 216-S-16P	Classification: Accepted
Names: 216-S-16P; REDOX Pond #2; 202-S Swamp #1; 202-S Swamp and Ditch	Reclassification: None

the vegetation. By February 1954, dose rates at the edge of the pond were as high as 1500 millirem per hour. CAUTIONARY NOTE: Historical radiation survey data indicates that the radioactive inventory data in this site may be larger than the estimated inventories. Do not base safety limits for any intrusive or soil-disturbing activities on estimated inventories without confirmation from site sampling or current survey readings.

Process Description: The site provided ground disposal of process effluent from the 202-S facility via the 207-S Retention Basin and overflow from the 216-U-10 Pond via the 216-U-9 Ditch.

Related Sites/ Structures: The associated structures are the 202-S Building and the 207-S Retention Basin. The pipeline associated with the 216-S-17 pond is sitecode 200-W-152-PL.

Waste Type: Process Effluent

Waste Description: Until January 1953, the site received process cooling water and steam condensate from the 202-S Building. After January 1953, the site received the 202-S Building effluent and the overflow from the 216-U-10 Pond via the 216-U-9 Ditch. During April and May of 1953, solvent naphtha was utilized to kill the vegetation, but it did not work. During July 1953, copper sulfate, 2-4-D, and sodium chlorate were also used to kill vegetation.

In October 1952, a steam coil failure (UPR-200-W-15) in the REDOX D-12 Waste Concentrator caused gross contamination of process cooling water, the 207-S Retention Basin and the 216-S-17 Swamp. During November 1952, another unplanned release (UPR-200-W-13) caused further contamination at the 207-S Retention Basin and the 216-S-17 Swamp.

The major potential radiological contaminants of concern are cesium-137, strontium-90, and uranium-238.

Code: 216-U-9	Classification: Accepted
Names: 216-U-9; U Swamp-S Swamp Ditch; 216-U-6	Reclassification: None
Type: Ditch	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1975

Description: The site currently appears as a dry, V shaped depression. It is not marked or radiologically posted. It appears on drawing H-2-44510 as a "Y" shaped ditch. The east fork lead to 216-S-17 Pond and the west fork lead to 216-S-16 Pond. Although historical documentation indicates the fork to the 216-S-17 pond was backfilled, a 1999 site visit noted that both forks of the ditch appear to be dry, "V" shaped excavation

Location: The north end of the ditch begins at the southwest corner of 216-U-10 Pond and originally terminated at 216-S-17 Pond. Later, the west fork of the 216-U-9 Ditch was dug and connected to the 216-S-16 Ditch. The 216-S-16 Ditch emptied into the 216-S-16 Pond.

Release Description: UPR-200-W-139. It was documented in HW-60807 that the ditch became contaminated in September 1953.

Process Description: The 216-U-9 Ditch received overflow from the 216-U-10 Pond through a metal culvert under 13th Street. The overflow was originally directed to the 216-S-17 Pond via the 216-U-9 Ditch. The original ditch became contaminated in 1953, and was backfilled in 1954. The 216-S-17 Pond was also deactivated in 1954. In 1973, the ditch was reopened and connected to 216-S-16 Pond via the 216-S-16 ditch. This is known as the 216-U-9 west fork. The new ditch utilized approximately 500 feet of the original ditch. No contamination was identified in the reopened portion of the original ditch.

Related Sites/ Structures: The 216-U-9 Ditch is associated with 216-U-10, 216-U-16 and 216-U-17.

Waste Type: Process Effluent

Waste: The site received the overflow from the 216-U-10 Pond.

Description:

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-18

Names: UPR-200-W-18; Liquid Release to 216-U-9

Code: UPR-200-W-139

Names: UPR-200-W-139; UPR-200-W-18; Liquid Release to the 216-U-9 Ditch; UN-200-W-139

Code: 216-U-10 **Classification:** Accepted

Names: 216-U-10; 216-U-10 Pond; 231 Swamp; U Swamp; 216-U-1 **Reclassification:** None

Type: Pond **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1985

Description: This site is a 12 hectare (30 acre), backfilled, surface stabilized pond. It is posted with Underground Radioactive Material signs.

Location: This site is located south of 16th Street and east of Dayton Avenue. It is west of the 241-S Tank Farm.

Process Description: The site received effluents from various facilities at various times. It received steam condensate from 231-Z, 234-5Z Buildings and 231-Z Laboratory wastes via 216-Z-1, 216-Z-11 and 216-Z-19 Ditches. It received 284-W Powerhouse process cooling water, waste water from 2723-W Original Laundry/Mask Cleaning Station and the 2724-W (new) Laundry, chemical sewer wastes from 221-U Building, cooling water from 224-U Building, 241-U-110 Tank condenser and 242-S Evaporator steam condensate water via 216-U-14 Ditch. At first, the pond received effluents only from the 284-W Powerhouse and the original Laundry/Mask Cleaning facility (2723-W). No elevated levels of radioactivity were recorded during this time. When 234-5 (Plutonium Finishing Plant) began adding effluent to the pond in 1949, elevated levels of radioactivity in the pond were noted. In 1966, ARCHO reported an estimated 8 kilograms of plutonium had been released through the Z ditches, but that only an estimated 1.5 kilograms of the plutonium may have reached the 216-U-10 Pond. U Plant began to operate the Uranium Metal Recovery program in 1952. Process waste from U Plant was released to the pond through the 216-U-14 ditch. Several significant releases of cesium and strontium are known to have been released via this route during 1956 and 1957. The Uranium Oxide Facility (224-U) also began adding cooling water to the effluent in the 216-U-14 ditch. An estimated 1,500 kilograms of depleted uranium were released from this facility over 21 years of operation. Small amounts of cesium and strontium was added to the 216-U-14 ditch from the 241-SX farm condenser cooling water effluent.

Related Sites/ Structures: The site is associated with the 284-W Powerhouse, 231-Z Building, 234-5Z Building, 2723-W Building, 2724-W Building, 221-U Building, 224-U Building, 231-Z Building, 241-U-110 Tank Condenser, 231-Z Laboratory, and the 242-S Evaporator facilities and UPR-200-W-104, UPR-200-W-105, UPR-200-W-106 and UPR-200-W-107. It is also associated with the 216-U-9, 216-U-14, 216-Z-1 D, 216-Z-11, and 216-Z-19 Ditches. The pipeline to the 216-U-11 trench is sitecode 200-W-169-PL.

Waste Type: Process Effluent

Waste: The large volumes of low-level wastewater and occasional isolated releases of considerably

Names: UPR-200-W-124; Dike Break at the REDOX Pond; UN-200-W-124 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1959

Status: Inactive **End Date:**

Description: The historical documentation for this release is vague. It most likely occurred at the 216-S-17 Pond. The Sketch G in HW-60807 points to 216-S-17 but the location description text in HW-60807 could also indicate the 216-S-19 Pond.

Location: PNL-6464 states UPR-200-W-124 occurred in a southwest direction from the REDOX Pond. This description is vague because there is more than one pond associated with REDOX. The Sketch (G) in HW-60807 points to 216-S-17 Pond as the release location.

Release Description: A dike break caused the contamination of an area extending southwest of the REDOX Pond.

Related Sites/ Structures: UPR-200-W-124 was associated with the REDOX Pond.

Waste Type: Process Effluent

Waste Description: The waste was contaminated cooling water from the process tanks at the 202-S Building.

(as appropriate) as an indicator for each sample. Based on the sampling design, the combination of the radiological surveys and samples taken from the most likely candidate locations for contamination, the characteristics of the 200-N-3 are consistent with a surface-level non-radiological debris dump site. No source of contamination or contributor exists or remains in the surrounding media. The findings from these sampling activities are considered representative of the waste site and are adequate to conclusively support a decision of no action.

Code:	216-N-1	Classification:	Accepted
Names:	216-N-1; 216-N-1 Covered Pond; 216-N-1 Swamp; 212-N Swamp	Reclassification:	Interim Closed Out (6/3/2011)
Type:	Pond	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1952
Description:	A portion of the north end of this pond was excavated during remediation. No chains or barriers delineated the boundaries of this site. A single permanent concrete monument marked the north end of the pond site. The concrete marker had one Underground Radioactive Material sign on it. All radiological postings were removed in 2010, following remediation of the pond.		
Location:	The site is located approximately 274 meters (900 feet) south, southeast of the demolished 212-N Building.		
Process Description:	The pond received basin overflow cooling water from the 212-N Fuel Storage Facility via an underground 46-centimeter (18-inch) diameter vitrified clay pipe (see sitecode 600-285-PL). The pond consisted of a natural depression in the natural terrain and the discharged water was dispersed by evaporation and percolation into the ground.		
Related Sites/ Structures:	The site is associated with 212-N. The pipeline that fed the pond is sitecode 600-285-PL.		
Waste Type:	Process Effluent		
Waste Description:	The site received the basin overflow from the 212-N Building . The waste type is low level radioactivity.		
Closure Info:	The selected remedy of Remove Treat and Dispose (RTD) commenced at 216-N-1 waste site on November 5, 2009 and was completed on December 29, 2009. RTD activities involved the removal and disposal of contaminated soil from the 216-N-1 waste site at the Environmental Restoration Disposal Facility (ERDF). The excavation activity was planned to occur in stages with the area of highest contaminant concentration in the center being removed first with the vertical excavation depth set at 3.1 m (10 ft) below ground surface. Soil removal, followed by verification sampling, was planned to be performed repeatedly until the analytical data showed residual contaminant concentrations in the excavated area were below RAGs; thereby demonstrating that RAOs were attained. With the investigative sample results showing the extent of the contaminated area bounded at sample locations 2, 7 and 8, a maximum of two iterations was anticipated to be required. Ultimately, RAOs were met after only one phase of excavation followed by verification sampling. The final excavation area was 460 square meters(4,740 square feet) measured at ground surface with a slope of 1.5 to 1 to a depth of 3.1 m (10 feet).		
	Radiological field screening was performed over the entire surface of the remediated area. Radiological field screening of the remediated surface and the samples collected indicated no detectable dose rates above background. Once the waste site has been backfilled and/or contoured, native plant species will be seeded in the area, as applicable,		

Code: 216-N-2	Classification: Accepted
Names: 216-N-2; 216-N-2 Trench; 212-N #1 Trench; 212-N Storage Basin Crib #1; 216-N-1 Trench	Reclassification: No Action (7/30/2007)
Type: Trench	Start Date: 1/1/1947
Status: Inactive	End Date: 1/1/1947
Description:	The site has been reclassified to "No Action". The site was surrounded by a light weight chain barrier and concrete markers. It was posted with "Underground Radioactive Material" warning signs. A single chain enclosed both the 216-N-2 and 216-N-3 Waste Sites.
Location:	The site was located approximately 15 to 30 meters (50 to 100 feet) northwest of the 212-N Building. The trench was adjacent and parallel to the 216-N-3 Trench.
Process Description:	The 216-N-2 Trench was constructed in 1947 to accommodate water from the fuel basin when it was drained for undefined "special testing." Per documentation, in 1952 when activities in 200-N facilities ceased, the trench was taken out of service, the overground pipeline was placed into the trench, then backfilled with clean soil.
Related Sites/ Structures:	The site was associated with the 216-N-3 and 212-N facility.
Waste Type:	Process Effluent
Waste Description:	The site received the basin water and sludge from the 212-N Fuel Storage Basin when it was drained for special tests. The site was deactivated by removing the overground piping and backfilling the unit with 1.8 meters (6 feet) of clean soil. Typically practice was to place the aboveground piping in the trench prior to backfilling. The waste type is low activity.
Closure Info:	The current site conditions as documented in the Remaining Sites Verification Package (RSVP) for the site have achieved the Remedial Action Objectives (RAOs) and the corresponding Remedial Action Goals (RAGs) as established in the Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, -3, -5, & -7) in the 200-CW-3 Operable Unit (RD/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites ROD).

The site was investigated through field observations, radiological screening, and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present. To confirm the conceptual model of removal, treatment and disposal or No Action, an investigation of the site was performed. Due to the rocky backfill material that had previously been placed in the trench, focused, discrete samples were collected from four test pits on March 7, 2007. The samples were collected from four specific test pits [2 samples at 3 meters (10 feet) depths and 2 samples at 4.6 meters (15 feet) depths].

During the excavation and sampling of the test pits, radiological field surveys were conducted on each excavator bucket of soil utilizing a cesium 137 tracer (i.e., indicator) to determine the presence of radiological contamination. The contaminants of concern (COCs) for the site were identified based on existing information for the site and the COCs listed in the Remaining Sites ROD. The COC list included: americium 241, cobalt 60, cesium 137, europium 152, europium 154, europium 155, tritium, strontium 90, plutonium 238, plutonium 239/240, nickel 63, thorium 232, technetium 99, uranium 233/234, uranium 235, uranium 238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

The analytical results from the test pit soil sampling were shown to be below the Look Up Values, the RAGs and the RAOs and met the cleanup objectives for direct exposure,

groundwater protection, and river protection. The RSVP does not discuss the status of the pipeline that was thought to have been disposed in the trench. All analytical data were found acceptable for decision making purposes and were stored in the Hanford Environmental Information System. The data was also summarized in Appendix E of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. There was no deep zone for the site therefore, no institutional controls were required.

In accordance with this evaluation, the sampling results support a reclassification of the site to "No Action", as recorded on Waste Site Reclassification Form 2007-016. According to the RSVP the site will be re vegetated with native grasses and re graded in accordance with the RD/RAWP.

Code:	216-N-3	Classification:	Accepted
Names:	216-N-3; 216-N-3 Trench; 212-N #2 Grave; 212-N #2 Trench; 212-N Storage Basin Crib #2; 212-N-2 Trench	Reclassification:	No Action (7/30/2007)
Type:	Trench	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1952
Description:	The site has been reclassified to "No Action". The site was surrounded by a light weight chain barrier and concrete markers. It was posted with Underground Radioactive Material signs. Both the 216-N-2 and 216-N-3 trenches were located within the chained barrier.		
Location:	The site was located approximately 15 to 30 meters (50 to 100 feet) northwest of the 212-N Building. The trench was adjacent and parallel to the 216-N-2 Trench. A single lightweight chain barrier enclosed both trenches.		
Process Description:	In 1952 when activities in the 200-N facilities ceased, the fuel storage basins of each of the 212 Buildings were rinsed clean to remove sludge and residual water. About 7.6 x 10 ⁶ Liters of sludge/water was pumped into the 216-N-3, 216-N-5, and 216-N-7 Trenches located northwest of each facility via temporary pipelines. The trenches were 3 to 6 meters (10 to 20 feet) wide and 15 to 24 meters (50 to 80 feet) long. When the trenches were taken out of service, the overground pipelines were placed into the trench and the units were backfilled with clean soil. Each building has been used since for storage of contaminated waste or materials, but no additional liquid wastes have been discharged. A limited radiological characterization of the Annual surface radiological surveys have not detected any surface contamination. Four trenches (216-N-2, 216-N-3, 216-N-5, and 216-N-7) were reported to have received equally minute quantities of cesium-137 and strontium-90 but no plutonium or uranium. No inventory of organic or inorganic compounds is available for these sites. HW-28471 states that the fuel storage basin at 212-N was drained in 1947 to prepare the facility for special tests that were to be conducted in the basin. There is no documentation that describes the type of special tests done at this site.		
Related Sites/ Structures:	The site was associated with the 212-N Fuel Storage Facility and co-located with the 216-N-2 trench.		
Waste Type:	Process Effluent		
Waste Description:	The site received fuel storage basin water and sludge from the 212-N Building when the facility was shut down in 1952. The site was deactivated by removing the overground piping and		

backfilling the unit with 1.8 meters (6 feet) of clean soil. Typically, the above ground pipe was placed into the trench prior to backfilling. The waste type is low activity.

Closure Info: The current site conditions as documented in the Remaining Sites Verification Package (RSVP) for the site have achieved the Remedial Action Objectives (RAOs) and the corresponding Remedial Action Goals (RAGs) as established in the Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, -3, -5, & -7) in the 200-CW-3 Operable Unit (RD/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Remaining Sites ROD).

The site was investigated through field observations, radiological screening, and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present. To confirm the conceptual model of removal, treatment and disposal or No Action, an investigation of the site was performed. Due to the rocky backfill material that had previously been placed in the trench, focused, discrete samples were collected from four test pits on March 7, 2007. The samples were collected from four specific test pits [2 samples at 3 meters (10 feet) depths and 2 samples at 4.6 meters (15 feet) depths].

During the excavation and sampling of the test pits, radiological field surveys were conducted on each excavator bucket of soil utilizing a cesium 137 tracer (i.e., indicator) to determine the presence of radiological contamination. The contaminants of concern (COCs) for the site were identified based on existing information for the site and the COCs listed in the Remaining Sites ROD. The COC list identified in the Sampling and Analysis Plan for Remediation of Select 200 North Area Waste Sites (216-N-2, -3, -5, & -7) in the 200-CW-3 Operable Unit (SAP) included: americium 241, cobalt 60, cesium 137, europium 152, europium 154, europium 155, tritium, strontium 90, plutonium 238, plutonium 239/240, nickel 63, thorium 232, technetium 99, uranium 233/234, uranium 235, uranium 238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

The analytical results from the test pit soil sampling were shown to be below the Look Up Values, the RAGs and the RAOs and met the cleanup objectives for direct exposure, groundwater protection, and river protection. The RSVP does not refer to the pipeline that was thought to have been disposed in the trench. Detailed analysis results were presented by both Waste Sampling and Characterization Facility (WSCF) submitted to the Hanford Environmental Information System (HEIS). A summary of the sampling data results can also be found in Appendix E of the RSVP.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. There was no deep zone for the site therefore, no institutional controls were required.

In accordance with this evaluation, the sampling results support a reclassification of the site to "No Action", as recorded on Waste Site Reclassification Form 2007-017. According to the RSVP the site will be re-vegetated with native grasses and re-graded in accordance with the RD/RAWP.

Code: 216-N-4	Classification: Accepted
Names: 216-N-4; 216-N-4 Swamp; 212-P Swamp; 216-N-2	Reclassification: Interim Closed Out (6/3/2011)

has been used since for storage of contaminated waste or materials, but no additional liquid wastes have been discharged. A limited radiological characterization of the Annual surface radiological surveys have not detected any surface contamination. Four trenches (216-N-2, 216-N-3, 216-N-5, and 216-N-7) were reported to have received equally minute quantities of cesium-137 and strontium-90 but no plutonium or uranium. No inventory of organic or inorganic compounds was available for these sites. The HW-28471 document states that the fuel storage basin at 212-N was drained in 1947 to prepare the facility for special tests that were to be conducted in the basin. There was no documentation that described the type of special tests done at this site.

Related Sites/ Structures: The site was associated with the 216-N-2 Trench, 216-N-3 Trench and 212-N facility.

Waste Type: Process Effluent

Waste Description: The site received the basin water and sludge cleanout from the 212-P Basin during shutdown of the area. Typically, the above ground piping was placed in the trench prior to backfilling. The waste type is low activity.

Closure Info: The current site conditions as documented in the Remaining Sites Verification Package (RSVP), DOE/RL-2007-36, have achieved the Remedial Action Objectives (RAOs) and the corresponding Remedial Action Goals (RAGs) as established in the Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, 3, 5, & 7) in the 200-CW-3 Operable Unit (RD/RAWP) and the Interim Action Record of Decision for the 100- BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR- 1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Remaining Sites ROD).

The site was investigated through field observations, radiological screening, and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels was made for the site contaminants of concern. Screening levels were not exceeded for the site constituents. A baseline risk assessment for the river corridor portion of Hanford began in 2004, which included a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support a future final closeout decision for the site.

Geophysical survey data indicated a northwest southeast trending feature that had the characteristics typically associated with soil that has been disturbed by excavation or trenching. The disturbed area was roughly six meters (20 feet) wide, 22 meters (72 feet) long, and two meters deep. The northwest end of the area was not distinct but appeared to be slightly outside of the monuments surrounding the trench. There were no concentrations of buried debris or piping identified in the disturbed area. A very large boulder that could not be moved or broken up was identified as the only notable anomaly within the trench boundaries. While awaiting the analytical results, all soil was placed back into the excavated trench, and the area was stabilized.

Remediation of the site began on April 30, 2007 and was completed on May 11, 2007. A total of approximately 1,288 metric tons (1,420 tons) of contaminated material was excavated and disposed at the Environmental Remediation Disposal Facility. The excavation was approximately 316 meters squared (3,360 square feet) in area at the top of the excavation with a 1.5 to 1 slope down to 4.6 meters (15 feet).

The contaminants of concern (COCs) were identified based on existing information for the site and the COCs listed in the Remaining Sites ROD. The COC list identified in the Sampling and Analysis Plan for Remediation of Select 200 North Area Waste Sites (216-N-2, 3, 5, & 7) in the 200-CW-3 Operable Unit (SAP) included americium 241, cobalt 60, cesium 137, europium

152, europium 154, europium 155, tritium, strontium 90, plutonium 238, plutonium 239/240, nickel 63, thorium 232, technetium 99, uranium 233/234, uranium 235, uranium 238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

For the sampling effort, field screening was used to establish site radiological contamination levels. In addition, field screening for radiological contamination (cesium-137) was used as a "tracer" (i.e., indicator) to locate areas of chemical contamination. When field screening results indicated the presence of radiological contamination, the areas were further characterized with laboratory analytical samples. The post remediation sampling and analysis results indicated achievement of compliance with the RAOs and the RAGs identified in the Remaining Sites ROD and the RD/RAWP. After remediation the waste site was radiologically screened and sampled on May 16, 2007. Laboratory analysis was performed to verify that remediation was complete.

Detailed sampling analysis results were included in the RSVP, Appendix G and were submitted to Hanford Environmental Information System (HEIS). Although the site was divided into two decision units for sampling and analysis (trench side walls and trench bottom), the highest (i.e., maximum) analytical result from the combined test data was used for comparison to the soil cleanup levels for direct exposure, groundwater protection and river protection.

The RSVP has documented that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results have also demonstrated that residual contaminant concentrations support unrestricted future use of shallow zone soils [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil were protective of groundwater and the Columbia River. There was no deep zone, therefore no institutional controls were required.

Code:	216-N-6	Classification:	Accepted
Names:	216-N-6; 216-N-6 Swamp; 212-R Swamp	Reclassification:	Interim Closed Out (6/3/2011)
Type:	Pond	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1952
Description:	The site had been marked with "Underground Radioactive Material" warning signs attached to concrete AC-540 marker posts. The postings were removed after remedial activities were completed.		
Location:	The site is located in the 200 North Area, north of Route 11A. It is approximately 274 meters (900 feet) southeast of the 212-R Building.		
Process Description:	The site received contaminated fuel basin overflow cooling water from the 212-R Storage Facility via an underground 46-centimeter (18-inch) diameter vitrified clay pipe. The pond consisted of a natural depression in the terrain. Water discharged from the 212-R building was dispersed by evaporation and percolation into the ground. Except for an occasional berm, no excavation or other effort was made to define or enhance the pond formation. A report issued in 1953 documents contamination with a maximum dose rate of 50 mr/hr was observed in this swamp prior to being backfilled.		
Related Sites/ Structures:	The site is associated with the 212-R building and its connecting underground pipeline (sitecode 600-287).		
Waste Type:	Process Effluent		
Waste Description:	The site received the normal overflow from the 212-R Fuel Storage Basin. The waste is low activity.		

Closure Info: The selected remedy of Remove, Treat, Dispose (RTD) commenced at 216-N-6 Waste Site in July 2010 and was completed in August 2010. RTD activities involved the removal of contaminated soil from the 216-N-6 Waste Site and disposal at the Environmental Restoration Disposal Facility (ERDF). The final excavation area was 2,584 square meters (26,625.8 square feet) measured at ground surface. Additionally, the excavation was finished with a slope of 1.5 to 1.0, to a range of depths with the base (floor) of the excavation varying from roughly 1.21 meters (4 feet) to 2.43 meters (8 feet).

Radiological field screening was performed over the entire surface of the remediated area. Due to process knowledge of comingled radiological and chemical constituents, field screening for radiological contamination was used as an indicator to locate areas of chemical contamination. The survey was performed using standard radiological survey instruments in accordance with approved practices and procedures to obtain dose and contamination measurements with sufficient sensitivity to meet cleanup levels. Radiological screening was also performed on the samples themselves during the collection of verification samples. Radiological field screening of the remediated surface and the samples collected indicated no detectable dose rates above background.

Code: 216-N-7	Classification: Accepted
Names: 216-N-7; 216-N-7 Trench; 212-R Grave; 212-R Storage Basin Crib; 212-R Trench	Reclassification: Interim Closed Out (9/11/2007)
Type: Trench	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1952

Description: This trench has been remediated. The trench was excavated and backfilled. It will be revegetated with native grasses. Prior to remediation, the site had been delineated with light weight chain and concrete marker posts and posted with Underground Radioactive Material signs.

Location: The remediated site is located approximately 30 meters (100 feet) northwest of the 212-R Building.

Process Description: The site received radioactively contaminated water and sludge from the 212-R Fuel Storage Basin cleanout in 1952.

Related Sites/ Structures: The site is associated with the 212-R building.

Waste Type: Process Effluent

Waste Description: The site received the water and sludge from 212-R Fuel Storage Basin clean out. The site was retired when 212-R was shut down. The waste type is low activity.

Closure Info: The Remaining Sites Verification Package DOE/RL-2007-039 for the 216-N-7 waste site has documented that the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) for reclassification to Interim Closed Out as established in the Remedial Design/Remedial Action Work Plan for Select 200 North Area Waste Sites (216-N-2, -3, -5 & -7) in the 200-CW-3 Operable Unit (RD/RAWP) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, (Remaining Sites Rod).

The 216-N-7 Waste Site was initially investigated through field observations and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants

were present. The results of the focused sampling of test pits identified levels of contaminants of concern above the Remedial Action Goals (RAGs). Consequently, the trench was excavated to a depth of 4.6 meters (15 feet) to remove contaminated soil and debris for remediation of the waste site. No aboveground piping was found during the remediation activity. Remediation began on May 21, 2007 and was completed on June 21, 2007. The excavation was approximately 713 square meters (7,680 square feet) in area at the top of the excavation with a 1.5 to 1 slope down to 4.6 meters (15 feet). Approximately 2,631 metric tons (2,900 tons) of material from the site were disposed at ERDF.

Once the excavation and disposal of the contaminated soil and debris was completed, radiological field surveys were conducted utilizing a cesium-137 tracer (i.e., indicator) to confirm the removal of detectable contamination, and waste site sampling and analysis were conducted using a multi-incremental sampling design. Multi-incremental sampling was implemented on June 26, 2007, in accordance with the Sampling and Analysis Plan for Remediation of Select 200 North Area Waste Sites (216-N-2, -3, -5, and -7) in the 200-CW-3 Operable Unit (SAP). The contaminants of concern (COCs) were identified based on existing information for the site and the COCs listed in the Remaining Sites ROD. The COC list identified in the SAP included americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, plutonium-238, plutonium-239/240, nickel-63, thorium-232, technetium-99, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls. The sample results indicated that the site achieved compliance with the RAOs and the RAGs. A summary of the cleanup evaluation for the soil results against the applicable criteria was presented in Table 1 of RSVP.

Soil cleanup levels were established in the Remaining Sites ROD based on a limited ecological risk assessment. These soil cleanup levels are referred to as Look-Up Values. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern. Screening levels were not exceeded for the site constituents. A baseline risk assessment for the river corridor portion of Hanford began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support a future final closeout decision for the site.

These results show residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. There is no deep zone for the 216-N-7 Waste Site, therefore no institutional controls are required.

Code: 2607-N	Classification: Accepted
Names: 2607-N; 2743-N Guard House Septic Tank and Tile Field	Reclassification: Rejected (3/17/2010)
Type: Septic Tank	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1952
Description: The site is a septic tank and drain field. The tank is a rectangular, open-topped, concrete tank buried to grade level.	
Location: The unit is located 6 meter (20 feet) south of the 2743-N Guard House foundation and south of the 212-N Building. The drain field lies south of the septic tank system.	
Process Description: The 2607-N septic tank is constructed of reinforced concrete. The tank is 1.2 meters (4 feet) long, 0.6 meters (2 feet) wide and 2.5 meters (8.25 feet) deep (inner dimensions). The tank had	

a design capacity of 795 liters (210 gallons) based on a user capacity of 6 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground surface and the tank is accessible through a 0.9-meter (3-foot) manhole.

Related Sites/ Structures: The 2743-N Guard House was serviced by the 2607-N Septic Tank. Only the guard house foundation remains.

Waste Type: Sanitary Sewage

Waste Description: The site received sanitary waste from the 2743-N Guard House.

Code: 2607-P

Classification: Accepted

Names: 2607-P; 2743-P Guard House Septic Tank and Tile Field

Reclassification: Rejected (3/17/2010)

Type: Septic Tank

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1952

Description: The site is a septic tank and drain field. The tank is a rectangular, open-topped, soil filled concrete tank buried to grade level.

Location: The site is located south of the 2743-P Guard House foundation and south the 212-P Building. The drain field lies south of the septic tank.

Process Description: The 2607-N septic tank is constructed of reinforced concrete. The tank is 1.2 meters (4 feet) long, 0.6 meters (2 feet) wide and 2.5 meters (8.25 feet) deep (inner dimensions). The tank had a design capacity of 795 liters (210 gallons) based on a user capacity of 6 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground surface and the tank is accessible through a 0.9-meter (3-foot) manhole.

Related Sites/ Structures: The 2743-P Guard House was serviced by the 2607-P Septic Tank. Only the building foundation remains.

Waste Type: Sanitary Sewage

Waste Description: The site received sanitary waste from the 2743-P Guard House. The 910-liter (240-gallon)

Description: septic tank appears to have been filled with soil.

Code: 2607-R

Classification: Accepted

Names: 2607-R; 2743-R Guard House Septic Tank and Tile Field

Reclassification: Rejected (3/17/2010)

Type: Septic Tank

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1952

Description: The site is a septic tank and drain field. The tank is a rectangular, open-topped, concrete tank buried to grade level. A field surveillance done in 1998 found the tank to be mostly filled in with soil.

Location: The unit is located south of the 2743-R Guard House foundation and south of the 212-R Building. The drain field lies south of the septic tank.

Process Description: The 2607-N septic tank is constructed of reinforced concrete. The tank is 1.2 meters (4 feet)

Description: long, 0.6 meters (2 feet) wide and 2.5 meters (8.25 feet) deep (inner dimensions). The tank had a design capacity of 795 liters (210 gallons) based on a user capacity of 6 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground surface and the tank is accessible through a 0.9-meter (3-foot) manhole.

Related Sites/ Structures: The 2743-R Guard House was serviced by the 2607-R Septic Tank. Only the building foundation remains.

Waste Type: Sanitary Sewage

Waste Description: The site received sanitary waste from the 2607-R Guard House. The 910-liter (240-gallon) septic tank appears to have been filled with soil. An associated drain field exists.

Code: 600-285-PL

Classification: Accepted

Names: 600-285-PL; Pipeline from 212-N to 216-N-1 Pond

Reclassification: No Action (10/27/2009)

Type: Radioactive Process Sewer

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1952

Description: The waste site is an underground, 46 centimeter (18 inch) diameter, vitrified clay pipe that fed the 216-N-1 pond. A site visit in July 2010 observed the pipeline was posted with Underground Radioactive Material Pipeline signs.

The Confirmatory Sampling/No Action remediation alternative was selected for this pipeline. Only a small portion of the clay pipeline was removed and pulverized for sampling. The remainder of the pipeline was left in place and the radiological postings were removed in November 2010.

Location: The pipeline is located in the 200 North Area. It extends south from the 212-N building to the 216-N-1 Pond.

Process Description: The pond received basin overflow cooling water from the 212-N Fuel Storage Facility via an underground 46-centimeter (18-inch) diameter vitrified clay pipe.

Related Sites/ Structures: The pipeline is associated with the 212-N building and the 216-N-1 Pond.

Waste Type: Process Effluent

Waste Description: The contaminants of potential concern (COPCs) for the 600-285-PL, 600-286-PL and 600-287-PL waste sites were identified based on existing information for the site and the COPCs listed in the Remaining Sites ROD. The COPC list identified in the Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (SAP) (DOE/RL-2007-54) includes americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, plutonium-238, plutonium-239 and 240, nickel-63, thorium-232, technetium-99, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

Closure Info: 600-285-PL, 600-286-PL and 600-287-PL were addressed as a group. The information below documents information for the group of sites.

The results of the focused sampling performed per DOE/RL-2007-54, Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites Located in the 200-CW-3 Operable Unit,

identified no contaminants above the Remedial Action Goals (RAGs) and are in compliance with the Remedial Action Objectives (RAOs). The waste site confirmatory sampling results, reported in DOE/RL-2009-84, support a reclassification of this site to No Action. The waste site confirmatory sampling results indicate current site conditions are in compliance with the RAOs and RAGs for pipeline 600-285-PL. It was left in place. Although the Confirmatory Sampling/No Action remediation alternative was selected for pipelines 600-286-PL and 600-287-PL, the clay pipelines were removed in 2010.

Code: 600-286-PL **Classification:** Accepted

Names: 600-286-PL; Pipeline from 212-P to 216-N-4 Pond **Reclassification:** No Action (10/27/2009)

Type: Radioactive Process Sewer **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1952

Description: The waste site had been an underground, 46 centimeter (18 inch) diameter, vitrified clay pipe that fed the 216-N-4 pond. A site visit in July 2010 observed the pipeline was posted with Underground Radioactive Material Pipeline signs. Although the Confirmatory Sampling/No Action remediation alternative was selected for this pipeline, the clay pipeline was removed in 2010. The radiological posting was removed in January 2011.

Location: The pipeline is located in the 200 North Area. It extends south from the 212-P building to the 216-N-4 Pond.

Process Description: The pond received basin overflow cooling water from the 212-P Fuel Storage Facility via an underground 46 centimeter (18-inch) diameter vitrified clay pipe.

Related Sites/Structures: The pipeline is associated with the 212-P building and the 216-N-4 Pond.

Waste Type: Process Effluent

Waste Description: The contaminants of potential concern (COPCs) for the 600-285-PL, 600-286-PL and 600-287-PL waste sites were identified based on existing information for the site and the COPCs listed in the Remaining Sites ROD. The COPC list identified in the Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (SAP) (DOE/RL-2007-54) includes americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, plutonium-238, plutonium-239 and 240, nickel-63, thorium-232, technetium-99, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

Closure Info: 600-285-PL, 600-286-PL and 600-287-PL were addressed as a group. The information below documents information for the group of sites.

The results of the focused sampling performed per DOE/RL-2007-54, Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites Located in the 200-CW-3 Operable Unit, identified no contaminants above the Remedial Action Goals (RAGs) and are in compliance with the Remedial Action Objectives (RAOs). The waste site confirmatory sampling results, reported in DOE/RL-2009-84, support a reclassification of this site to No Action. The waste site confirmatory sampling results indicate current site conditions are in compliance with the RAOs and RAGs for pipeline 600-285-PL. It was left in place. Although the Confirmatory Sampling/No Action remediation alternative was selected for pipelines 600-286-PL and 600-287-PL, the clay pipelines were removed in 2010.

Code:	600-287-PL	Classification:	Accepted
Names:	600-287-PL; Pipeline from 212-R to 216-N-6 Pond	Reclassification:	No Action (10/27/2009)
Type:	Radioactive Process Sewer	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1952
Description:	The waste site had been an underground, 46 centimeter (18 inch) diameter, vitrified clay pipe that fed the 216-N-6 pond. A site visit in July 2010 observed the pipeline was posted with Underground Radioactive Material Pipeline signs. Although the Confirmatory Sampling/No Action remediation alternative was selected for this pipeline, the clay pipeline was removed in 2010. The radiological posting was removed in January 2011.		
Location:	The pipeline is located in the 200 North Area. It extends south from the 212-R building to the 216-N-6 Pond.		
Process Description:	The pond received basin overflow cooling water from the 212-R Fuel Storage Facility via an underground 46-centimeter (18-inch) diameter vitrified clay pipe.		
Related Sites/ Structures:	The pipeline is associated with the 212-R building and the 216-N-6 Pond.		
Waste Type:	Process Effluent		
Waste Description:	The contaminants of potential concern (COPCs) for the 600-285-PL, 600-286-PL and 600-287-PL waste sites were identified based on existing information for the site and the COPCs listed in the Remaining Sites ROD. The COPC list identified in the Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (SAP) (DOE/RL-2007-54) includes americium-241, cobalt-60, cesium-137, europium-152, europium-154, europium-155, tritium, strontium-90, plutonium-238, plutonium-239 and 240, nickel-63, thorium-232, technetium-99, uranium-233/234, uranium-235, uranium-238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.		
Closure Info:	600-285-PL, 600-286-PL and 600-287-PL were addressed as a group. The information below documents information for the group of sites. The results of the focused sampling performed per DOE/RL-2007-54, Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites Located in the 200-CW-3 Operable Unit, identified no contaminants above the Remedial Action Goals (RAGs) and are in compliance with the Remedial Action Objectives (RAOs). The waste site confirmatory sampling results, reported in DOE/RL-2009-84, support a reclassification of this site to No Action. The waste site confirmatory sampling results indicate current site conditions are in compliance with the RAOs and RAGs for pipeline 600-285-PL. It was left in place. Although the Confirmatory Sampling/No Action remediation alternative was selected for pipelines 600-286-PL and 600-287-PL, the clay pipelines were removed in 2010.		

Code:	UPR-200-N-1	Classification:	Accepted
Names:	UPR-200-N-1; Unplanned Release at the 212-R Railroad Spur	Reclassification:	No Action (3/17/2010)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	In 1992, the railroad track was delineated with light weight chain and posted with Surface Contamination signs and measured 91 meters (300 feet) in length. UPR-200-N-1 is this portion		

of the railroad track extending south from the demolished 212-R building. In 2009, the only postings at UPR-200-N-1 were Contamination Area and Radiation Area postings immediately around the rail cars that remain on the rail spur.

Location: The site is located in 200 North Area, northwest of the intersection of Route 4 North and Route 11A. The site is adjacent to the 212-R building.

Process Description: From 1944 to 1952, irradiated fuel rods were transported to 212-R from the 100 Area reactors by train in water filled cask cars. The fuel rods were transferred from the rail cars to water filled storage basins inside the building. The short lived radionuclides were allowed to decay before transporting the fuel rods to the 200 Areas for processing. From 1982 to 1986, the 212-R facility was used as a maintenance facility for radiologically contaminated rail cars in need of brake and wheel maintenance. Over time, movement and repair of contaminated rail cars caused the track to become contaminated. In 1998, two locomotives and five cask cars were being stored at this location within the Surface Contamination Area.

Waste Type: Equipment

Waste Description: Contaminated rail cars are stored on this railroad spur.

Closure Info: In July 2009, the UPR-200-N-1 waste site was investigated using field observations and focused sampling and analysis for the purpose of determining if hazardous or radiological contaminants were present. This investigative activity was performed in accordance with Sampling and Analysis Plan (DOE/RL-2007-54) and Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (DOE/RL 2007-55). When the current sampling evolution began, the only postings within or near UPR-200-N-1 were Contamination Area and Radiation Area postings immediately around the rail cars that remain on the rail spur.

Code: UPR-200-N-2

Classification: Accepted

Names: UPR-200-N-2; Well Pumphouse East of 212-R; 200-N-2; Unplanned Release Near Well Pumphouse No. 2

Reclassification: No Action (3/17/2010)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was a 6.1 by 6.1-meter (20 by 20-foot) area surrounded by a lightweight chain barrier and Underground Radioactive Material warning signs. There were two open, wood lined holes with valves inside the posted area. They measured approximately 1 meter square and were approximately 1 meter deep. A site visit in July 2010 observed the area adjacent to the pump house foundation posted with chain and Underground Radioactive Material (URMA) signs. Another area nearby contained debris and was posted with Soil Contamination Area (SCA) signs.

In March 2011 the surface debris inside the Soil Contamination Area was removed. A Walking Stick radiological survey was done on both posted areas and found to be free of contamination. The 2009 sample results were reviewed. All the post, chains and radiological postings were removed on March 7, 2011.

Location: The site is adjacent to the northern Well Pump House (Well House No. 2) foundation located east of the demolished 212-R Building. The well house building was demolished in September 2004.

Release Description: There is no information available to explain the nature or cause of the contamination. However, on a site walkdown, done in April 2000, a Radiological Control Technician used her

instrumentation to do an informal survey of the posted area. No contamination was evident on the surface of the posted area.

Process Description: The valve boxes appear to have been related to the pump house operation.

Related Sites/ Structures: The two valve boxes are associated with the well water supply system located within the barrier.

Waste Type: Soil

Waste Description: The contaminants of potential concern (COPCs) for the UPR-200-N-2 waste site were identified based on existing information for the site. COPCs are listed in the Remaining Sites ROD and carried forward to the Sampling and Analysis Plan for Remediation of 200 North Area Waste Sites located in the 200 CW 3 Operable Unit (SAP) (DOE/RL 2007-54) and include americium 241, cobalt 60, cesium 137, europium 152, europium 154, europium 155, tritium, strontium 90, plutonium 238, plutonium 239/240, nickel 63, thorium 232, technetium 99, uranium 233/234, uranium 235, uranium 238, hexavalent chromium, mercury, lead, barium, trivalent chromium, cadmium, antimony, arsenic, manganese, zinc, and polychlorinated biphenyls.

Closure Info: The analytical results from the soil samples meet the remedial action objectives for direct exposure, groundwater protection, and river protection as specified in the Remaining Sites Record of Decision. In accordance with this evaluation, the sampling results support a reclassification of the UPR-200-N-2 waste site to No Action status, as recorded on the Waste Site Reclassification Form included with this report. Per TPA MP-14, No Action status indicates that a waste site does not require any further remedial action under RCRA Corrective Action, CERCLA, or other cleanup standards based on an assessment of quantitative data collected for the waste site as evaluated under this interim Record of Decision. This waste site and the data obtained from the subject sampling evolution will be included in the risk assessment and remedial investigation and feasibility study for final closure of this area.

200-CW-5

Code:	216-Z-1D	Classification:	Accepted
Names:	216-Z-1D; Drainage Ditch to U Swamp; Z Plant Ditch; 216-Z-1	Reclassification:	None
Type:	Ditch	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1959
Description:	The 216-Z-1D Ditch is a backfilled, surface stabilized unit that runs from a point east of the 231-Z Building, curving southward to the 216-U-10 Pond. In 1949, the northern portion of the ditch was backfilled. The backfilled portion of the ditch was replaced with an underground pipeline (see sitecode 200-W-125) for 231-Z effluent. The southern portion of the ditch is co-located within a large Underground Radioactive Material area that also includes the 216-Z-11 and 216-Z-19 ditches.		
Location:	The unit is east of 231-Z Building and runs south to the 216-U-10 Pond. The northern portion of the ditch, which had been converted to a pipeline, was shifted to the east of the original ditch.		
Release Description:	When the 216-Z-19 Ditch was being excavated in 1971, approximately 130 meters (425 feet) of the backfilled 216-Z-1 Ditch near the pipeline outfall was accidentally exhumed (UPR-200-W-110).		
Process Description:	The 216-Z-1D Ditch was used to transfer liquid waste from 231-Z, 234-5Z, and 291-Z Buildings to the 216-U-10 Pond.		
Related Sites/Structures:	The 216-Z-1D Ditch is associated with 200-W-125-PL, 200-W-207-PL, the 216-Z-11 and 216-Z-19 Ditches, the stabilized 216-U-10 Pond, and the 231-Z Building outfall.		
Waste Type:	Process Effluent		
Waste Description:	The 216-Z-1D Ditch received process cooling water, steam condensate, and pump sealant waters from the 231-Z, 234-5Z, and 291-Z Buildings. It is classified as a transuranic contaminated soil site. Plutonium and americium are the dominant radionuclides present in the ditch. The majority of the plutonium was retained in the ditch sediments and did not flow into the 216-U-10 Pond. A comparison of annual plutonium discharges for the dates when the 216-Z-1 Ditch was active indicates that at least 1.4 Kilograms (3 pounds) of plutonium was released to the 216-Z-1 Ditch. The contamination burden includes 137 curies of Pu-239 and 37 curies of Pu-240.		
	Previously, in 1959, when the entire ditch was open from its original inlet from the 234-5Z Building (before the upper 526 meters were replaced with a pipeline), a mud sampling project took three samples of the ditch sediment every 100 feet from the inlet pipe to the outlet into 216-U-10 Pond (81 samples from the Z-1D ditch, plus others from 216-U-10 Pond shoreline). The levels of plutonium ranged up to 27.1 micrograms per gram plutonium (almost all plutonium 239) at 800 feet from the inlet. The levels at 485 meters (1600 feet) from the inlet were still at 1.7 micrograms per gram plutonium. The 1959 report concluded that there was between 3 and 10 kilograms of plutonium in the ditch.		

Code:	216-Z-11	Classification:	Accepted
Names:	216-Z-11; 216-Z-11 Ditch; Z Plant Ditch	Reclassification:	None
Type:	Ditch	Start Date:	1/1/1959
Status:	Inactive	End Date:	1/1/1971

Description: 5Z facility southward to the 216-U-10 Pond. The ditch is currently co-located within a large, posted Underground Radioactive Material area that also includes the 216-Z-1D and 216-Z-19 ditches. When active, the unit was a long narrow ditch with 2.5:1 sloped sides and a 0.05% grade.

Location: The ditch began at a point southeast of the 241-Z tanks and ran south to the 216-U-10 Pond. The first 37 meters (120 feet) of the ditch and last 203 meters (665 feet) of the ditch reused portions of the 216-Z-1D Ditch.

Process Description: The 216-Z-11 Ditch was installed to replace the 216-Z-1D ditch. The 216-Z-11 ditch received liquid waste from Plutonium Finishing Plant process sewer, 291-Z and 231-Z until it was deactivated in 1971. The 216-Z-11 was replaced by the 216-Z-19 Ditch. During the 1960's, a special Space Nuclear Auxiliary Power program was operating in Z-Plant. The program isolated plutonium-238 and released an unknown amount of plutonium 239/240 to the 216-Z-11 ditch as waste.

Related Sites/Structures: Structures associated with this unit include the remnants of the 216-Z-1D and 216-Z-19 Ditches, UPR-200-W-110, the 216-U-10 Pond, and the culvert beneath Sixteenth street. The pipeline from 231-Z to the ditches is sitecode 200-W-125-PL. The pipeline from 234-5Z to the ditch is sitecode 200-W-207-PL.

Waste Type: Process Effluent

Waste Description: The total volume discharged to this ditch is unknown. The ditch received process cooling water and steam condensate from the 234-5Z Building, cooling and seal water from the 291-Z Stack, and laboratory waste from 231-Z. It also received storm water from an elevated tank located south to 234-5Z. The site is a transuranic contaminated soil site. During the 1960's, a special Space Nuclear Auxiliary Power program was operating in Z-Plant. The program isolated plutonium-238 and released plutonium 239/240 to the 216-Z-11 ditch as waste. Plutonium and americium were the dominant radionuclides in the effluent discharge. The ditch has been reported to contain 137 curies of plutonium 239 and 37 curies of plutonium 240.

Code: 216-Z-19	Classification: Accepted
Names: 216-Z-19; 216-Z-19 Ditch; Z Plant Ditch; 216-U-10 Ditch	Reclassification: None
Type: Ditch	Start Date: 1/1/1971
Status: Inactive	End Date: 1/1/1981

Description: The 216-Z-19 Ditch is a backfilled, surface stabilized site. The ditch is currently co-located within a large Underground Radioactive Material area that also includes the 216-Z-1D and 216-Z-11 ditches.

Location: The ditch is an irregular site positioned in a north-south configuration. The head end is located east of the 216-Z-1A Tile Field and extends southward to the 216-U-10 Pond.

Release Description: In March of 1976, an estimated 30 to 60 grams of plutonium was accidentally released to the 216-Z-19 ditch. Soil samples collected from the ditch in March and April 1976 identified large amounts of plutonium and americium. In an effort to keep the contamination contained within the ditch, three earth dams were constructed across the ditch at intervals to impound the water and allow the contaminants to settle to the bottom. A sprinkler system was installed to keep the downstream portions of the ditch from drying and allowing contamination to spread in the wind. The dams were removed in June 1978.

Process Description: The 216-Z-19 Ditch operated as a waste disposal/transfer line for various Plutonium Finishing Plant facilities. The ditch received effluent from the 234-5Z, the 291-Z stack, and the 231-Z

Buildings. The ditch was fed by three underground process sewer pipelines that entered the head end of the ditch. The ditch was deactivated and backfilled when discharges transferred to the 216-Z-20 Crib.

Related Sites/ Structures: Structures associated with this site include the remnants of the 216-Z-1D and the 216-Z-11 Ditches, the 216-U-10 Pond, the stormwater and process sewer outfalls from the Plutonium Finishing Plant, and the pipeline from 231-Z. The pipeline from 234-5Z to the ditch is sitecode 200-W-207-PL.

Waste Type: Process Effluent

Waste Description: The unit is considered a transuranic contaminated soil site. The effluents received by this ditch include process cooling water, steam condensate, pump seal waste from Plutonium Finishing Plant, and cooling water from the 231-Z Buildings. The dominant radionuclides present include plutonium, americium, strontium, and cesium. Approximately 60 grams of plutonium was released to the ditch in March 1976.

Code: 216-Z-20 **Classification:** Accepted

Names: 216-Z-20; Z-19 Ditch Replacement Tile Field **Reclassification:** None

Type: Crib **Start Date:** 1/1/1981

Status: Inactive **End Date:** 1/1/1995

Description: The site is marked and posted as an Underground Radioactive Material area.

Location: The site is located northwest of the 241-U Tank Farm. It is west of and parallel to the backfilled 216-Z-19 Ditch.

Process Description: The crib was build to receive effluent from the Plutonium Finishing Plant facilities and the 231-Z building. It was built to replace the 216-Z-19 ditch. Although drawing H-2-92061 indicates the crib structure has varied depths of 2.7 to 8.8 meters (9 to 29 feet) below ground surface, a recent engineering review determined this to be an error. Note 10 on this drawing states there was a soil mound at this station and other areas. Backfill soil was to be leveled to maintain uniform elevation after 216-Z-20 was constructed. The crib structure varied depths are now assumed to be 2.47 to 3.87 meters (8.09 to 12.69 feet) below ground surface. Three 6 inch (15 centimeter) perforated PVC distribution pipes run the length the crib to the south end, where the pipes are capped. A set of risers (three in a row across the width of the unit) rose to a height of 0.46 meters (1.5 feet) above grade at 4 locations along the length of the unit. The unit was filled with gravel and backfilled over with soil with a side slope of 1:2.

Related Sites/ Structures: The crib is associated with the 234-5 and 236 facilities. The pipeline from 234-5Z to 216-Z-20 is sitecode 200-W-207-PL. Effluent from pipeline 200-W-125-PL was also diverted to 216-Z-20.

Waste Type: Steam Condensate

Waste Description: The site has received cooling water, steam condensate, storm sewer, building drains, Hanford Engineering and Development Laboratory Radioactive Acid Digestion Test Unit (HEDL RADTU) cooling water, and chemical drains waste from the 234-5Z Building; cooling water steam condensate and laboratory drains from the 231-Z Building; and miscellaneous drains waste from 291-Z, 232-Z, and 236-Z buildings. The unit also received wastes from 2736-Z Building, (Construction Project B-246). In 1987, 70 gallons per minute of non-radioactive, thermally warm (105 degrees F), water from Z Plant was permanently diverted from the 216-Z-20 to the 216-Z-21 Seepage Basin.

Code: UPR-200-W-110 **Classification:** Accepted

Names: UPR-200-W-110; Contaminated Soil from 216-Z-1; UN-216-W-20 Spoil Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1971

Status: Inactive **End Date:** 1/1/1971

Description: The site is a one-time use waste disposal trench. The trench is the location where backfill material from the north end of the 216-Z-1 Ditch was placed following excavation for a new ditch. During construction for the 216-Z-19 Replacement Ditch, workers placed the excavated material on a spoils pile. Later that material was found to be contaminated and it was moved to the disposal trench. The ditches and the trench have been backfilled and are co-located within an "Underground Radioactive Material" (URM) zone. This area was surface stabilized in 1982. The area is marked with concrete posts and an intermittent light chain. The site is vegetated with crested wheatgrass and Indian ricegrass over very sandy soil. There is evidence of rodent burrowing on and adjacent to the URM area. An air monitor is on the site at the north end.

Location: The site is east of and parallel to the north end of the 216-Z-19 and 216-Z-11 ditches in the 200 West Area.

Release Description: On April 14, 1971, Plant Forces mistakenly dug into the contaminated backfill of the abandoned 216-Z-1 Ditch while excavating a new ditch. Approximately 130 meters (425 feet) of the abandoned ditch was uncovered before the error was discovered. An inch-thick decayed vegetation matting from the bottom of the old ditch was found to contain alpha contamination to a maximum of 100,000 disintegrations per minute. The matting was broken up during the excavation and scattered through the "spoil pile" of the new ditch. Only a trace of contamination was detected in the excavation. Work was discontinued until surveys could be completed for a proper routing of the new ditch. A sprinkler system was installed to prevent the wind from spreading contamination from the spoil pile. The new ditch (216-Z-19) was dug approximately 10.7 (35 feet) west of the original buried ditch. The 216-Z-19 was ready for water diversion as soon as the 16th Street culvert was cleaned of sludge and weeds. A 4.6 meter (15 foot) deep burial trench was dug east of and adjacent to the 216-Z-11 ditch. A 2.1 meter (7 foot) layer of spoils material was placed in the trench and covered with 2.4 meters (8 feet) of clean soil overburden.

Related Sites/ Structures: UPR-200-W-110 was associated with the 216-Z-1 Ditch and the 216-Z-19 Ditch. The trench (UPR-200-W-110) is within a larger Underground Radioactive Material (URM) area.

Waste Type: Soil

Waste Description: Decayed vegetation matting from the bottom of the 216-Z-1 Ditch was found to contain alpha contamination to a maximum of 100,000 disintegrations per minute. The 216-Z-1 Ditch was contaminated with americium and plutonium originating from process leaks contaminating the Z Plant cooling water discharge system. The contamination subsequently settled out of the water or was absorbed by aquatic plant life growing on the sides and bottom of the ditch.

Radioactivity computed from soil samples taken from the spoil pile showed an alpha concentration of 0.34 nanocuries per gram of soil. This was 30 times less than the minimum 10 nanocuries per gram standard that required "packaging for recovery" plutonium burials.

200-DV-1

Code:	216-B-5	Classification:	Accepted
Names:	216-B-5; 241-B-361 Dry Well; 241-B-361 Reverse Well; 241-B-5 Dry Well; 299-E28-29	Reclassification:	None
Type:	Injection/Reverse Well	Start Date:	4/1/1945
Status:	Inactive	End Date:	10/1/1947
Description:	The site is delineated with concrete AC-540 markers. It is posted with Underground Radioactive Material signs. The surface is covered with coarse rock.		
Location:	The site is located east of Baltimore Avenue, south of 216-B-9 crib. The surveyed coordinates for this well are 573781.063 (Easting) and 136732.009 (Northing).		
Process Description:	The 216-B-5 reverse well is the deepest Hanford reverse well and the only one to discharge waste directly to the water table. The reverse well received approximately 30,600,000 liters (8,008,000 gallons) of B Plant and 224-B waste solutions. The waste overflowed into the reverse well from the 241-B-361 settling tank, which removed the particulates. A total of 4.7 kilograms (10.3 pounds) of plutonium was discharged to the settling tank and reverse well. Half of the plutonium was retained in the settling tank. An estimated 2.15 kilograms (4.7 pounds) of plutonium overflowed into the reverse well. A water sample collected from well 299-E33-18 in September 1947 revealed alpha contamination in the groundwater ($<20 \times 10^{-7}$ micro curies/liter). Eleven additional wells were drilled in 1947 and 1948 to evaluate the contamination plume. The zone of groundwater contamination extended laterally 600 meters (2000 feet) from the reverse well. The reverse well was characterized again in 1980. The unit is 92 meters (302 feet) long, composed of vertical piping with various sizes in sections measuring 41-centimeter (16-inch) piping from ground level to 4 meters (13 feet); 0.3-meter (12-inch) piping placed inside 41-centimeter (16-inch) sections, extending to 31 meters (100 feet); 25-centimeter (10-inch) piping placed inside 0.3-meter (12-inch) sections, extending to 74 meters (242 feet); 20-centimeter (8-inch) piping placed inside 25-centimeter (10-inch) sections, extending to 92 meters (302 feet) below grade. The lowest 15-meter (50-foot) section of the 20-centimeter (8-inch) pipe is		
Related Sites/Structures:	The well was connected to the 241-B-361 settling tank by a 5-centimeter (2-inch) stainless-steel inlet pipe entering 3.7 meters (12 feet) below grade.		
Waste Type:	Process Effluent		
Waste Description:	Until September 1946, the site received supernatant overflow from 241-B-361 Settling Tank waste via Tank 5-6 in 221-B Building and liquid waste from 224-B Building. From September 1946 to October 1947, the site received the cell drainage and other liquid waste via Tank 5-6 in 221-B. The 224-B effluent was rerouted to the new 216-B-7A Cribs. The waste was low in salt and was neutral to basic. Approximately 2.15 kilograms (4.7 pounds) of plutonium was discharged to the reverse well.		

Code:	216-B-7A&B	Classification:	Accepted
Names:	216-B-7A&B; 216-B-7B Sump; 241-B-1 and 2 Cribs; 241-B-201 Crib; 216-B-7 Crib; 216-B-7A & B; 216-B-7A Sump	Reclassification:	None
Type:	Crib	Start Date:	1/1/1946
Status:	Inactive	End Date:	1/1/1967
Description:	The cribs are located beneath a larger area of scraped contaminated soil from the UPR-200-E-		

144 stabilization. The contaminated soil from the unplanned release area and the cribs were covered with clean backfill and posted with Underground Radioactive Material signs. The crib locations are identified with light post and chain with Cave-in Potential signs.

- Location:** The site is located north of 241-B Tank Farm and east of Baltimore Avenue. The cribs are approximately 8.6 meters (28.2 feet) apart. 216-B-7B is the northwest crib, and 216-B-7A is the southeast crib.
- Process Description:** The 216-B-7A and 216-B-7B site consists of two wooden cribs, placed side by side, connected by underground piping. Effluent drained into 216-B-7A and 216-B-7B simultaneously through a T-fitting in the pipeline from the 201-B settling tanks (241-B-201, 241-B-202, 241-B-203 and 241-B-204) located inside the 241-B Tank Farm. Process effluent from 221-B and 224-B was routed to the settling tanks from 1946 through 1967 and dispersed to the cribs. In 1951, cell drainage from 221-B was diverted to the 216-B-9 Crib. In 1954, the 224-B waste stream was diverted to the 216-B-8 Crib when the cribs exceeded their infiltration capacity. The cribs were reactivated and used intermittently from December 1954 through May 1967 when it was determined that they had reached their radionuclide capacity. A letter written by G.L. Hanson in September 1967 states that the cribs received approximately 49 million liters (13 million gallons) of process waste from 221-B and 224-B from 1946 through 1958. These wastes contained 4300 grams of plutonium and 5400 curies of beta/gamma emitters. After 1958, the cribs received an additional 752,000 liters (198,000 gallons) of B Plant waste containing 2100 curies of beta/gamma emitters that included 14 curies of Cesium-137 and 2080 curies of Strontium-90. Cesium, cobalt, tritium and alpha contamination was detected in groundwater samples taken from well 299-E33-18 in 1967, which monitors these cribs

Related Sites/Structures: The cribs are associated with 221-B, 224-B, the 241-B Tank Farm, tanks 241-B-201 through 241-B-204, and UPR-200-E-144. The pipeline that fed the cribs is sitecode 200-E-281-PL.

Waste Type: Process Effluent

Waste Description: The site received the liquid waste from 221-B and 224-B via overflow of 201-B Settling Tanks. From September 1946 through October 1947, the cribs received waste from 224-B. From October 1947 to August 1948, the site received the 224-B waste stream plus cell drainage (tank 5-6) and other liquid waste from 221-B. From August 1948 to July 1951, the site received liquid waste from 224-B. The tank 5-6 waste was diverted to the 216-B-9 Crib. From July 1951 through December 1954, the cribs continued to receive waste from 224-B. In December 1954 the cribs exceeded their infiltration capacity and the waste was diverted to the 216-B-8 Crib. From December 1954 to October 1961, the site received Cell 5-6 drainage and equipment cleanout waste from 224-B. From October 1961 to May 1967, the site received decontamination and construction waste from 221-B. In May 1967 it was determined that the cribs has reached their radionuclide capacity and were terminated. The B Plant effluent was rerouted to the 216-B-12 Crib. The waste is low in salt, neutral to basic, and contains transuranic (TRU) fission products.

Code: 216-B-8	Classification: Accepted
Names: 216-B-8; 216-B-8TF; 241-B-3 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1954

Description: The crib and tile field are identified with concrete AC-540 monuments and posted with Underground Radioactive Material signs. The crib is delineated with light post and chain with Cave-In Potential signs. The surface is covered with gravel.

Location: The site is located north of the 241-B Tank Farm, east of Baltimore Avenue. It is north of 216-B-7A and 216-B-7B Cribs .

Process Description: B Plant operated from April 1945 through October 1952, separating plutonium from irradiated fuel rods using the bismuth phosphate process. The first separation step removed the metal coating from the fuel rods. Next the uranium was dissolved and the plutonium was extracted. The waste from this step was called Metal Waste. This waste stream contained all of the uranium and 90% of the fission products and was stored in the single shell tanks. The extracted plutonium went through two decontamination cycles to further purify it. The first cycle waste was combined with the coating waste. It contained 10% of the fission products and 1% of plutonium. The second decontamination cycle waste contained less than 0.1% of the fission products. The first and second cycle waste were originally discharged to the single shell tanks. In 1948, due to the lack of waste storage space in the tank farms, second cycle waste stored in the tank farms began to be released to cribs. The 216-B-8 Crib received second cycle waste from B Plant via the 241-B-110, 241-B-111 and 241-B-112 cascading tanks, located in the 241-B Tank Farm.

Related Sites/Structures: The site is associated with 221-B, 224-B, 241-B, 200-E-45 (Health Instrument Shaft) and UPR-200-E-144. The pipeline associated with this crib is sitecode 200-E-178-PL.

Waste Type: Process Effluent

Waste Description: From February 1948 through July 1951, the site received second-cycle waste supernatant from 221-B Building. In August 1948, sludge from the 241-B-104 tank was inadvertently released to the crib and the crib became plugged. The sludge contained roughly 1000 times the amount of plutonium and 5000 times the fission products as would be found in the supernate usually discharged to cribs. Acid was added to the crib in an attempt to unplug the crib. The acid did not significantly improve the crib blockage so the tile field was added to receive crib overflow. From July 1951 to December 1951, the site received the second cycle waste plus cell drainage stored in Tank 5-6 and other liquid waste from in 221-B Building. From December 1951 to December 1952, the site received decontamination and cleanup waste generated during the shutdown of 221-B and 224-B. Some documents state the pipeline to the 216-B-8 Crib was blanked and the effluent routed to 216-B-7A in December 1954. However, H-2-2928 shows the effluent was rerouted to 216-B-11 A&B. The waste is high in salt, is neutral to basic, and contains transuranic (TRU) waste and fission products.

Code: 216-B-9	Classification: Accepted
Names: 216-B-9; 216-B-9TF; 241-B-361 Crib; 5-6 Crib and Tile Field; 216-B-361 Crib	Reclassification: None
Type: Crib	Start Date: 8/1/1948
Status: Inactive	End Date: 7/1/1951

Description: The crib and tile field have been surface stabilized. It is marked and posted as an Underground Radioactive Material (URM) area. The crib is located in the south end of the posted URM area. It is separately marked and posted as a Radiologically Controlled Area, Cave-in Potential. The surface has been planted with wheat grass.

Location: The unit is south of 241-B Tank Farm, east of Baltimore Avenue.

Release Description: (UPR-200-E-7) On November 30, 1954, leakage from the waste line between 221-B and the 241-B-361 crib caused the ground to cave-in near the 241-B-361 crib. Approximately 19,000 liters (5000 gallons) of liquid was lost to the ground. The maximum dose rate observed was 1.7 rads/hour over an area covering 2.7 square meters (30 square feet). The contamination was covered and delineated with a chain fence. The area was posted with "Underground Contamination" signs.

Process Description: The 216-B-9 Crib and Tile Field were built to replace the 241-B-361 Settling Tank and the 216-

B-5 Reverse well. The drainage waste from the B Plant 5-6W cells was rerouted directly to this crib, by-passing the 241-B-361 settling tank. The 216-B-9 crib carries an alias of 241-B-361 crib, even though the 241-B-361 tank was by-passed. A total of 18,400,000 liters of waste was discharged to the crib between August 1948 and January 1950. The waste contained approximately 95 grams (3.3 ounces) of plutonium and 2050 curies of fission products. Sludge in the waste plugged the crib and decreased its capacity. Acid was added to the crib to keep it in operation. The crib eventually became sealed with sludge and overflow into the tile field began in November 1948. Test holes were placed in the tile field to inspect its drainage. In April 1949, 7 inches of liquid was found in Test Hole #2. A sample of the liquid was analyzed and revealed 11.5 micro curies/liter of fission products and 9,000 disintegrations per minute per liter of alpha contamination. Test Hole #2 was found to be dry in October 1949. Sediment samples taken at that time revealed 152 micro curies per kilogram of fission products and 943,000 disintegrations per minute per kilogram of alpha contamination. The unit is a wooden structure, 4.3 by 4.3 meters (14 by 14 feet) (bottom surface) by 2.4 meters (8 feet) high, located in an excavation. The timbers are 15.2 by 15.2 centimeters (6 by 6 inches). The tile field, 55.0 by 25.6 meters (180 by 84 feet), is 165 meters (540 linear feet) of 15.2-centimeter (6-inch) clay tile pipe, with each leg in a trench 1.2 meters (4 feet) wide at the bottom. Pipes are buried 3.7 meters (12 feet) deep at head and 1.8 meters (6 feet) at the other end. Above and below the pipes are 45.7 centimeters (18 inches) of gravel. Roofing felt covers the top side of the pipes. Three legs branch from each side of clay pipe, leaving at 45 degrees to the trunk. The side slope is 1:1.5.

Related Sites/ Structures: The crib is associated with 221-B and UPR-200-E-7. The pipeline associated with this crib is 200-E-195-PL and 200-E-199-PL.

Waste Type: Process Effluent

Waste Description: The site received cell drainage and other liquid waste via Tank 5-6 in 221-B Building. The waste is low in salt, neutral to basic, and contains transuranic (TRU) and fission products. A sample of the sediments collected in 1949 through a well casing revealed 1830 microcuries per kilogram of fission products and 14,800,000 disintegrations per minute per kilogram of alpha contamination.

Code: 216-B-11A&B **Classification:** Accepted

Names: 216-B-11A&B; 216-B-11B; 242-B-1 Crib; 216-B-11 Crib; 216-B-11A & B **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1954

Description: The cribs are located beneath a larger area of scraped contaminated soil from the UPR-200-E-144 stabilization, completed in 1992. The consolidated contaminated soil was covered with clean backfill and reposted as Underground Radioactive Material. The crib locations are identified with light post and chain with Cave-in Potential signs. The cribs consists of two corrugated metal culverts that are buried vertically. The metal culverts are perforated with holes that begin 15.24 centimeters (6 inches) from the bottom of the culverts. The culverts are 9.15 meters (30 feet) long and 2.44 meters (8 feet) in diameter. They are filled with 32.13 cubic meters (42 cubic yards) of rock. The culverts are placed 18 meters (60 feet) apart and are connected with a 7.6 centimeter (3 inch) steel pipe.

Location: The cribs are located north of 241-B Tank Farm, and east of Baltimore Avenue, adjacent to the 216-B-7A&B Cribs. The 216-B-11A is the southern crib; 216-B-11B is the northern crib. The cribs are 16 meters (52.5 feet) apart.

Process Description: The site originally received condensate waste from the 242-B Evaporator. Drawing H-2-2928 shows 216-B-8 crib waste being rerouted to 216-B-11 A&B in 1954.

Related Sites/ Structures: There are two pipelines associated with these cribs. See sitecodes 200-E-176-PL and 200-E-177-PL.

Waste Type: Process Effluent

Waste Description: The site originally received condensate waste from the 242-B Evaporator. Drawing H-2-2928 shows 216-B-8 crib waste being rerouted to 216-B-11 A&B in 1954. The waste is low in salt and is neutral to basic.

Code: 216-B-35 **Classification:** Accepted

Names: 216-B-35; 216-B-35 Trench; 216-BX-1 Trench; 241-BX-1 Grave **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of B Plant and west of the 241-BX Tank Farm .

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.

Related Sites/ Structures: The trench is associated with 221-B and the 241-BX Tank Farm.

Waste Type: Process Effluent

Waste Description: The site received first-cycle supernatant waste from 221-B Building. The waste is high in salt and is neutral to basic.

Code: 216-B-36 **Classification:** Accepted

Names:	216-B-36; 216-B-36 Trench; 216-BX-2 Trench; 241-BX-2 Grave	Reclassification:	None
Type:	Trench	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1954
Description:	The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.		
Location:	The trench is located north of B Plant and west of the 241-BX Tank Farm.		
Process Description:	In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.		
Related Sites/ Structures:	The trench is associated with the 221-B facility.		
Waste Type:	Process Effluent		
Waste Description:	The site received first-cycle supernatant waste from 221-B Building. The waste is high in salt and is neutral to basic.		

Code:	216-B-37	Classification:	Accepted
Names:	216-B-37; 216-B-37 Trench; 216-BX-3 Trench; 241-BX-3 Grave	Reclassification:	None
Type:	Trench	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1954
Description:	The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.		
Location:	The trench is located north of B Plant and west of the 241-BX Tank Farm.		
Process Description:	In order to provide the tank space needed to support the fuel separations operations in 200 East		

Description: and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.

Related Sites/ Structures: The trench is associated with the 242-B Evaporator.

Waste Type: Process Effluent

Waste Description: The site received evaporator bottom waste from the 242-B Waste Evaporator after it had processed B Plant first cycle waste. The waste is high in salt and is neutral to basic.

Code: 216-B-38	Classification: Accepted
Names: 216-B-38; 216-B-38 Trench; 216-BX-4 Trench; 241-BX-4 Grave	Reclassification: None
Type: Trench	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1954

Description: The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of B Plant and west of the 241-BX Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The

coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.

Related Sites/ The trench is associated with the 221-B facility and 241-BX Tank Farm.

Structures:

Waste Type: Process Effluent

Waste Description: The site received first-cycle supernatant waste from 221-B Building. The waste is high in salt and is neutral to basic.

Code: 216-B-39	Classification: Accepted
Names: 216-B-39; 216-B-39 Trench; 216-BX-5 Trench; 241-BX-5 Grave	Reclassification: None
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1954

Description: The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of B Plant and west of the 241-BX Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.

Related Sites/ The trench is associated with the 221-B facility.

Structures:**Waste Type:** Process Effluent**Waste Description:** The site received first-cycle supernatant waste from 221-B Building. The waste is high in salt and is neutral to basic.

Code: 216-B-40 **Classification:** Accepted**Names:** 216-B-40; 216-B-40 Trench; 216-BX-6 Trench; 241-BX-6 Grave; 241-BX-6 Trench **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1954**Status:** Inactive **End Date:** 1/1/1954**Description:** The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.**Location:** The trench is located north of B Plant and west of the 241-BX Tank Farm.**Process Description:** In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.**Related Sites/ Structures:** The trench is associated with the 221-B facility.**Waste Type:** Process Effluent**Waste Description:** The site received first-cycle supernatant waste from the 221-B Building. The waste is high in salt and is neutral to basic.

Code: 216-B-41 **Classification:** Accepted**Names:** 216-B-41; 216-B-41 Trench; 216-BX-7 Trench; 241-BX-7 Grave **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1954

Status:	Inactive	End Date:	1/1/1954
Description:	The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.		
Location:	The trench is located north of B Plant and west of the 241-BX Tank Farm .		
Process Description:	In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank or tri-butyl phosphate waste from the Uranium Recovery process.		
Related Sites/ Structures:	The trench is associated with the 221-B facility.		
Waste Type:	Process Effluent		
Waste Description:	The site received the first-cycle supernatant waste from the 221-B Building. The waste is high in salt and is neutral to basic.		

Code:	216-B-42	Classification:	Accepted
Names:	216-B-42; 216-B-42 Trench; 216-BX-8 Trench; 241-BX-8 Grave	Reclassification:	None
Type:	Trench	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1955
Description:	The 216-B-35 through 216-B-42 trenches were surface stabilized as a unit. The area is marked with concrete AC-540 posts and Underground Radioactive Material signs. The surface has been planted with wheat grass.		
Location:	The trench is located north of B Plant and west of the 241-BX Tank Farm .		
Process Description:	In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil		

volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It was combined with the coating waste to form the waste stream known as first cycle waste. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through additional decontamination cycles to purify it, producing the second cycle waste stream. The liquid waste from these processes were initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tanks or tri-butyl phosphate waste from the Uranium Recovery process.

Related Sites/ Structures: This trench is associated with the Uranium Recovery operation done at the 221-U facility.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from the 221-U Building via the 241-BY tank farm. The waste is high in salt and is neutral to basic.

Code: 216-B-43

Classification: Accepted

Names: 216-B-43; 216-BY-1 Cavern; 216-BY-1 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1954

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded concrete AC-540 markers and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with 216-B-44 through 216-B-50.

Release Description: See UPR-200-E-9 and UPR-200-E-89

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T, TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. Each of the eight cribs (216-B-43 through 216-B-50) were constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts buried vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). The culverts are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert is fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (active in November 1954)

Code: 216-B-44 **Classification:** Accepted

Names: 216-B-44; 216-BY-2 Cavern; 216-BY-2 Crib **Reclassification:** None

Type: Crib **Start Date:** 12/1/1954

Status: Inactive **End Date:** 3/1/1955

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is north of 241-BY Tank Farm and west of Baltimore Ave. in a common area with the 216-B-43 through 216-B-50 cribs.

Release Description: See UPR-200-E-89

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T,TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (active December 1954 - March 1955)

Code: 216-B-45 **Classification:** Accepted

Names: 216-B-45; 216-BY-3 Cavern; 216-BY-3 Crib **Reclassification:** None

Type: Crib **Start Date:** 4/1/1955

Status: Inactive **End Date:** 6/1/1955

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common

area with the 216-B-43 through 216-B-50 cribs.

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T, TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received the scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (active April - June 1955)

Code: 216-B-46	Classification: Accepted
Names: 216-B-46; 216-BY-4 Cavern; 216-BY-4 Crib	Reclassification: None
Type: Crib	Start Date: 9/1/1955
Status: Inactive	End Date: 12/1/1955

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with the 216-B-43 through 216-B-50 cribs.

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T, TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent
Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (active September - December 1955)

Code: 216-B-47 **Classification:** Accepted
Names: 216-B-47; 216-BY-5 Cavern; 216-BY-5 Crib **Reclassification:** None
Type: Crib **Start Date:** 9/1/1955
Status: Inactive **End Date:** 9/1/1955

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with the 216-B-43 through 216-B-50 cribs.

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T, TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent
Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (Active September 1955)

Code: 216-B-48 **Classification:** Accepted
Names: 216-B-48; 216-BY-6 Cavern; 216-BY-6 Crib **Reclassification:** None
Type: Crib **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1955

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with the 216-B-43 through 216-B-50 cribs.

Process Description: From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T, TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from

the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 221-U Uranium Recovery process. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. The pipeline to the unit was valved out when specific retention capacity was reached. Crib service duration discrepancies appear in historical documentation. ARH-947, HW-55176 and HW-83718 show November 1955 to February 1957 as the service duration. RHO-CD-673 shows November 1955 to July 1957 as the service duration. ARH-2806 shows November 1955 to November 1955 as the service duration. The start and end dates for adjacent cribs was 1955. In 1956 when a nearby groundwater monitoring well found elevated levels of cobalt-60 and cesium 137, effluent release in this area was discontinued. So the 1957 end date is questionable.

Code: 216-B-49	Classification: Accepted
Names: 216-B-49; 216-BY-7 Cavern; 216-BY-7 Crib	Reclassification: None
Type: Crib	Start Date: 11/1/1955
Status: Inactive	End Date: 12/1/1955
Description:	The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.
Location:	The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with the 216-B-43 through 216-B-50 cribs.
Process Description:	From 1952 through 1958, Bismuth Phosphate process waste stored in 241-T,TX, 241-B, BX, BY, 241-C and 241-U tank farms was transferred to 221-U to recover the uranium from the waste after the tank sludge had been thinned with nitric acid. The uranium was extracted from the tank waste using Tri-butyl Phosphate (TPB) in a normal paraffin diluent. The waste from the uranium recovery process was neutralized and transferred to the 241-BY tank farm. The TBP process waste was treated with potassium ferrocyanide to precipitate most of the cesium and strontium. The supernate was decanted first to the 216-B-43 through 49 cribs and later to the BC Cribs and trenches. Crib 216-B-50 was not used for TBP waste. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received scavenged tributyl phosphate (TBP) supernatant waste from 221-U Building. The waste is high in salt and is neutral to basic. It included inorganic compounds such as ferrocyanide, nitrate and phosphate. (Active November-December 1955)

Code: 216-B-50

Classification: Accepted

Names: 216-B-50; 216-BY-8 Cavern; 216-BY-8 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1965

Status: Inactive

End Date: 1/1/1974

Description: The 216-B-43 through 216-B-50 cribs were stabilized as a unit with gravel. The group of cribs are surrounded with light chain and posted Underground Radioactive Material.

Location: The unit is located north of 241-BY Tank Farm and west of Baltimore Avenue in a common area with the 216-B-43 through 216-B-49 cribs.

Process Description: The 216-B-50 crib received condensate from the 241-BY tank farm In-Tank Solidification system. The crib was originally constructed along with seven others in the same location (216-B-43 through 49) to receive scavenged tributyl phosphate (TBP) waste. The other seven were used for this purpose, but taken out of service when a cobalt-60 and cesium-137 breakthrough to groundwater occurred in 1956. The decision to use the 216-B-50 crib for ITS condensate was made about 8 or 9 years later when monitoring showed that the groundwater radioactivity levels were definitely decreasing. The crib was constructed of four 1.22-meter (4-foot) diameter by 1.22-meter (4 foot) long concrete culverts placed vertically, 2.14 meters (7 feet) below grade, on a 1.53-meter (5-foot) bed of 7.62-centimeter (3-inch) gravel (291 cubic meters [380 cubic yards]). Pipes are arranged in a square with the centers spaced 4.58 meters (15 feet) apart in a 9.15 by 9.15 by 4.58-meter (30 by 30 by 15-foot) deep excavation. Each culvert was fed by an 20.32-centimeter (8-inch) steel pipe coming from a main and forming a chevron pattern. Each culvert has a concrete cover.

Related Sites/ Structures: The crib is associated with the 241-BY tank farm and 216-B-57 crib. The pipeline that fed the BY cribs is discussed in sitecode 200-E-219-PL.

Waste Type: Process Effluent

Waste Description: The site received the waste storage tank intermediate level process condensate from the In Tank Solidification (ITS) #1 unit in the 241-BY Tank Farm.

Since startup of the #1 ITS in March, 1965, approximately five and one-half million gallons of condensate containing about 120 beta curies of activity, including about 70 curies of cesium-137, have been routed to the 216-B-50 crib (as of April 1968). The crib was originally constructed along with seven others in the same location to receive scavenged tributyl phosphate (TBP) waste. The other seven were used for this purpose, but the crib site was taken out of service when a cobalt-60 and cesium-137 breakthrough occurred. The decision to use the 216-B-50 crib for ITS condensate was made about 8 or 9 years later when it was known that the groundwater activity levels were definitely decreasing. It was recognized that the crib had limited use. 216-B-50 crib has a bottom area of 83.6 square meters (900 square feet), and its capacity had been adequate for the 5-6 gallons per minute flow of condensate. Now that the capacity of #1 ITS has been doubled (Project ICE-618), it is doubtful that the crib will have sufficient capacity without a significant rise in the level of water in the crib. This increase of water level could drive the condensate through the highly contaminated zone under the other seven cribs (216-B-43 through 49) that are located 15 to 76 meters (50 to 250 feet) from the

216-B-50 crib. Flow data obtained from the monitoring wells showed that condensate sent to the 216-B-50 crib tended to migrate under the highly contaminated cribs. To avoid potential flooding of 216-B-50, 216-B-61 crib was proposed. The #2 ITS Unit, also located in the 241-BY Tank Farm used crib 216-B-57, which was designed for receiving only the condensate flow from the #2 Unit. The 216-B-50 crib needed to be taken out of service because of its size limitations and because of the close proximity of the highly contaminated cribs (216-B-43 through 216-B-49) that had been used for scavenged TBP wastes. These seven cribs received over 400,000 curies of beta activity including about 13,000 and 4,000 curies of long lived strontium and cesium, respectively. The groundwater under these cribs still contains detectable concentrations of cesium-137 and cobalt-60 (April 1968).

Code:	216-B-57	Classification:	Accepted
Names:	216-B-57; 216-B-57 Enclosed Trench; Hanford Prototype Barrier; 200-BP-1 Prototype Barrier	Reclassification:	None
Type:	Crib	Start Date:	2/1/1968
Status:	Inactive	End Date:	6/1/1973
Description:	This crib was selected to be the site of the Hanford Prototype Barrier. The engineered barrier was constructed on top of the crib in 1994. The barrier is 105 meters (340 feet) long, 64 meters (210 feet) wide and 15 meters (49 feet) tall. It is posted Underground Radioactive Material.		
Location:	The unit is located west of Baltimore Avenue and south of 12th Street. It is northeast of 241-BY Tank Farm.		
Process Description:	During construction, the crib was filled to 1.2 meters (4 feet) above the bottom with gravel (approximately 474 cubic meters [620 cubic yards]). A perforated, 30.5-centimeter (12-inch) corrugated pipe runs the length of the crib, 0.9 meters (3 feet) above the bottom. The side slope of the original crib construction is 1.5:1.		
Related Sites/ Structures:	The crib is associated with the In Tank Solidification (ITS #2) and the 241-BY Tank Farm.		
Waste Type:	Storage Tank		
Waste Description:	The site received the waste storage tank condensate from the In Tank Solidification (ITS) #2 Unit in 241-BY Tank Farm.		

Code:	200-E-45	Classification:	Accepted
Names:	200-E-45; Contaminated Pump Run-in Caisson; Health Instrument Shaft; HI Shaft	Reclassification:	None
Type:	Silo	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1973
Description:	The site is a concrete shaft, 16.6 meters (55 feet) deep. It is constructed of prefabricated concrete sections, 2.4 meters (8 feet) in diameter and 1.9 meters (6 feet 2 inches) high. Steel pipes were installed laterally through holes in the side of the shaft at 3 meters (10 feet) and 6 meters (20 feet) from the surface toward the 216-B-8 Crib. The pipes were 15 centimeters (6 inches) in diameter, and 6.6 meters (22 feet) long. The site is topped with a large circular cover with a smaller manhole, a hatch and a vent pipe. The shaft lid is now covered with clean gravel, surrounded by light duty posts and chain and is posted as a an Underground Radioactive Material Area.		
Location:	The shaft is located north of 241-B Tank Farm and west of the of the 216-B-8 Crib.		

Process Description: Health Instrument Shaft was originally installed to allow Health Instrument technicians to descend a ladder and collect liquid and soil samples from a depth of approximately 3 meters (10 feet) and 6 meters (20 feet) below the bottom of the 216-B-8 Crib through openings in the shaft. Perforated lateral pipes extending beneath the crib allowed liquid waste from the crib to enter the pipes and collect in sample cups. Other holes were made in the side of the shaft facing the crib to collect sediment samples. Samples were collected for several years and ended on December 31, 1949. The shaft structure was later filled with water and used to test contaminated tank farm pumps. The last known pump test was done in 1973. In 1949, radiological readings up to 4 rad/hour were recorded at the bottom of the shaft. As of December 1949, 105 liquid samples, 4 sludge samples and 7 sediment samples had been collected and analyzed to characterize the operation of the 216-B-8 Crib. Liquid samples collected at the 3 meter (10 foot) level and the 6 meter (20 foot) level both contained an average of 0.5 microcuries per liter. In August 1948, sludge from the 104-B tank was inadvertently jetted to the 216-B-8 Crib. A sudden decrease in the crib capacity led to the discovery of approximately 37.5 centimeters (15 inches) of sludge in the crib. Some sludge washed to at least 6.1 meters (20 feet) below the crib bottom and was collected in the HI Shaft sample cups. The plutonium activity in the sludge samples was 900 microcuries per kilogram of sludge. This is 1000 times higher than the plutonium content of the supernate liquid usually discharged to cribs. The fission product activity in the sludge samples was 9,000 microcuries per kilogram of sludge. This is roughly 5,000 times greater than the fission product activity in supernate liquid. Liquid sample collected in the HI Shaft prior to the sludge discharge contained less than 1000 disintegrations per minute per liter of alpha contamination. Liquid samples collected after the sludge release contained an average of 17,500 disintegrations per minute per liter of alpha contamination. Sediment samples collected from approximately 5.5 meters (18 feet) below the crib through the HI Shaft prior to the sludge release contained beta-gamma activity of 0.13 microcuries per kilogram. After the sludge release the activity increased to 0.33 microcuries per kilogram. No alpha contamination was found in the sediment samples.

Related Sites/ Structures: The HI Shaft is associated with the 216-B-8 Crib.

Waste Type: Process Effluent

Waste Description: The shaft was used to obtain samples from the 216-B-8 Crib. The bottom of the shaft occasionally collected a significant amount of crib seepage that was pumped out of the shaft and back to the crib. Later the shaft was intermittently filled with water and used as a contaminated pump testing pit.

Code: 216-S-9	Classification: Accepted
Names: 216-S-9; 216-S-9 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1965
Status: Inactive	End Date: 1/1/1969

Description: The unit is a gravel structure with a side slope of 1:1.5. Waste flowed into the unit through the distribution system, which consists of 177 meters (581 feet) of 15-centimeter (6-inch) Vitrified Clay Tile (VCT) perforated pipe in a U-shape, 4.6 meters (15 feet) by 89.9 meters (295 feet), and connected by 7.3 meters (24 feet) of 4.6-centimeter (3-inch) Schedule 10 pipe in a Y-shape. The entire distribution system is 6.4 meters (21 feet) below grade.

Location: The crib is located east of 241-S,SX,SY Tank Farms.

Process Description: The following are related to the unit: two 20-centimeter (8-inch) diameter, 8.5-meter (28-foot) long V.C.T. gage wells, with the bottom 0.9 meters (3 feet) perforated; two 0.6-meter (2-foot) by 0.6-meter (2-foot) by 0.3-meter (1-foot) concrete pads for gage wells; one 30-centimeter (12-inch) diameter, 7.3-meter (24-foot) long, V.C.T. vent with filter; one 0.6-meter (2-foot) by 0.6-

meter (2-foot) by 1.2-meter (4-foot) concrete pad for the vent; approximately 1,767 cubic meters (62,400 cubic feet) of gravel fill and 960.3 square meters (10,336 square feet) of plastic barrier; 12,690 cubic meters (448,000 cubic feet) of gravel backfill.

Related Sites/ Structures: The crib is associated with the 216-S-7 crib, 216-S-23 crib and the 200-W-138-PL and 200-W-139-PL pipelines.

Waste Type: Process Effluent

Waste Description: The site received process condensate from the D-2 Receiver Tank in the 202-S Building. The waste is acidic.

Code: 216-S-13	Classification: Accepted
Names: 216-S-13; 216-S-6; 276-S Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1972

Description: The crib is surrounded with steel posts and chain. It is posted with Underground Radioactive Material and Cave-In Potential signs. The unit is a square wooden crib box, with open bottom enclosed on four sides with sheathing. The crib box sits in a partially backfilled hole. The unit was then backfilled to grade. The crib box has a riser vent, and one inlet pipe near the top of the box.

Location: The crib is located northwest of the 202-S Building and south of the 216-S-7 crib.

Process Description: From January 1952 to June 1967 the unit received liquid waste from the 203-S Decontaminated Metal Storage Facility, the 204-S Uranium Nitrate Hexahydrate Lag Storage Facility and the 276-S Organic-Solvent Make-up Facility. From June 1967 to July 1972 the unit received occasional sump waste from the 204-S Facility.

Related Sites/ Structures: The site is associated with the 203-S Decontaminated Storage Facility, 204-S Uranium Nitrate Hexahydrate Lag Storage Facility, and the 276-S Organic-Solvent Make-up Facility. The pipelines associated with 216-S-13 crib are discussed in sitecode 200-W-150-PL.

Waste Type: Process Effluent

Waste Description: The site received mixed, organic waste containing nitrate, methyl isobutyl ketone, and sodium dichromate. Radionuclides include cobalt-60, strontium-90 and cesium-137. The waste was low in salt and is neutral to basic. A 1966 internal memo suggests that 25,000 gallons of hexone from the 276-S tanks 141 and 142 were discharged to the 216-S-13 crib over a three month time period.

Code: 216-S-21	Classification: Accepted
Names: 216-S-21; 216-SX-1; 216-SX-1 Cavern or Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1970

Description: The site was interim stabilized in 1991 and is posted "Underground Radioactive Material." The site consists of one wooden crib box with two vent risers and one test well going through the center of the box. This crib box sits in a gravel layer in the bottom of a square pit. The rest of the pit is backfilled.

Location: This site is west of the 241-S Tank Farm and north of 216-S-25.

Process This site provided subsurface liquid disposal for the 241-SX-401 Condenser Facility.

Description:

Related Sites/ Structures: The crib is associated with the 241-SX-401 Condenser Facility. The pipeline associated with this crib is sitecode 200-W-160-PL.

Waste Type: Process Effluent

Waste Description: The site received 241-SX condensate from the condensers in the 401-SX Condenser Facility via the 241-SX-206 Tank. The waste is low in salt and is neutral to basic. The waste contained sodium and ammonium nitrate.

Code: 216-T-3 **Classification:** Accepted

Names: 216-T-3; 241-T-361-A Reverse Well; 361-T Reverse Well **Reclassification:** None

Type: Injection/Reverse Well **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1946

Description: The 216-T-3 identified with concrete AC-540 markers and Underground Radioactive Material signs. The reverse well is constructed of steel pipe extending deep into the ground. There are two wells inside the posted area. The one on the north side of the posted area has a cap with the remnants of a gauge. The one near the southwest side of the area has a plain well cap.

Location: This site is located northwest of the 241-T-361 Settling Tank and northeast of the 216-T-6 Crib.

Process Description: This reverse well received liquid disposal from the 221-T and the 224-T facilities via the 241-T-361 Settling Tank. Discharge to the reverse well was discontinued in 1946 and the effluent was routed to the 216-T-6 crib. Some 224-T waste was diverted to the 241-T-252 Diversion box (per H-2-951).

Related Sites/ Structures: The associated structures are the 221-T Building and the 241-T-361 Settling Tank. The pipeline from 224-T that fed the reverse well is sitecode 200-W-226-PL.

Waste Type: Process Effluent

Waste Description: The reverse well received 221-T and 224-T liquid waste via the 241-T-361 settling tank. The waste included cell drainage from tank 5-6 in 221-T and 224-T waste. The chemical inventory includes nitrate, potassium, sodium, ammonium nitrate, sodium oxalate, fluoride, sulfate and phosphate. The radionuclide inventory includes 3350 grams of plutonium and 2800 curies of fission products.

Code: 216-T-5 **Classification:** Accepted

Names: 216-T-5; 216-T-5 Grave; 216-T-5 Trench; 241-T-5 Trench; 216-T-12 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The 216-T-5 trench is marked and posted with Underground Radioactive Material signs.

Location: This site is located west of the 241-T Tank Farm and northwest of the 216-T-32 Crib.

Process Description: This trench received 221-T second cycle supernatant that had been stored in the 241-T-112 tank via an overground pipeline. The trench was active in May 1955. Due to the lack of waste storage space in the tank farms, second cycle waste from the bismuth phosphate fuel separation operations, which had been stored in the tank farms, began to be released to cribs and specific retention trenches in 1948. The extracted plutonium went through two decontamination cycles

to further purify it. The first cycle waste was combined with the coating waste. It contained 10% of the fission products and 1% of plutonium. The second decontamination cycle waste contained less than 0.1% of the fission products.

Related Sites/ Structures: The trench is associated with the 221-T Building and the 241-T Tank Farm.

Waste Type: Process Effluent

Waste Description: The site received second cycle supernate waste that contained nitrate, sodium silicate, sodium, ammonium nitrate, fluoride, sulfate, and phosphate. Second cycle waste contained less than 0.1% fission products.

Code: 216-T-6 **Classification:** Accepted

Names: 216-T-6; 241-T-361 (1&2 Cribs); 361-T-1&2 Cribs; 216-T-5 **Reclassification:** None

Type: Crib **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1951

Description: The 216-T-6 Cribs are delineated with light post and chain and Cave-in Potential signs. The area is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.

Location: The 216-T-6 Cribs are located north of 23rd Street, southwest of the 221-T Building. They are adjacent to the 216-T-3 Reverse Well and the 241-T-361 Tank.

Process Description: The cribs received liquid waste from the 221-T and 224-T Facilities via the 241-T-361 Settling Tank. The cribs were built to replace the 216-T-3 Reverse Well when it was abandoned in August 1946. From August 1946 to October 1946, the cribs received cell drainage from Tank 5-6 in the 221-T Building and waste from the 224-T Building via the overflow from 241-T-361 Settling Tank. From October 1946 to June 1951, the site received cell drainage from Tank 5-6 in the 221-T Building. In June 1951, the 241-T-361 Settling Tank was deactivated, and the 224-T Building effluent was rerouted to 216-T-32 Crib. In June 1951 the site was deactivated to evaluate the radionuclide disposal characteristics of the crib. The crib pipeline was blanked south of the 241-T-361 Settling Tank. The 221-T waste was rerouted to the 216-T-7 Crib.

Related Sites/ Structures: The associated structures are the 221-T and 224-T Facilities and the 241-T-361 Tank. The pipeline that fed the cribs is sitecode 200-W-227-PL.

Waste Type: Process Effluent

Waste Description: The cribs received waste from 221-T and 224-T that was low in salt, neutral to basic and contained nitrate, sodium, ammonium nitrate, sodium oxalate, fluoride, sulfate, and phosphate.

Code: 216-T-7 **Classification:** Accepted

Names: 216-T-7; 216-T-7 Tile Field; 216-T-7TF; 241-T-3 Tile Field **Reclassification:** None

Type: Drain/Tile Field **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1955

Description: The 216-T-7 Tile Field is delineated with concrete AC-540 markers and posted with Underground Radioactive Material signs.

Location: The 216-T-7 Tile Field is located adjacent to the west side of the 241-T Farm fence and north of 23rd Street. A portion of the tile field extends inside the tank farm fence.

Process Description: The 216-T-7 crib (site code 200-W-52) received second cycle supernate from 221-T, 224-T waste and tank 5-6 waste after it cascaded through the 241-T-110, 241-T-111 and 241-T-112 tanks. The 216-T-7 Tile Field received overflow from the crib.

Related Sites/Structures: The 216-T-7 Tile Field is associated with the 216-T-7 Crib (site code 200-W-52), the 241-T-112, and the 221-T and 224-T facilities.

Waste Type: Process Effluent

Waste Description: The site received second-cycle supernatant waste from the 221-T Building until June 1951 via the 241-T-110, 241-T-111 and 241-T-112 tanks. From June 1951 to June 1952, the site received the 221-T Building effluent plus cell drainage from Tank 5-6 in the 221-T Building. From June 1952 to November 1955, the site received the 221-T Building effluent plus waste from the 224-T Building. The waste is high in salt and is neutral to basic and contains nitrate, potassium, sodium, ammonium nitrate, sodium oxalate, fluoride, sulfate, and phosphate.

Code: 216-T-14 **Classification:** Accepted

Names: 216-T-14; 241-T-1 Trench; 216-T-1 Grave; 216-T-13 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The 216-T-14, 216-T-15, 216-T-16 and 216-T-17 trenches were surface stabilized as a unit. The area is identified with concrete AC-540 markers and are posted with Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of 23rd Street and northeast of the 241-T Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste, that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches.

Related Sites/Structures: The trench is associated with 221-T, the 241-T Tank Farm and UPR-200-W-166.

Waste Type: Process Effluent

Waste Description: The site received the first-cycle supernatant waste from the 221-T Building via the 241-T-104,

Description: 241-T-105 and 241-T-106 Tanks in the 241-T Tank Farm. The waste is high in salt and is neutral to basic.

Code: 216-T-15 **Classification:** Accepted

Names: 216-T-15; 216-T-15 Crib; 241-T-2 Grave; 241-T-2 Trench; 216-T-14 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The 216-T-14, 216-T-15, 216-T-16 and 216-T-17 trenches were surface stabilized as a unit. The area is identified with concrete AC-540 markers and are posted with Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of 23rd Street and northeast of the 241-T Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste, that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches.

Related Sites/ Structures: The trench is associated with 221-T, the 241-T Tank Farm and UPR-200-W-166.

Waste Type: Process Effluent

Waste Description: The site received the first-cycle supernatant waste from the 221-T Building via the 241-T-104, 241-T-105 and 241-T-106 Tanks in the 241-T Tank Farm. The waste is high in salt and is neutral to basic.

Code: 216-T-16 **Classification:** Accepted

Names: 216-T-16; 216-T-16 Crib; 241-T-3 Grave; 241-T-3 Trench; 216-T-15 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The 216-T-14, 216-T-15, 216-T-16 and 216-T-17 trenches were surface stabilized as a unit. The area is identified with concrete AC-540 markers and are posted with Underground

Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of 23rd Street and northeast of the 241-T Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste, that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches.

Related Sites/ Structures: The trench is associated with 221-T, the 241-T Tank Farm and UPR-200-W-166.

Waste Type: Process Effluent

Waste Description: The site received the first-cycle supernatant waste from the 221-T Building via the 241-T-104, 241-T-105 and 241-T-106 Tanks in the 241-T Tank Farm. The waste is high in salt and is neutral to basic.

Code: 216-T-17 **Classification:** Accepted

Names: 216-T-17; 216-T-4 Grave; 241-T-4 Trench; 216-T-16 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The 216-T-14, 216-T-15, 216-T-16 and 216-T-17 trenches were surface stabilized as a unit. The area is identified with concrete AC-540 markers and are posted with Underground Radioactive Material signs. The surface has been planted with wheat grass.

Location: The trench is located north of 23rd Street and northeast of the 241-T Tank Farm.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. B Plant and T Plant used the bismuth phosphate process to separate plutonium from irradiated fuel from 1944 through 1956. The first step in the process was to dissolve the metal coating from the fuel rods. The next step dissolved the uranium and extracted the plutonium. The uranium waste was known

as the metal waste stream. It contained the bulk of the uranium and 90% of the cesium-137 and strontium-90. The plutonium stream went through two additional decontamination cycles to purify it, producing the first and second cycle waste streams. The first cycle waste stream contained approximately 10% of the long lived fission products and 1% of the plutonium. The coating waste was combined with the first cycle waste. The liquid waste from these processes was initially stored in the single shell tanks in tank farms. By 1948, limited space in the tank farms resulted in the decision to discharge the second cycle waste to cribs. In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste, that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches.

Related Sites/ Structures: The trench is associated with 221-T, the 241-T Tank Farm and UPR-200-W-166.

Waste Type: Process Effluent

Waste Description: The site received the first-cycle supernatant waste from the 221-T Building via the 241-T-104, 241-T-105 and 241-T-106 Tanks in the 241-T Tank Farm. The waste is high in salt and is neutral to basic.

Code: 216-T-18 **Classification:** Accepted

Names: 216-T-18; 241-T-17 Crib; Scavenged TBP Waste; Test Crib for 221-U Building; 216-T-17 **Reclassification:** None

Type: Crib **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1953

Description: The site is marked with concrete AC-540 markers. The site is posted as an "Underground Radioactive Material" area. The surface is covered with gravel.

Location: This site is located northeast of 241-TY Farm and north of the 216-T-26 Crib.

Process Description: Although many references state the crib received scavenged tri-butyl phosphate waste from 221-T (T Plant), it is believed that the reference to T Plant was a typographical error that was carried into subsequent documentation. It should have said 241-T Tank Farm. Document WHC-MR-0227, Tank Wastes Discharged Directly to the Soil at Hanford states that the ferrocyanide (TBP) scavenging process was tested in U Plant in October 1953. HW-33591 states the scavenged waste was pumped from the 241-T-101 tank to a hole in the ground located north of the 241-T-17 monitoring well. Ferrocyanide and nickel were added to the uranium recovery waste to remove cesium-137 from the waste stream so it could be discharged to the ground instead of requiring tank storage. The treated test waste was pumped to a single shell tank for settling (241-T-101) in October 1953. Because of poor pH control during the test, only half of the resultant scavenged waste was discharged to the 216-T-18 crib in December 1953. The other half remained stored in the single shell tank.

Related Sites/ Structures: The site is associated with the uranium recovery process done at 221-U.

Waste Type: Process Effluent

Waste Description: There is a discrepancy in the historical documentation of the waste disposed to this crib. Some references state the site received a test batch of ferrocyanide scavenged tri-butyl phosphate waste from 221-U in December 1953. The waste was high in salt, neutral to basic, and contained nitrate, sodium silicate, sodium, sodium hydroxide, sodium aluminate, fluoride, sulfate, phosphate and nitrite. HW-33591 states that 256,000 gallons of waste was pumped from

tank 241-T-101 to a hole in the ground located north of the 241-T-17 monitoring well. Maxfield (1979) states the crib received a million liters of first cycle waste from 221-T that included 1800 grams of plutonium.

Code:	216-T-19	Classification:	Accepted
Names:	216-T-19; 216-T-19TF; 216-TX-1; 241-TX-153 Crib and Tile Field; 241-TX-3	Reclassification:	None
Type:	Crib	Start Date:	1/1/1951
Status:	Inactive	End Date:	1/1/1980
Description:	The crib and tile field are enclosed within a chain barricade. The crib is enclosed within a second chain barricade that is posted with Cave-In Potential signs. The outer chain is posted with "Underground Radioactive Material" signs. The site construction is wooden crib box with a riser, set into a square bottom pit with sloping sides. The crib has an inlet and outlet pipe. The outlet pipe connects to a tile field. The tile field consists of a central pipe running the length of a rectangular trench with sloping sides. Pipes branch off the main pipe over the length of the trench. After construction, the crib and tile field were backfilled to grade.		
Location:	This site is located southwest of the 241-TX Tank Farm and east of the 216-Z-7 Crib.		
Process Description:	The site provided subsurface liquid disposal for process condensate from the waste evaporator in 242-T, cell drainage from Tank 5-6, second-cycle supernatant waste from 221-T, and waste from the 224-T Building.		
Related Sites/ Structures:	The crib and tile field are associated with the 242-T Building, 221-T Building, the 224-T Building and the 241-TX-153 Diversion Box. The pipeline to the crib is 200-W-213-PL.		
Waste Type:	Process Effluent		
Waste Description:	The site received waste containing nitrate, sodium, ammonium nitrate, sulfate, and phosphate.		

Code:	216-T-21	Classification:	Accepted
Names:	216-T-21; 216-TX-1 Grave; 216-TX-3; 241-TX-1 Trench	Reclassification:	None
Type:	Trench	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1954
Description:	This site consists of a backfilled trench. It is one of five specific retention trenches (216-T-21, 216-T-22, 216-T-23, 216-T-24 and 216-T-25) that was surface stabilized as one unit. The group of trenches is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.		
Location:	This site is located west of the 241-TX Tank Farm and north of the 231-Z Building.		
Process Description:	In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. This trench provided subsurface liquid disposal for first-cycle supernatant waste from 221-T via the 241-TX-109, 241-TX-110, and 241-TX-111 Tanks. The site was deactivated when the specific retention capacity was reached. The overground piping was removed and the trench backfilled. The		

trench was active from June through August 1954.

Related Sites/ Structures: The trench is associated with the 221-T Building and the 241-TX Tank Farm.

Waste Type: Process Effluent

Waste Description: The trench received first cycle supernate from 221-T that was high in salt, neutral to basic, and contained fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate, and sulfate.

Code: 216-T-22 **Classification:** Accepted

Names: 216-T-22; 216-TX-2 Grave; 216-TX-4; 241-TX-2 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. It is one of five specific retention trenches (216-T-21, 216-T-22, 216-T-23, 216-T-24 and 216-T-25) that was surface stabilized as one unit. The group of trenches is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.

Location: The site is located west of the 241-TX Tank Farm and north of the 231-Z Building.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. This site was used for subsurface liquid disposal of first-cycle supernatant waste from 221-T via the 241-TX-109, 241-TX-110, and 241-TX-111 Tanks. The trench was active in July and August 1954. The trench was deactivated when the specific retention capacity was reached by removing the overground piping and backfilling the trench.

Related Sites/ Structures: The trench is associated with the 221-T Building and the 241-TX Tank Farm.

Waste Type: Process Effluent

Waste Description: The trench received first cycle supernate from 221-T that was high in salt, neutral to basic, and contained fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate, and sulfate.

Code: 216-T-23 **Classification:** Accepted

Names: 216-T-23; 216-TX-3 Grave; 216-TX-5; 241-TX-3 Grave; 241-TX-3 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. It is one of five specific retention trenches (216-T-21, 216-T-22, 216-T-23, 216-T-24 and 216-T-25) that was surface stabilized as one unit. The group of trenches is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.

Location: This site is located west of the 241-TX Tank Farm and north of the 231-Z Building.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. This site was used for subsurface liquid disposal of first cycle supernatant waste from 221-T via the 241-TX-109, 241-TX-110, and 241-TX-111 Tanks. The trench was active during July and August 1954. The trench was deactivated when the specific retention capacity was reached by removing the overground piping and backfilling the trench.

Related Sites/ Structures: The trench is associated with the 221-T Building and the 241-TX Tank Farm.

Waste Type: Process Effluent

Waste Description: The trench received first cycle supernate from 221-T that was high in salt, neutral to basic, and contained fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate, and sulfate.

Code: 216-T-24

Classification: Accepted

Names: 216-T-24; 216-TX-4 Grave; 216-TX-6; 241-TX-4 Trench

Reclassification: None

Type: Trench

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1954

Description: This site consists of a backfilled trench. It is one of five specific retention trenches (216-T-21, 216-T-22, 216-T-23, 216-T-24 and 216-T-25) that was surface stabilized as one unit. The group of trenches is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.

Location: The site is located west of the 241-TX Tank Farm and north of the 241-Z Building.

Process Description: In order to provide the tank space needed to support the fuel separations operations in 200 East and West Areas, first cycle supernate stored in the single shell tanks was intentionally discharged to specific retention trenches during 1953 and 1954. Specific retention disposal utilized the moisture retention capacity of the relatively dry soils above the regional ground water table. The volume of liquid disposed to each trench was limited to ten percent of the soil volume between the bottom of the trench and the groundwater table. This site was used for subsurface liquid disposal of first-cycle supernatant waste from 221-T via the 241-TX-109, 241-TX-110, and 241-TX-111 Tanks. The trench was active in August 1954. The trench was deactivated when the specific retention capacity was reached by removing the overground piping and backfilling the trench.

Related Sites/ Structures: The trench is associated with the 221-T Building and the 241-TX Tank Farm.

Waste Type: Process Effluent

Waste Description: The trench received first cycle supernate that was high in salt, neutral to basic, and contained fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate, and sulfate.

Code: 216-T-25 **Classification:** Accepted

Names: 216-T-25; 216-TX-5 Grave; 216-TX-7; 241-TX-5 Trench **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. It is one of five specific retention trenches (216-T-21, 216-T-22, 216-T-23, 216-T-24 and 216-T-25) that was surface stabilized as one unit. The group of trenches is surrounded with concrete AC-540 markers and Underground Radioactive Material signs.

Location: This site is located west of the 241-TX Tank Farm and north of the 241-Z Building.

Process Description: In 1951, the 242-B and 242-T Evaporators began to concentrate the first cycle waste to reduce the volume of waste stored in the tank farms. By 1953, the need for tank space resulted in the first cycle waste, that was being stored in the single shell tanks, to be discharged via overground pipelines to specific retention trenches. Some specific retention trenches received the waste from the bottoms of the 242-B and 242-T Evaporator tank. This trench was used for subsurface liquid disposal of evaporator bottoms consisting of sludge from 242-T condensed first-cycle waste. The site was active in September 1954. The trench was deactivated when the specific activity capacity was reached by removing the aboveground piping and backfilling the trench.

Related Sites/ Structures: The is is associated with the 242-T Evaporator.

Waste Type: Process Effluent

Waste Description: The trench received evaporator bottom waste consisting of sludge from condensing first cycle waste in the 242-T Evaporator. It was high in salt, neutral to basic, and contained fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate, and sulfate.

Code: 216-T-26 **Classification:** Accepted

Names: 216-T-26; 216-TX-1 Crib; 216-TY-1 Cavern; 216-TY-1 Crib; 241-TX-1 Cavern **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1956

Description: The 216-T-26, 216-T-27 and 216-T-28 cribs are enclosed within a common steel post and chain barricade that is posted "Underground Radioactive Material". The 216-TY-201 flush tank is located in the northeast corner of the area. Two small concrete pads are located east of the crib area.

Location: This site is located inside 200 West Area, south of 23rd Street and east of Camden Ave.

Process Description: The site provided subsurface liquid disposal for first-cycle scavenged supernatant waste from 221-T via an underground pipeline and the 216-TY-201 Flush Tank after cascading through the 241-TY-101, 241-TY-103, and 241-TY-104 tanks and later from 241-T-112 tank. In 1955, in order to provide enough tank space in the tank farms required to continue to support fuel separation operations and plutonium production, T Plant began to scavenge newly generated first cycle waste before sending it to the tank farms. By adding ferrocyanide to the waste stream, the cesium-137 was precipitated, significantly reducing the quantity of long-lived radionuclides. This process allowed the first cycle waste to be discharged to the ground instead of to single shell tanks. The unit consists of a steel inlet pipe reducing to a steel pipe, below grade. This pipe branches to four steel pipes, each one extending to a concrete open-end sewer

pipe. These structures lie in an excavation with a side slope of 1:1.5. A gravel fill is covered by earth backfill.

Related Sites/ Structures: The associated structures are the 221-T Building, the 241-TY-101, 241-TY-103, and 241-TY-104 tanks and 241-T-112, the 216-TY-201 flush tank. The pipelines associated with this crib are 200-W-175-PL and 200-W-188-PL.

Waste Type: Process Effluent

Waste Description: The site received first-cycle scavenged supernatant waste from T Plant containing ferrocyanide, fluoride, nitrate, nitrite, phosphate, sodium, sodium aluminate, sodium hydroxide, sodium silicate and sulfate.

Code: 216-T-32 **Classification:** Accepted

Names: 216-T-32; 216-T-6; 241-T #1 & 2 Cribs **Reclassification:** None

Type: Crib **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1952

Description: The crib is located inside the 241-T Tank Farm fence. The fence is posted with Radiological Buffer Area/Underground Radioactive Material signs. The tank farm has a gravel surface. The crib is not separately identified.

Location: This site is located on the west side of the 241-T Farm and north of 216-T-7 Crib. The fence on the west side of the 241-T Tank Farm transects the northwest corner of the crib. Most of the crib is located inside the tank farm fence.

Process Description: The 216-T-32 Crib consists of two wooden crib boxes, each set into a square bottom pit with sloping sides. The pits contain backfill. The crib boxes are connected in series by a pipe, with one crib overflowing into the other. The cribs received liquid waste from the 224-T Building via the 241-T-201 Tank. Each box was constructed with a riser vent.

Related Sites/ Structures: The crib is associated with the 241-T-201 tank, the 241-T-152 and 241-T-252 Diversion Boxes and the 224-T facility.

Waste Type: Process Effluent

Waste Description: The site received waste from 224-T via the 241-T-201 Tank. The waste was high in salt, neutral to basic, and contained nitrate, sodium, ammonium nitrate, sodium oxalate, fluoride, sulfate, and phosphate.

200-EA-1

Code: 207-A-NORTH **Classification:** Accepted

Names: 207-A-NORTH; 207-A-NORTH Retention Basin; 207-A; 207-A North; 207-A Retention Basin **Reclassification:** None

Type: Retention Basin **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1999

Description: The 207-A North basins consist of three Hypalon lined, concrete basins. The basins are surrounded with posts and chain. There is no radiological posting on the north basins.

Location: The 207-A-NORTH basins are located east of 242-A Evaporator building, adjacent to the 207-A-SOUTH basin.

Process Description: The basins were alternately filled, sampled, and emptied when meeting specifications. The basins discharged via pipeline to the 216-B-3C pond. Discharge to the 216-B-3C pond was discontinued in early 1997 and the basin effluent was diverted to the 200 Area Treated Effluent Disposal Facility (TEDF). The basin was physically isolated in 1999. The isolation is documented in ECN-653675 and Work Package EL-98-00091.

A 4-in (10 cm) fill line enters each basin, approximately 2 ft (0.6 m) long (inside basin structure) and a 3-in (7.6 cm) drain line exits.

Related Sites/Structures: The basins are associated with the 242-A Evaporator facility, 216-A-25 Pond and 216-B-3 Pond. The pipelines from 242-A Evaporator to the 207-A basins are sitecode 200-E-234-PL. The basin distribution lines are sitecode 200-E-235-PL.

Waste Type: Steam Condensate

Waste Description: The basins have been receiving steam condensate from the 242-A Evaporator since 1977. Effluent was originally sent to the 216-A-25 (Gable Pond) and later to the B Pond system. When the B-Ponds became inactive, effluent was diverted to TEDF.

The Following Sites Were Consolidated With This Site:

Code: 200-E-235-PL

Names: 200-E-235-PL; 207-A North Basin Distribution Lines; Lines 501,502, 503, 504, 506, and 507

Code: 216-A-1 **Classification:** Accepted

Names: 216-A-1; 216-A-1 Cavern; 216-A-1 Trench **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The 216-A-1 and 216-A-7 cribs are located within the same radiologically posted area. They are marked and posted with Underground Radioactive Material signs.

Location: The site is located inside the 200 East Area perimeter fence extension, east of the 241-A Tank Farm, along Canton Avenue.

Process Description: The site received start up waste from PUREX during November and December 1955 via an overground pipeline. When the specific retention capacity was reached, the site was deactivated by removing the overground piping and backfilling. The site is composed of 15-centimeter (6-inch) perforated Vitriified Clay Pipe (VCP), 9.1 meters (30 feet) long, running horizontally at 2.7 meters (9 feet) below grade, with two 9.1 meter (30-foot) lengths of 15-

centimeter (6-inch) perforated VCP placed perpendicularly to the first length of pipe, forming an H pattern. There is approximately 1.8 meters (6 feet) or 310 cubic meters (11,000 cubic feet) of coarse rock in the excavation bottom. The side slope, surface to 2.1 meters (7 feet) deep, is 1:1.5, 2.1 meters (7 feet) to site bottom is 1:2.

Related Sites/ Structures: The site is associated with the 202-A sample pit #3 and the 200-E-158-PL pipeline.

Waste Type: Process Effluent

Waste: The site received the depleted uranium waste from the cold startup run in the 202-A Building.

Description: Some cesium-137, cobalt-60 and strontium-90 is also present.

Code: 216-A-2

Classification: Accepted

Names: 216-A-2; 216-A-2 Cavern; 216-A-2 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1963

Description: The crib is covered with gravel and marked with concrete AC-540 posts. The crib is located within a larger URM, known as 200-E-103. The unit consists of 15-centimeter (6-inch) perforated vitrified clay pipe lines. Two 6.1-meter (20-foot) lengths form a cross pattern horizontally, 6.4 meters (21 feet) below grade. It has approximately 1.8 meters (6 feet) of coarse rock with a volume of 140 cubic meters (5,000 cubic feet) and is backfilled over. The side slope from grade to 6.4 meters (21 feet) is 1:1.5 and from 6.4 meters (21 feet) to 8.2 meters (27 feet) is 1:2.

Location: The 216-A-2 site is located south of the 202-A Building (PUREX), inside the facility exclusion area fence .

Process Description: The site received organic waste from the 202-A building via two 10 centimeter (4 inch) diameter) vitrified clay pipes (see sitecode 200-E-184-PL).

Related Sites/ Structures: The site is associated with the 202-A Building, the 241-A-151 Diversion Box and 200-E-103.

The pipelines associated with the crib are sitecode 200-E-183-PL and 200-E-184-PL.

Waste Type: Process Effluent

Waste: The site received organic wastes from the 202-A Building. The waste is low in salt and is

Description: neutral to basic.

Code: 216-A-3

Classification: Accepted

Names: 216-A-3; 216-A-3 Cavern; 216-A-3 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1956

Status: Inactive

End Date: 4/1/1981

Description: The crib is marked and posted with Underground Radioactive Material signs.

Location: The unit is located directly south of the 275-EA Building, west of Canton Avenue and north of the 202-A Building.

Process Description: From 1956 to 1967, the site received silica-gel regeneration waste and pump house drainage from 203-A and drainage from the UNH storage pit. The silica gel discharge was discontinued in 1967. The site was taken out of service in April 1981. The waste was rerouted so that any low level radioactive waste was sent to the 216-A-29 Ditch. The unit contains a 10-

centimeter (4-inch) Schedule 10 perforated 304 stainless steel pipe placed horizontally 2.4 meters (8 feet) below grade and two 6.1-meter (20-foot) lengths of this pipe placed perpendicularly to the first pipe, forming an H pattern. The site has approximately 2.4 meters (8 feet) of gravel fill with a volume of 280 cubic meters (10,000 cubic feet) and has been backfilled. The side slope surface to 2.1 meters (7 feet) deep is 1.5:1 and from 2.1 meters (7 feet) to the site bottom is 2:1.

Related Sites/ Structures: The crib is associated with 203-A. The 216-A-3 pipeline is sitecode 200-E-168-PL.

Waste Type: Process Effluent

Waste Description: Until November 1967, the site received wastes from the silica-gel regeneration in the 203-A Building, the uranyl nitrate hexahydrate (UNH) storage pit drainage, and the liquid waste from the 203-A Pump House. After November 1967, the site received UNH Storage Pit drainage, liquid drainage, liquid waste from the 203-A Building enclosure sumps, and the heating coil condensate from the P1 through P4 UNH tanks. Between 1967 and 1970, the site discontinued receiving discharge from silica-gel regeneration wastes. The above wastes are reworked through the uranium cycle and any resulting waste with low radioactivity are sent to 216-A-29. The waste included uranium, cesium-137, strontium-90 and ruthenium-106.

Code: 216-A-4

Classification: Accepted

Names: 216-A-4; 216-A-4 Cavern

Reclassification: None

Type: Crib

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1958

Description: The site is located within a large gravel area, known as the PUREX Stabilized Area (sitecode 200-E-103). A large green vent riser extends above the surface.

Location: The site is located south of the 202-A Building and east of 216-A-2, inside the PUREX Exclusion Fence.

Release Description: UPR-200-E-15 documents the event that occurred in 1958, when the 216-A-4 Crib plugged and caused contaminated liquid to flood the ground surface. The contaminated soil was placed into a trench near the south border of the crib (see sitecode 200-E-102) and covered with 0.3 meters (1 foot) of soil.

Process Description: The crib received laboratory cell drainage from the 202-A building, and possibly drainage from the 291-A stack. The unit consists of two 6.1-meter (20-foot) lengths of 15-centimeter (6-inch) perforated vitrified clay pipe, forming a cross pattern horizontally, 5.5 meters (18 feet) below grade. The excavation has 2.4 meters (8 feet) of coarse rock fill with a volume of 280 cubic meters (10,000 cubic feet) and has been backfilled. The side slope from the surface to 5.5 meters (18 feet) deep is 1:1.5 and from 5.5 meters (18 feet) to the site bottom, 1:2

Related Sites/ Structures: The 216-A-4 crib is associated with 216-A-2 Crib, 241-A-151, the PUREX laboratories, UPR-200-E-15 and 200-E-103. The site has also been identified as receiving drainage from the 291-A Stack (see Site Comment section). The pipelines associated with this site are 200-E-183-PL, 200-E-185-PL and 200-E-196-PL.

Waste Type: Process Effluent

Waste Description: The site received the laboratory cell drainage from the 202-A Building (the site was reported to have also received 291-A-1 Stack drainage, see the Site Comments section under the Summary tab). The waste is low in salt and is neutral to basic. The 216-A-4 Crib also received waste solution from the 216-A-2 waste collection tank, the U Cell U-3 and U-4 laboratory waste

receiver tanks (located in the acid storage vault), the dissolver off-gas scrubbers and the 241-A-151 Diversion Box Catch Tank. 216-A-4 was intended to receive a maximum of (75 gallons per minute) low level radioactive liquid waste. Waste volume from the laboratory waste and cell drain was 52,990 liters (14,000 gallons).

Code: 216-A-5 **Classification:** Accepted
Names: 216-A-5; 216-A-5 Cavern **Reclassification:** None
Type: Crib **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1966

Description: The crib is marked and posted with Underground Radioactive Material signs.

Location: The crib is located south of the 202-A Building between the inner and outer PUREX exclusion area fences.

Process Description: The crib received acidic process condensate from 202-A from December 1955 through November 1961. After 1961, the crib was used as a back up waste site for the 216-A-10 crib. It received additional waste in October 1966. The unit consists of a 20-centimeter (8-inch) vitrified clay pipe (VCP) placed horizontally, 7.3 meters (24 feet) below grade and two 10.7-meter (35-foot) lengths of 20-centimeter (8-inch) VCP placed perpendicular to the first pipe, forming an H pattern. The site is backfilled with approximately 2.4 meters (8 feet) of coarse rock fill with a volume of 595 cubic meters (21,000 cubic feet). The side slope from the surface to 7.3 meters (24 feet) deep is 1:1.5 and from 7.3 meters (24 feet) to the bottom, 2:1.

Related Sites/Structures: The site is associated with the PUREX process, 200-E-58 and the 216-A-10 crib. The 216-A-5 crib pipeline is sitecode 200-E-239-PL.

Waste Type: Process Effluent

Waste Description: Until November 1961, the site received process condensate from the 202-A Building. From November 1961 to October 1966, the site was active but received no waste (backup for the 216-A-10 Crib). In October 1966, the site received process condensate from the 202-A Building. The waste is acidic.

Code: 216-A-6 **Classification:** Accepted
Names: 216-A-6; 216-A-6 Cavern **Reclassification:** None
Type: Crib **Start Date:** 11/1/1955
Status: Inactive **End Date:** 1/1/1970

Description: The site is marked with AC-540 markers and posted with Underground Radioactive Material signs. The unit was constructed with a 38-centimeter (15-inch) Vitrified Clay Pipe (VCP) placed horizontally 3.7 meters (12 feet) below grade the length of the unit. Five 31-meter (100-foot) lengths of perforated 15-centimeter (6-inch) V.C.P. are placed perpendicularly to the first pipe at 6.1-meter (20-foot) intervals. The site contains approximately 2,580 cubic meters (91,000 cubic feet) of coarse gravel fill, backfilled over. The side slope from the surface to 2.1 meters (7 feet) is 1:1 and from 2.1 meters (7 feet) to the site bottom, 2:1.

Location: The site is located outside the 200 East Area perimeter fence, east of the Plutonium Uranium Extraction (PUREX) facility and south of 241-AP Tank Farm.

Release Description: UPR-200-E-19, UPR-200-E-21, UPR-200-E-29.

Related Sites/Structures: The crib is associated with the 216-A-30 crib and 200-E-113-PL.

or beta/gamma values. A 1980 telephone conference documentation sheet explained that the crib received water testing effluent in 1956. The crib was active until 1978. The crib was inactive until October 1981, when it again received acidic process condensate from 202-A. The crib was deactivated in March 1987. The unit consists of a 20-centimeter (8-inch) SST pipe placed horizontally 9.1 meters (30 feet) below grade, 8.2 meters (27 feet) east of the centerline. The site has a wedge-shaped cross section and a side slope of 1:1.5. The excavation has 4.6 meters (15 feet) of rock fill with a volume of 11,700 cubic meters (414,000 cubic feet) of rock fill and has been backfilled over.

Related Sites/ Structures: The site is associated with 202-A, and 216-A-5 crib. The pipelines associated with the crib are documented in sitecode 200-E-192-PL. The pipeline to the 216-A-45 crib teed off of the 200-E-200-192-PL (see sitecode 200-E-231-PL).

Waste Type: Process Effluent

Waste Description: During 1956, the site was used only for testing purposes using nonradioactive water. From 1956 to November 1961, the site was inactive. From November 1961 to January 1978, the site received process condensate from the 202-A Building. From January 1978 to October 1981, the site was again inactive. From October 1981 to 1986, the site received the process condensate from the 202-A Building. The crib received Process Distillate Discharge (PDD), a corrosive/mixed waste, at an average flow rate of 227 liters/minute (60 gallon/minute). The discharge was an acidic waste stream generated from two product concentrators in the Plutonium Uranium Extraction (PUREX) process. The pH of this waste ranged from 1.0 to 2.5 standard units which makes it a corrosive mixed waste. Approximately 62.6 million kilograms (138 million pounds) of waste were disposed of in the crib in 1986. Characterization holes placed through the crib in 2003 found cesium-137 at depths ranging from 48 to 84 feet below ground surface and europium-154 at approximated 84 feet below ground surface.

Code: 216-A-15	Classification: Accepted
Names: 216-A-15; Miscellaneous Stream #461	Reclassification: None
Type: French Drain	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1972

Description: The unit is composed of two, 1.2 meter (4 foot) diameter, 1.2 meter (4 foot) long bell-end, reinforced concrete sewer pipes placed vertically end to end. It is filled with 1.8 meters (6 feet) of stone. Approximately 11 meters (35 feet) of vent pipe extends from the grade surface to the concrete drain structure. 1.6 meters (5.5 feet) of vent pipe extends above grade.

Location: The site is located approximately 82 meters (270 feet) south of the center of the 202-A Building and east of the Sampler Pit #4.

Process Description: The drain received condensate and storm water that collected in the drain at the bottom of the Process Condensate Sample Pit #4. A leak in one of the fittings may have allowed radioactive liquid to be released to the french drain. A manhole cove on the top of the sample pit may have allowed stormwater to enter the pit.

Related Sites/ Structures: The site is associated with PUREX, the 216-A-10 crib and the 216-A-5 crib. The pipeline to this French drain is 200-E-242-PL.

Waste Type: Process Effluent

Waste Description: The site received the drainage from the 216-A-10 Process Condensate Sampler Pit #4. The waste is acidic. The site contains less than 50 curies total beta activity.

Code: 216-A-18 **Classification:** Accepted
Names: 216-A-18; 216-A-18 Crib; 216-A-18 Excavation; 216-A-18 Grave; 216-A-18 Sump **Reclassification:** None
Type: Trench **Start Date:** 11/1/1955
Status: Inactive **End Date:** 1/1/1956
Description: The site is marked and posted with Underground Radioactive Material signs.
Location: The site is located outside of the 200 East Area perimeter fence, east of the 241-AX Tank Farm, along Canton Avenue.
Process Description: The trench received start up waste from PUREX via an aboveground pipeline. The site was an excavation with a side slope of 1:2. No crib structure was ever built.
Related Sites/Structures: The site is associated with the 202-A facility.
Waste Type: Chemicals
Waste Description: The site received the depleted uranium waste from the cold start-up run at 202-A Building.

Code: 216-A-19 **Classification:** Accepted
Names: 216-A-19; 216-A-19 Crib; 216-A-19 Grave; 216-A-19 Sump; 216-A-19 Test Hole **Reclassification:** None
Type: Trench **Start Date:** 11/1/1955
Status: Inactive **End Date:** 1/1/1956
Description: The site is marked and posted with Underground Radioactive Material signs. In February 2001, a narrow area posted with Soil Contamination Area signs extended between the 216-A-19 southern site boundary and northern boundary of 216-A-34.
Location: The site is located east of the 200 East Area perimeter fence, north of the 216-A-8 Crib.
Process Description: The site received PUREX start up waste during November and December 1955. Several references state it also received condenser cooling water from the 241-A-431 building via the 216-A-34 Ditch. However, drawings do not show the 216-A-34 Ditch connecting to the 216-A-19 Grave. HW-40763 states that in December 1955, the ditch received PUREX waste from "C-203 and C-204 tanks". The ditch was also used for disposing of depleted uranium from the cold start up of PUREX.
Related Sites/Structures: The site is associated with PUREX, 216-A-19, 216-A-20 and 216-A-34.
Waste Type: Water
Waste Description: The site received the 241-A-431 Building contact condenser cooling water via the 216-A-34 Ditch and the depleted uranium waste from the cold start-up run at the 202-A Building.
HW-40763 states that in December 1955, the ditch received PUREX waste from "C-203 and C-204 tanks".

Code: 216-A-20 **Classification:** Accepted
Names: 216-A-20; 216-A-20 Crib; 216-A-20 Grave; 216- **Reclassification:** None

A-20 Sump; 216-A-20 Test Hole

Type: Trench **Start Date:** 11/1/1955

Status: Inactive **End Date:** 12/1/1955

Description: The site is marked and posted with Underground Radioactive Material signs.

Location: The site is located east of the 200 East Area perimeter fence, north of the 216-A-8 Crib.

Release Description: HW-60807 includes a comment note, stating that 216-A-20 overflowed. The overflow covered an area measuring approximately 30 meters (100 feet) north and 60 meters (200 feet) east of the crib site. The overflow area was hand drawn onto H-2-56521.

Process Description: 216-A-20 was originally a test hole excavated with a drag line and used for PUREX start-up waste. The site also received cooling water from the 241-A-431 building contact condenser via the 216-A-34 Ditch. The site was backfilled when the specific retention capacity was reached.

Related Sites/ Structures: The site is associated with the 241-A-431 building, 202-A, and the 216-A-34 Ditch.

Waste Type: Water

Waste Description: The site received the 241-A-431 Building contact condenser cooling water via the 216-A-34 Ditch and the depleted uranium waste from the cold start-up run at the 202-A Building.

Code: 216-A-21 **Classification:** Accepted

Names: 216-A-21; 216-A-21 Crib **Reclassification:** None

Type: Crib **Start Date:** 10/1/1957

Status: Inactive **End Date:** 6/1/1965

Description: The crib is covered with gravel. It is marked and posted with Underground Radioactive Material signs. A 10-centimeter (4-inch) stainless steel distribution line runs horizontally through the length of the site, 2.1 meters (7 feet) below grade. Branching horizontally from this distribution line are four 1.2-meter (4-foot) sections of 10-centimeter (4-inch) tubing. Branching vertically at the same locations are four 2.4-meter (8-foot) sections of 10-centimeter (4-inch) schedule 40 perforated pipe running to the bottom of the site. The excavation is V-shaped in cross-section with a side slope of 1:1.5. The excavation has approximately 1.8 meters (6 feet) of gravel fill and is backfilled over.

Location: The site is located south of the 202-A Building inside the PUREX Exclusion Fence.

Related Sites/ Structures: The site is associated with the 202-A facility, 293-A, 291-A, 293-A and 200-E-103. The VCP pipeline associated with this crib is sitecode 200-E-193-PL. The stainless steel line is sitecode 200-E-196-PL.

Waste Type: Process Effluent

Waste Description: Until June 1958, the site received sump waste from 293-A Building. From June 1958 to December 1958, the site was inactive. From December 1958 to June 1965, the site received the above effluent, laboratory cell drainage from the 202-A Building, and the 291-A-1 Stack drainage. The waste is low in salt and is neutral to basic.

Code: 216-A-22 **Classification:** Accepted

Names: 216-A-22; 216-A-22 Crib; 216-A-22 French Drain **Reclassification:** None

Type:	Crib	Start Date:	11/1/1955
Status:	Inactive	End Date:	1/1/1958
Description:	The crib is marked with a single cement AC-540 marker and Underground Radioactive Material signs.		
Location:	The site is located along the north wall of the 203-A Building, north of PUREX.		
Release Description:	UPR-200-E-17 is described as yellow, uranium contaminated soil on the 216-A-22 Crib. No date is provided for this event, but it was documented in a 1959 report. Another release occurred on April 20, 1961. A UNH tank truck overflowed on the loading apron at 203-A. One thousand three hundred and thirty five pounds of depleted uranium was lost to the ground. The solution drained through an open plug valve in the sump and then went into the 216-A-22 French Drain. No WIDS sitecode is associated with this event.		
Process Description:	The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 liter (100,000 gallon) stain less steel tanks for UNH storage and three smaller nitric acid tanks. Two 10-centimeter (4-inch) effluent pipes are associated with the french drain. One pipe entered the crib 0.5 meters (1.5 feet) above original grade. This pipe is no longer visible as it was covered over to stabilize contamination. The pipe from the truck loadout apron enters the site horizontally, 2.4 meters (8 feet) below grade. The excavation is 4.9 meters (16 feet) in diameter at grade and 1.8 meters (6 feet) in diameter at the bottom, with a side slope of 3:1 (V:H). Approximately 3 meters (10 feet) of gravel fills the excavation bottom, and the site is backfilled.		
Related Sites/ Structures:	The site is associated with the 203-A facility and UPR-200-E-17. The pipeline associated with this drain is sitecode 200-E-159-PL.		
Waste Type:	Stormwater Runoff		
Waste Description:	The site received the drainage from the 203-A Building truck loadout apron, the sump waste from the 203-A Building enclosure, and the heating coil condensate from the P-1 through P-4 uraynal nitrate hexahydrate (UNH) tanks. The waste is low in salt, neutral to basic, and contains less than 1 curie total beta activity. The site received some uranium from the discharges. In 1961, a release from a UNH truck spilled 1335 pounds of uranium on the truck apron. Some of this drained into the 216-A-22 crib.		

Code:	216-A-26	Classification:	Accepted
Names:	216-A-26; 216-A-26 French Drain; 216-A-26B; Miscellaneous Stream #464	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1965
Status:	Inactive	End Date:	1/1/1991
Description:	There are no visible surface features for this drain. The unit is composed of three clay pipe (each 5 feet long) segments buried vertically. Some references state the clay pipe diameter is 3 feet and some state the diameter is 4 feet.		
Location:	The site is located inside the PUREX security fence, south of the 291-A Control House and approximately 4.57 meters (15 feet) south of 216-A-26A French Drain.		
Process Description:	This french drain was installed to replace the 216-A-26A french drain. Both drains received effluent from floor drains inside the 291-A Fan House. 216-A-26 was removed from service in 1991.		

Related Sites/ This site is associated with the 291-A Fan Control Building, the 216-A-26A french drain and

Structures: pipeline 200-E-270-PL.

Waste Type: Water

Waste Description: The site received the floor drainage from the 291-A Fan Control House. The waste was low in salt, neutral to basic, and contains less than 1 curie of total beta activity. The quantity of discharge is unknown.

Code: 216-A-26A **Classification:** Accepted

Names: 216-A-26A; 291-A French Drain; 216-A-25 Crib; 216-A-26 French Drain **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1959

Status: Inactive **End Date:** 1/1/1965

Description: There are no surface features for this drain. The unit is composed of three sections of clay pipe each 1.5 meters (5 feet) long, placed vertically end to end below grade. Some references state the pipe diameter was 0.9 meters (3 feet) and other references state the diameter as 1.2 meters (4 feet).

Location: The french drain is located inside the PUREX security fence, south of the 291-A Building.

Related Sites/Structures: The site is associated with the 291-A stack, fan house, the 216-A-26 French Drain and pipeline 200-E-270-PL.

Waste Type: Water

Waste Description: The site received the floor drainage from the 291-A Fan Control Room. The waste is low in salt, neutral to basic, and contains less than 1 curie total beta activity.

Code: 216-A-27 **Classification:** Accepted

Names: 216-A-27; 216-A-27 Crib **Reclassification:** None

Type: Crib **Start Date:** 6/1/1965

Status: Inactive **End Date:** 9/1/1970

Description: The crib is covered with gravel. It is marked and posted with Underground Radioactive Material signs. The crib is constructed of a 15-centimeter (6-inch) stainless steel perforated pipe is placed horizontally the length of the unit, 3 meters (10 feet) below grade. There is 680 cubic meters (24,000 cubic feet) of gravel fill in the excavation bottom. The site is backfilled over. The side slope is 1:1.5.

Location: The 216-A-27 Crib is located south of the PUREX facility, partially inside the double security fence.

Related Sites/Structures: The site is associated with the 293-A, 202-A and 291-A buildings. The stainless steel pipeline that feeds this crib is sitecode 200-E-196-PL.

Waste Type: Process Effluent

Waste Description: The site received the sump waste from the 293-A Building, the lab cell drainage from the 202-A Building, and the 291-A-1 Stack drainage. The waste is low in salt and is neutral to basic.

Code: 216-A-28 **Classification:** Accepted

Names: 216-A-28; 216-A-28 Crib; 216-A-28 French Drain **Reclassification:** None

Type: Crib **Start Date:** 1/1/1958

Status: Inactive **End Date:** 1/1/1967

Description: The site is not currently marked or posted.

Location: The site was located near the northwest corner of the 203-A Building, north of PUREX.

Process Description: The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 liter (100,000 gallon) stainless steel tanks for UNH storage and three smaller nitric acid tanks. The french drain received liquid waste from the 203-A sumps and heating coil condensate from the uranyl nitrate tanks. The effluent piping to the site was blanked off in November 1976 when the flow rate exceeded the infiltration capacity. The excavation had a 6-meter (20-foot) diameter at grade and a 3-meter (10-foot) bottom diameter, with a truncated cone shape. The excavation contained approximately 2.7 meters (9 feet) of gravel fill and was backfilled to grade. The unit contained a 10-centimeter (4-inch) stainless steel 304 perforated pipe, 5.2 meters (17 feet) long, extending horizontally 1.2 meters (4 feet) below grade and a 5-centimeter (2-inch) diameter, schedule 40, perforated stainless steel liquid level riser pipe, 4 meters (13 feet) long.

Related Sites/ Structures: The site is associated with 216-A-22, 216-A-3 and the 200-E-159-PL pipeline.

Waste Type: Process Effluent

Waste Description: The site received the liquid waste from the 203-A Building enclosure sumps and the heating coil condensate from the P1 through P4 uranyl nitrate hexahydrate (UNH) tanks. The waste is low in salt and is neutral to basic. Uranium may have been discharged to the waste site.

Code: 216-A-29 **Classification:** Accepted

Names: 216-A-29; 216-A-29 Ditch; A-29 Ditch; Snow's Canyon **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1991

Description: The ditch was backfilled and surface stabilized in 1991. It is posted as an Underground Radioactive Material area.

Location: The ditch originated southeast of the 241-A Tank Farm (east of 241-AP tank farm) outside of the 200 East Area perimeter fence. The ditch emptied into 216-B-3-3 Ditch which terminated at 216-B-3 Pond.

Process Description: From 1946 through 1953, a shallow depression, known as the Powerhouse Swamp and also the "A Swamp" (See sitecode 200-E-286) was located at W46600/N40400. This swamp area was located approximately in the same location as the head end of the 216-A-29 ditch. The head end of the 216-A-29 ditch was modified several times. The final relocation of the head end occurred 1983, during the construction of the 241-AP tank farm. From 1955 through 1991, the 216-A-29 ditch followed a natural depression, known as Snow's Canyon, toward the 216-B-3 ditch and pond area. The ditch received waste from the PUREX facility between November 1955 and September 1991.

Related Sites/ Structures: The chemical sewer line that fed the ditch is sitecode 200-E-187-PL. The ditch had two earth dams with wooden gates structures to regulated water flow. They were located at N41150, W45500 and N41550, W45200. The ditch is also associated with the 216-B-3 Pond, the 216-B-3 ditches, 200-E-286 swamp (A Swamp) and UPR-200-E-51.

Waste Type: Process Effluent

Waste Description: The unit received waste from 202-A Chemical Sewer, acid fractionator condensate and

Description: condenser cooling water that flow to 216-B-3 Pond. Until December 1957, the site received process cooling water and chemical sewer waste from 202-A. From December 1957 to February 1958, the site received all of the above, but the process cooling water was rerouted to 216-A-25 Pond. From February 1958 to December 1962, the ditch received the above plus acid fractionator condensate from 202-A. From December 1962 to December 1963, the ditch also received seal cooling water from air sampler vacuum pumps in 202-A. From December 1963 to January 1966 the vacuum pump cooling water was rerouted to 216-A-35 French Drain.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-51

Names: UPR-200-E-51; Liquid Release from Purex to B-Pond; UN-200-E-51

Code: 216-A-30 **Classification:** Accepted

Names: 216-A-30; 216-A-30 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1961

Status: Inactive **End Date:** 1/1/1992

Description: The crib is surrounded with concrete AC-540 markers and posted with Underground Radioactive Material signs.

Location: The crib is located outside the 200 East Area perimeter fence, east of the 202-A Building.

Process Description: The unit includes two distribution pipes: one 15-in (38 cm) corrugated perforated pipe running approximately 4 ft (1.2 m) below grade to the center of the unit, the other a 16-in (41 cm) steel pipe running parallel to the other, 4 ft (1.2 m) below grade to the center of the unit, then angling 45 degrees and changing to a 15-in (38 cm) corrugated, perforated pipe running 7 to 8 ft (2.1 to 2.4 m) below grade to the end of the unit. It is filled with 5 ft (1.5 m) or a total of 123,000 cu ft (3,480 m³) of gravel, and the site has been backfilled. The side slope is 1.5:1.

Related Sites/ Structures: The crib is associated with PUREX operations. Two 8-inch (20 cm) carbon steel gage wells extending from the bottom to 3 ft (0.9 m) above grade. A 15-inch (38 cm) diameter vent riser extending from the distribution pipe to 3 ft (0.9 m) above grade. Two 16-in (41 cm) by 16-inch (41 cm) by 8-inch (20 cm) concrete pads supporting the gage wells. 47,720 square feet (4430 square meters) of polyethylene sheets were added. The site is associated with the 216-A-6 Crib. The pipeline from PUREX associated with this crib is sitecode 200-E-113-PL and 200-E-260-PL. The pipeline from the 216-A-37-1 distribution box to the 216-A-30 crib distribution box is sitecode 200-E-232-PL. The pipeline from 216-A-30 to the 216-A-37-2 Distribution Box is 200-E-233-PL.

Waste Type: Process Effluent

Waste Description: Until 11/65, the site received the steam condensate, equipment disposal tunnel floor and water-filled door drainage, and the slug storage basin overflow waste from 202-A Building. From 11/65 to 1/70, the 216-A-6 Crib was restored to service to receive some of the above effluents because the effluent flow rate had exceeded the infiltration capacity of this unit. From 1/70 to 6/92, the site received the above effluent because the 216-A-6 Crib was deactivated. The waste was low in salt and is neutral to basic. TPA Milestone M-17-22A required that PUREX steam condensate discharge to 216-A-30 Crib be discontinued by June 1992. The fourth amendment to the TPA (89-10 Rev 3) documents that the steam condensate stream was shut down in June 1992 and that all discharges to this crib were discontinued. The unit was permanently isolated in 1995.

Code: 216-A-33 **Classification:** Accepted

Names: 216-A-33; 216-A-33 Dry Well; 216-A-26B **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1964

Description: The 291-AE Filter Building has been built over top of the site where this drain was located. The stainless steel (M21-UD) inlet pipe entered the unit 1.5 meters (5 feet) below grade. The french drain had a carbon steel cover.

Location: The site is located inside the PUREX security fence, south of 202-A, and southwest of the 291-A stack.

Related Sites/ Structures: The french drain is associated with the 291-A Fan House and pipeline 200-E-269-PL.

Waste Type: Process Effluent
Waste Description: The site received the bearing coolant waste from the 291-A-1 Stack electrical exhaust fans. The waste is low in salt, neutral to basic, and contains less than 1 curie of total beta activity.

Code: 216-A-34 **Classification:** Accepted
Names: 216-A-34; 216-A-34 Crib; 216-A-34 Ditch **Reclassification:** None
Type: Ditch **Start Date:** 11/1/1955
Status: Inactive **End Date:** 12/1/1957

Description: The site is marked and posted with Underground Radioactive Material signs. It has a small amount of bunch grass vegetation growing on it. In February 2001, a posted Soil Contamination Area extended northward from the edge of 216-A-34 to 216-A-19.

Location: The site is located east of the 200 East Area perimeter fence. It is north of the 216-A-8 crib.

Process Description: The site received cooling water from the contact condenser in the 241-A-431 building. Drawings indicate a 38 centimeter (15 inch) diameter clay pipe fed 216-A-34 and was connected to the headwall. Ditch effluent was routed to the 216-A-19 and 216-A-20 trenches. Maxfield (1979) describes the site as two ditches; one ditch measuring 85 meters (280 feet) long and 9 meters (30 feet) wide and a second ditch measuring 39.6 meters (130 feet) long and 9 meters (30 feet) wide. However, it is not clear if there were two ditches or actually a headwall structure and a ditch. The Maxfield ditch dimensions are similar to the headwall structure dimensions. Drawings show the headwall width was 3 meters (10 feet) wide at the west end fanning out to 12 meters (40 feet) wide at the east end. The headwall structure had 1:2 side slopes. The headwall structure was 39.6 meters long (130 feet). It tapered off into an open ditch. The ditch terminated in the 216-A-20 Grave. No documentation has been located to describe how the effluent was directed to the 216-A-19 Grave.

Related Sites/ Structures: The site is associated with the 241-A-431 building, the 216-A-19 trench and the 216-A-20 trench. The pipeline to the 216-A-34 crib is discussed in sitecode 200-E-166-PL.

Waste Type: Water
Waste Description: The site received the cooling water from the contact condenser in the 241-A-431 Building in route to the 216-A-19 and 216-A-20 Trenches. The site contains less than 1 curie total beta activity.

Code: 216-A-36A **Classification:** Accepted
Names: 216-A-36A; 216-A-36 Crib **Reclassification:** None

Type: Crib **Start Date:** 9/1/1965

Status: Inactive **End Date:** 3/1/1966

Description: The 216-A-36A and 216-A-36B cribs are located inside a common light post and chain area. The 216-A-36A is the at the north end of the chained area. The large chained area is posted with Underground Radioactive Material signs. The risers near the center of the cribs had been posted with Soil Contamination signs, but were surface stabilized in May 2010.

Location: The crib is located south of the 202-A Building and west of Canton Avenue, outside the security fence.

Process Description: The 216-A-36A portion of the crib was activated in September 1965 to receive ammonia scrubber waste from PUREX. A new annular dissolver was installed in A cell in October 1965. Shortly after the start up of the new dissolver system, it was noted that significant quantities of fission products were being flushed to the 216-A-36A Crib. Monthly discharge records estimated that approximately 135,000 curies of fission products, that included 610 curies of cesium-137 and 625 curies of strontium-90, had been release to the crib from October 1965 through January 1966. In December 1965, a test well was drilled into the crib to determine the extent of the fission products in the ground and to determine if the crib should continue to be used. On December 29, 1965, a soil sample was collected from the boring that read between 300 and 500 R/hour. Work was stopped and special procedures, including use of long handled tongs and exposure time monitoring, were required for handling and disposing of the excavated material. It was calculated that approximately 400,000 curies of contaminants had been discharged to the crib that included 1600 curies of cesium-137. The 216-A-36A portion of the crib was terminated in March 1966. The existing pipeline was extended to the 216-A-36B portion of the crib. A 29 meter (95 foot) concrete dam was placed between the 216-A-36A and 216-A-36B crib sections. The original excavation is 183 meters (600 feet) long by 3.4 meters (11 feet) wide by 6.7 meters (22 feet) deep with a 1:1.5 backslope. The excavation has 0.9 meters (3 feet) of gravel fill and a 15-centimeter (6-inch) M-8 (stainless steel) perforated pipe is placed horizontally. A plastic barrier separates the gravel from the overlying backfill and the site has been backfilled to original grade. The northernmost 30.5 meters (100 feet), now called 216-A-36A, was isolated and deactivated. The remaining 152 meters (500 feet) of the crib was renamed 216-A-36B and remained active during the majority of PUREX operation.

Related Sites/ Structures: The pipeline associated with this crib is 200-E-253-PL.

Waste Type: Process Effluent

Waste Description: The site received the ammonia scrubber waste from the 202-A Building. The waste is low in salt and is neutral to basic. The site was deactivated because of a large discharge of fission products. In December 1965, it was calculated (from bore hole soil samples) that approximately 400,000 curies of contaminants had been discharged to the crib that included 1600 curies of cesium-137.

Code: 216-A-36B **Classification:** Accepted

Names: 216-A-36B; Purex Ammonia Scrubber Distillate (ASD); 216-A-36 Crib **Reclassification:** None

Type: Crib **Start Date:** 3/1/1966

Status: Inactive **End Date:** 9/6/1987

Description: The 216-A-36B portion of the crib is located inside the same light post and chain area as the 216-A-36A Crib. The 216-A-36B is the southern end of the chained area. The large chained area is posted with Underground Radioactive Material signs. The risers near the center of the cribs had been posted with Soil Contamination Area signs, but were surface stabilized in May

2010. The 216-A-36B portion of the chained area is considerably larger than the 216-A-36A portion.

Location:	The crib is located south of the 202-A Building and west of Canton Avenue, outside the security fence.
Release Description:	During the week of May 21 to May 28, 1970, an abnormally large quantity of radionuclides was discharged to the A36-B crib. A letter from C. W. Malody reports that the volume was 1.6 million liters (420,000 gallons), and the sample analysis showed 9.3 kilograms (20.5 pounds) of uranium; 82.3 grams (2.9 ounces) of plutonium; 15,900 Curies of total beta; 9,050 Curies of 95-zirconium; 4,390 Curies of 106-ruthenium; and 5,800 Curies of 144-cerium were released to the crib during those dates. For 1969, the 12 month total of waste to the crib was 10 kilograms (22 pounds) of uranium; 7.2 grams (2.5 ounces) of plutonium; 1790.8 Curies of beta; 6.6 Curies of cobalt-60; 99.1 Curies of strontium-90, 110.2 Curies of cesium-137, and 454.0 Curies of ruthenium-106 in 17.8 million liters (4.695 gallons) volume of liquid.
Process Description:	The 216-A-36B Crib was built to replace the 216-A-36A Crib, that had been terminated due to the large amounts of fission products discharged to it. The 216-A-36B Crib was constructed by extending the pipeline from the 216-A-36A Crib in March of 1966. A concrete dam was placed between the two portions of the crib. The 216-A-36B crib received ammonia scrubber waste from the PUREX process. Fuel rods from the 100-N reactor were clad in zirconium. Removal of the zirconium cladding required using ammonium fluoride and ammonium nitrate solutions (AFAN). The dissolving process produced a large amount of ammonia offgasses. The offgas was scrubbed with water to reduce the amount of water released to the air. Spent ammonia scrubber waste was transferred to a concentrator where the waste was distilled. The crib received discharge condensate from the waste stream concentrator. The unit is a gravel structure with a 15-centimeter (6-inch) M-8 perforated pipe placed horizontally, 7 meters (23 feet) below grade. The excavation has 620 cubic meters (22,000 cubic feet) of gravel fill, and the site has been backfilled. The side slope is 1:1.5.
Related Sites/Structures:	The site is associated with 202-A facility and 216-A-36A Crib. The pipeline associated with this crib is 200-E-253-PL.
Waste Type:	Process Effluent
Waste Description:	Until October 1972, the site received the ammonia scrubber waste from the 202-A Building (Plutonium Uranium Extraction [PUREX]). The site was retired in October 1972 when the PUREX plant shut down. In November 1982, the site was reactivated to receive the above wastes when PUREX operations resumed. The waste is low in salt and is neutral to basic. The concentrations of ammonium hydroxide discharged to the crib resulted in the waste stream being classified as a dangerous waste.
	During the week of May 21 to May 28, 1970, an abnormally large quantity of radionuclides was discharged to the A36-B crib. A letter from C. W. Malody reports that the volume was 1.6 million liters (420,000 gallons). The sample analysis showed 9.3 kilograms (20.5 pounds) of uranium; 82.3 grams (2.9 ounces) of plutonium; 15,900 Curies of total beta; 9,050 Curies of 95-zirconium; 4,390 Curies of 106-ruthenium; and 5,800 Curies of 144-cerium were released to the crib during those dates.
	For 1969, the 12 month total of waste to the crib was 10 kilograms (22 pounds) of uranium; 7.2 grams (2.5 ounces) of plutonium; 1790.8 Curies of beta; 6.6 Curies of cobalt-60; 99.1 Curies of strontium-90, 110.2 Curies of cesium-137, and 454.0 Curies of ruthenium-106 in 17.8 million liters (4.695 gallons) volume of liquid.

Code: 216-A-37-1

Classification: Accepted

Names: 216-A-38-1; 216-A-38 Crib	Reclassification: None
Type: Crib	Start Date:
Status: Inactive	End Date:
Description: The crib is surrounded by light posts and a chain. It is posted with Underground Radioactive Material signs. There are no concrete AC-540 markers or signs to label the site.	
Location: The crib is located southwest of 202-A Building north of 1st Street. It is located south of the PUREX security fence.	
Process Description: The crib was built to replace the 216-A-10 crib, but had not been activated when plans for modifying the PUREX head end process were begun. The planned building addition would have been constructed immediately adjacent to the crib. For this reason, the crib was activated. The site is identified in the project proposal (Project IAP-606) as the PUREX Process Condensate Crib - 216-A-38. It was intended to receive the PUREX process condensate waste that was being discharged to the 216-A-10 Crib. The 216-A-10 was showing signs of strontium-90 saturation. The replacement crib was required for continued disposal for the disposal of large volumes [1,040,000 to 1,230,000 liters (275,000 to 325,000 gallons per day)] of condensate waste. There was a potential for this process condensate to become grossly contaminated as a result of reduced vapor phase deentrainment or foaming in the concentrator. The location for the 216-A-38-1 Crib was chosen to shorten piping runs and take advantage of the high percolation rate [76 to 95 liters (20-25 gallons)] per day per square foot. The existing 216-A-10 crib could not be depended upon for continued disposal of process condensate. It had been in operation since June 1961 (five years), and had received about 1,800 million liters (475 million gallons) of condensate which contained about 115,000 curies of beta activity (as of June 1966). Strontium-90 had been verified to be in the groundwater under the crib. There is a 15-centimeter (6-inch) perforated stainless steel distribution pipe (from PUREX and running the length of the crib) reducing to 10-centimeter (4-inch) perforated pipe placed at 10 meters (33 feet) below grade. This pipe was isolated with the installation of a blind flange in 1989. There is 1.5 meters (5 feet) of gravel in the excavation with a membrane barrier between the gravel and the backfill. The excavation was backfilled with excavated material. The side slopes of the excavation were cut at 1:1	
Related Sites/Structures: The site is associated with the 216-A-10 crib. The pipeline to the 216-A-38-1 crib is sitecode 200-E-240-PL. There are two radiological test wells (one at each end of the crib).	
Waste Type: Process Effluent	
Waste Description: Although the crib was built to receive PUREX effluent, it was never used.	

Code: 216-A-40	Classification: Accepted
Names: 216-A-40; 216-A-40 Retention Basin; 216-A-39 Crib; 216-A-39 Trench	Reclassification: None
Type: Retention Basin	Start Date: 1/1/1968
Status: Inactive	End Date: 1/1/1979
Description: The site is currently a surface stabilized area that is posted Underground Radioactive Material. The corners are marked with concrete AC-540 markers. Some contaminated equipment is being stored on top of the backfilled basin. The equipment is posted Radioactive Material Area/Contamination Area.	
Location: The site is located northwest of the 244-AR Vault. It is approximately 152 meters (500 feet) west of the 241-AX Tank Farm and approximately 152 meters (500 feet) south of 7th Avenue.	

Process Description: meter (12 inch) diameter schedule 40 distribution pipe ran horizontally through the south end of the unit, 3.7 meters (12 feet) below grade. Collapsible rubber bladders were utilized to contain the contaminated cooling water and steam condensate. Contaminated cooling water and steam condensate from the 244-AR Vault were diverted to the 216-A-40 Retention Basin when the effluent was above standard release limits for the water to be sent to the 216-B-3 or 216-A-25 Ponds. The retention basin bladders failed in 1979 and the unit was removed from service. Although it was not being used, it remained an open basin until 1994.

Related Sites/Structures: The site is associated with the 244-AR Vault facility, UPR-200-E-143, UPR-200-E-100 and UPR-200-E-59. Pipelines associated with the basin are 200-E-274-PL and 200-E-275-PL.

Waste Type: Steam Condensate

Waste Description: The site received and stored in rubber bladders, the diverted cooling water and steam condensate from the 244-AR Vault.

Code: 216-A-41 **Classification:** Accepted

Names: 216-A-41; 216-A-41 Crib; 291-AR Stack Drain; 296-A-13 Stack Drain **Reclassification:** None

Type: Crib **Start Date:** 1/1/1968

Status: Inactive **End Date:** 1/1/1974

Description: The site is a small crib that is no longer marked or posted. The area where the crib is assumed to be located is covered with gravel.

Location: The crib is located northwest of the 296-A-13 stack, west of Buffalo Ave. and north of the 244-AR Vault facility.

Process Description: The crib received drainage from the 296-A-13 Stack (WIDS Site 296-A-13). The stack is connected to the 291-AR Filter Building. The bottom of the crib (elevation: 207 meters [678.5 feet]) is filled with 0.5 meters (1.5 feet) of 3.8 to 25.4-centimeter (1.5 to 10-inch) rock, then 20.3 centimeters (8 inches) of 1.9 to 3.8-centimeter (0.75 to 1.5-inch) gravel, and several centimeters of 1.9-centimeter (0.75-inch) gravel. This material is covered by a layer of 20 millimeter polyethylene and 10.2 centimeters (4 inches) of sand (elevation: 208 meters [681.0 feet]). The site was then backfilled with soil to a ground elevation of 209 meters (684.0 feet) (with the crown at 212 meters [696.0 feet]). The side slope is 1:1. A 10.2-centimeter (4-inch) vitrified clay pipe enters the crib (from the 296-A-13 Stack) at elevation 208 meters (681.0 feet) and connects to the crib dispersion structure, constructed of 20.3 by 20.3 by 40.6-centimeter (8 by 8 by 16-inch) bond beam concrete blocks placed end-to-end. The pipeline from the stack (296-A-13) to the crib is approximately (15 feet) long and extends northwest (30 degrees west of true north) from the stack. The site is not marked in the field. The mapped center point location of the site is based on drawing coordinates from H-2-61975, "216-A-41 Crib, Plan and Profile". Drawing H-2-44501, "Area Map-200 East, A Plant Facilities", shows the crib at the same location.

Related Sites/Structures: The crib is associated with the 296-A-13 Stack (291-AR Filter Building Stack) (WIDS Site 296-A-13) and the 291-AR Filter Building. The Filter Building is related to the 244-AR Vault Canyon. The pipeline to the crib is 200-E-276-PL.

Waste Type: Steam Condensate

Waste Description: The site received the 296-A-13 Stack condensate drainage. According to RHO-CD-673, the waste was potentially slightly acidic and contained less than 1 curie total beta activity. Potential contaminants of concern (Stenner) may be tritium, cobalt-60, strontium-90, and cesium-137.

Code:	216-A-42	Classification:	Accepted
Names:	216-A-42; 216-A-42 Retention Basin; 216-A-42 Trench; 207-AA Retention Basin	Reclassification:	None
Type:	Retention Basin	Start Date:	1/1/1978
Status:	Inactive	End Date:	1/1/1997
Description:	The site is surrounded with steel posts and chain. It is posted with Underground Radioactive Material signs. Concrete cover blocks are visible on the top of the basin. The chain link fence has been removed. The site consists of a rubber-lined trench divided into three holding basins by two internal berms. One end of the trench features the inlet structure for the 91-centimeter (36-inch) diameter cooling water line while the other end has the inlet structure for the 20.3-centimeter (8-inch) diameter steam condensate pipeline. Both lines enter at 2.9 meters (9.5 feet) below grade. Outlet drains are located at the low-points in each basin and connect to the 216-A-42A Pump Station. The capacity of the three basins is in excess of 6.1E+06 liters (1.6E+06 gallon). The trench is equipped with a float. Concrete cover blocks were installed over the basins in 1984.		
Location:	The retention basin is located outside the eastern 200 East Area security fence. It is east of the 202-A Building, directly east of the 216-A-6 Crib.		
Process Description:	The 216-A-42 Retention Basin was built to hold cooling water or steam condensate that was contaminated above standard release limits and prevent its disposal to the Gable and B Pond systems or to cribs. After the retained effluent contents were analyzed, a built-in recovery system provided the capability of pumping solutions back into the PUREX facility for reprocessing (see sitecode 200-E-261-PL) or to cribs for disposal. Prior to the construction of the 241-AP Tank Farm (1983), the basin was connected to the 0.9 meter (36 inch) diameter corrugated metal pipeline (200-E-127-PL) that flowed to the Gable and B Ponds. A 0.3 meter (1 foot) diameter chemical sewer line (200-E-187-PL) tied the basin to the 216-A-29 ditch. Portions of the chemical sewer line and the corrugated metal pipe were removed during the 241- AP Tank Farm construction.		
Related Sites/ Structures:	The basin is associated with PUREX facility effluents, 216-A-30, 216-A-37-2, 216-B-3, 216-A-25 and UPR-200-E-66. The PUREX Recycle pipeline is 200-E-261-PL. Other pipelines associated with the basin operation are 200-E-113-PL, 200-E-262-PL and 200-E-263-PL.		
Waste Type:	Process Effluent		
Waste Description:	The unit received chemically or radioactively contaminated diversions from the PUREX chemical sewer line, cooling water line, and steam condensate lines. Depending upon the treatment required for the contaminant, the waste was released from the unit to the 216-A-30, 216-A-37-1 and 216-A-37-2 Cribs, to PUREX process piping, or to the Tank Farms.		

Code:	216-A-45	Classification:	Accepted
Names:	216-A-45; 216-A-45 Crib	Reclassification:	None
Type:	Crib	Start Date:	3/4/1987
Status:	Inactive	End Date:	9/1/1991
Description:	The crib is surrounded with light post and chain. It is posted as an Underground Radioactive Material area. There is a considerable amount of vegetation growing on the crib surface.		
Location:	The 216-A-45 Crib is located south of the PUREX facility, southwest of the 216-A-10 Crib.		
Release Description:	On April 2, 1987, more than 5 pounds of pure nitric acid in 6200 pounds of water was discharged to the 216-A-45 crib. The ph was greater than 2.0. The release was neutralized by adding additional carbonate to the A5 neutralization tank (sitecode 200-E-58).		

Process Description: The unit has an associated drain field consisting of five 10-centimeter (4 inch) diameter perforated, fiberglass-reinforced pipes evenly spaced across the width. At the bottom is 1.7 meters (5.5 feet) of clean rock, 8 to 13 centimeters (3 to 5 inches) in diameter. A layered cover consisting of a 15 centimeters (6 inches) layer of 8 to 13 centimeters (3 to 5-inch) diameter clean rock, a 15 centimeters (6-inch) layer of 1.9-centimeter (3/4-inch) gravel, a sheet of 10-mil polyethylene, and a 10-centimeter (4-inch) layer of sand are placed over the unit.

Related Sites/Structures: The crib is associated with the 202-A facility. The pipeline that fed this crib is sitecode 200-E-231-PL.

Waste Type: Process Effluent

Waste Description: The unit received process condensate from the 202-A Building (PUREX). Discharge to this crib was discontinued in mid-1989 and the waste stream was routed to storage tanks (WHC-EP-0367). TPA milestone M-17-20A required all discharge to the 216-A-45 Crib be ceased by September 1991. The Fourth Amendment to the TPA confirms that this milestone was met.

Code: 207-B **Classification:** Accepted

Names: 207-B; 207-B Retention Basin; B Plant Retention Basin **Reclassification:** None

Type: Retention Basin **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1997

Description: The unit is a concrete-lined basin, divided into two equal sized sections. The basin is surrounded by a 2.4 meter (8 foot) chain link fence and posted with Contamination Area signs.

Location: The site is located inside 200 East Area, northeast of the 221-B Building and south of the 241-B Tank Farm. It is on the east side of Baltimore Ave..

Process Description: The retention basins served as settling basins, receiving B Plant process sewer effluent through an underground pipeline prior to being discharged to the 216-B-2-1, 216-B-2-2, 216-B-2-3 ditches. It was possible to divert effluent to the 216-B-63 ditch. The 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches were connected to the 216-B-3 ditches and ponds. The 242-B Evaporator also discharged to the 207-B Retention Basin.

Related Sites/Structures: The basin has an inlet structure on the west and an outlet structure on the east side. There are two 0.9 square meter (3 square foot) sumps, one for each basin section. The basin is also associated with UPR-200-E-32. The 200-E-112-PL pipeline connects to the west side of the retention basin. The valve box on the east side of the retention basin tied into the pipeline that fed the 216-B-63 Ditch (sitecode 216-E-191-PL). The B Plant Chemical Sewer pipeline (200-E-188-PL), the pipeline to the 216-B-2-1 and 216-B-2-2 ditches (200-E-204-PL) and the pipeline to the 216-B-2-3 ditch (200-E-205-PL) are connected to the valve pit located east of the valve box. The pipeline from 242-B to the basin is sitecode 200-E-264-PL. The cooling water pipeline from 241-BY tank farm to the basin is 200-E-265-PL. In 1987, the entire 216-B-2 ditch system was replaced with a single pipeline (200-E-126-PL) that connected the 207-B retention basin to the 216-B-3 ditch and pond system.

Waste Type: Water

Waste Description: The unit received process cooling water from process equipment jackets in the 221-B Building. Normally, activity levels were low, and the water was discharged to the 216-B-3 Pond via the 216-B-2-1, 216-B-2-2, 216-B-2-3 and 216-B-3-1, 216-B-3-2 and 216-B-3-3 ditches. The valve box on the east side of the retention basin tied into the pipeline that fed the 216-B-63 Ditch (sitecode 216-E-191-PL). The B Plant Chemical Sewer pipeline, a pipeline from 242-B

Description: Chemical Sewer (see UPR-200-E-138).

Process Description: The site received chemical process sewer effluent from B Plant and its support facilities. The construction of the 216-B-2-2 ditch reused 762 meters (2500 feet) of the 216-B-2-1 ditch. Approximately 330 meters (1100 feet) of new ditch was dug. When active, the open ditch was 4.6 meters (15 feet) wide at the top with a side slope of 2.5:1.

Related Sites/ Structures: The following are related to the site: 207-B, 216-B-2-1, 216-B-2-3, 216-B-3-1, 216-B-3-2, and the 216-B-3 Pond. The pipelines associated with the ditch are WIDS sitecodes 200-E-112-PL, 200-E-188-PL, 200-E-203-PL and 200-E-204-PL.

Waste Type: Process Effluent

Waste Description: Until January 1965, the ditch transported and percolated 241-CR Vault cooling water, 221-B cooling water and steam condensate (replacing 216-B-2-1), and chemical sewer toward 216-B-3 Pond. From January 1965 to November 1967, the same effluents as those listed above in addition to 241-BY Tank Farm In Tank Solidification (ITS) Unit 1 cooling water were transported and percolated by the ditch. From November 1967 to February 1968, the same effluents as those listed above minus 284-E Powerhouse waste and steam condensate were released to the ditch. From February 1968 to April 1970, the same effluents as those listed above plus the 241-BY Tank Farm ITS Unit 2 were released to the ditch. An Unplanned Release on March 22, 1970 released approximately 1000 curies of strontium-90. After April 1970, the site received cleanup waste from 207-B Retention Basin.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-138

Names: UPR-200-E-138; UPR-200-W-66; Liquid Release from B-Plant; UN-200-E-138

Code: 216-B-2-3 **Classification:** Accepted

Names: 216-B-2-3; 216-B-2-3W; B Pond Ditch; B Swamp Ditch **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1970

Status: Inactive **End Date:** 1/1/1987

Description: The ditch is currently backfilled and surface stabilized. It is located inside a large Underground Radioactive Material area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches

Location: The head end of the ditch was located 180 meters (600 feet) southeast of 241-B Tank Farm. The ditch ran southeast and connected to an underground pipe near the northeast corner of 218-E-12A Burial Ground.

Process Description: The ditch was used to transport liquid waste from B-Plant to 216-B-3 Pond. It was built to replace the contaminated of 216-B-2-2 Ditch in 1970. The side slope is 2.5:1 The radionuclide inventory for the ditch is included with the 216-B-3 Pond.

Related Sites/ Structures: The ditch is associated with the 207-B Retention Basin. The pipelines associated with the ditch are WIDS sitecodes 200-E-188-PL and 200-E-205-PL.

Waste Type: Process Effluent

Waste Description: From April 1970 to July 1973, the site transported and percolated the 241-CR Vault cooling water, 221-B Plant cooling water, and condenser cooling water from 241-BY Tank Farm ITS (In Tank Solidification) Units 1 and 2. The waste flowed into the 216-B-3 Pond. After July 1973, the ditch received the above-listed effluents except from 241-BY Tank Farm ITS Units 1 and 2.

Code: 216-B-6 **Classification:** Accepted
Names: 216-B-6; 216-B-6 Crib; 216-B-6 Dry Well; 222-B-110 Dry Well; 222-B-110 Reverse Well **Reclassification:** None
Type: Injection/Reverse Well **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1949

Description: A concrete AC-540 post marks the location of this site and is labeled as an Underground Radioactive Material site. The reverse well is a 15.25-centimeter (6-inch) diameter pipe extending 48 meters (160 feet) below ground surface. The lower 7.6 meters (25 feet) of casing is perforated. The vent pipe was cut below grade.

Location: The reverse well is located 3.6 meters (12 feet) west and 0.9 meters (3 feet) north of the 222-B Building.

Process Description: The reverse wells at 222-T and 222-B were installed to provide disposal for the laboratory hot sink and sample table. During the bismuth phosphate fuel separation process, batch samples were analyzed in the 222-T and 222-B laboratories. HW-4850, written in 1945, states that the 222-T laboratory was discharging approximately 2.6 curies of fission products and 600 milligrams of plutonium to the dry well per month. Since similar work was done at the 222-B Laboratory, similar waste inventory can be assumed.

Related Sites/ Structures: This reverse well is associated with the 222-B Laboratory.

Waste Type: Process Effluent

Waste Description: The site received decontamination sink and sample slurper waste from 222-B Building. The site contains not less than 10 curies total beta. HW-4850, written in 1945, states that the 222-T laboratory was discharging approximately 2.6 curies of fission products and 600 milligrams of plutonium to the dry well per month. Since similar work was done at the 222-B Laboratory, similar waste inventory can be assumed. The waste is acidic and contains transuranics and fission products.

Code: 216-B-10A **Classification:** Accepted
Names: 216-B-10A; 222-B-1 Crib; 292-B Drainage; 216-B-10 Crib **Reclassification:** None
Type: Crib **Start Date:** 12/1/1949
Status: Inactive **End Date:** 1/1/1952

Description: The unit is a 3.7 by 3.7 by 1.1 meters (12 by 12 by 3.5 feet) wooden structure in an excavation. The side slope is 1:1. The bottom of the excavation is 6.1 meters (20 feet) below grade. The structure is not gravel-filled and has cave-in potential. The surface of the unit has subsided about 0.9 meters (3 feet) in the center, possibly indicating deterioration of the lumber. The site is marked and posted with Underground Radioactive Material and Cave-In-Potential signs.

Location: The unit is located south of the west end of 222-B Building.

Related Sites/ Structures: The pipelines associated with this crib are WIDS sitecodes 200-E-174-PL and 200-E-175-PL.

Waste Type: Process Effluent

Waste Description: Until December 1951, the site received the decontamination sink and sample slurper waste from 222-B Building and floor drainage from 292-B Building. After December 1951, the site received the same as above minus the 222-B Building waste. The waste is acidic and contains

transuranics and fission products.

Code: 216-B-10B **Classification:** Accepted
Names: 216-B-10B; 222-B-2 Crib; 216-B-10 Crib **Reclassification:** None
Type: Crib **Start Date:** 12/1/1949
Status: Inactive **End Date:** 10/1/1973

Description: The unit is a 3.7 by 3.7 by 1.1-meter (12 by 12 by 3.5-foot) wooden structure in an excavation. The side slope is 1:1. The bottom of the excavation is 6.1 meters (20 feet) below grade. The structure is not gravel-filled and has cave-in potential. The earth has subsided about 0.9 meters (3 feet) over the top of the unit. No site marker post is present.

Location: The unit is located south of the west end of 222-B Building.

Related Sites/ Structures: The pipeline associated with this crib is WIDS sitecode 200-E-174-PL.

Waste Type: Process Effluent

Waste Description: From December 1949 to December 1951 the site received the decontamination sink and sample slurper waste from the 222-B Building and the floor drainage from the 292-B Building. From December 1951 to May 1969 the site received only the floor drainage from the 292-B Building. From May 1969 to October 1973 the site received only the decontamination sink and shower waste from the 221-BC Building.

Code: 216-B-12 **Classification:** Accepted
Names: 216-B-12; 216-ER Crib; 216-ER-1,2,3 Cribs **Reclassification:** None
Type: Crib **Start Date:** 11/1/1952
Status: Inactive **End Date:** 11/1/1973

Description: The crib is marked and posted with Underground Radioactive Material and Cave-in Potential signs.

Location: The unit is located northwest of the 221-B Building and north of 7th Street.

Process Description: The crib originally received 221-U and 224-U condensate waste transported from 200 West Area via the Cross Site Transfer Line (line V219). Later, the crib received condensate waste from 221-B Plant. A lateral pipe extends to 216-B-12, crib #2, from the pipeline that feeds 216-B-62 crib (see sitecode 200-E-162-PL). The unit consists of a series of 3 cascading, 4.9 by 4.9 by 3.0-meter (16 by 16 by 10-foot) high wooden boxes in an excavation. A 1.3-centimeter (0.5-inch) rock backfill lies in the bottom 3.7 meters (12 feet) of the excavation and beneath each box is approximately 1.2 meters (4 feet) of this rock. The lumber is primarily 15.2 by 20.3-centimeter (6 by 8-inch) Douglas fir. The site contains 2,900 cubic meters (3,800 cubic yards) of 1.3-centimeter (0.5-inch) gravel. The side slope is 1:1.

Related Sites/ Structures: The crib is associated with the 270-E-1 neutralization pit, 216-B-62 and the 200-E-160-PL and 200-E-162-PL pipelines.

Waste Type: Process Effluent

Waste Description: From November 1952 to December 1957, the site received the process condensate waste from the tributyl phosphate uranium recovery processes at the 221-U and 224-U Buildings as well as B Plant condensate. From December 1957 to May 1967, the site was inactive. From May 1967 to November 1967, the site received construction waste from 221-B Building. After November 1967, the site received process condensate from 221-B Building. The waste is low in salt and is

neutral to basic.

Code: 216-B-51 **Classification:** Accepted
Names: 216-B-51; 216-BY-9 Crib **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1958

Description: The site is a small Underground Radioactive Material area measuring approximately 3 meters by 3 meters (10 feet by 10 feet). The concrete drain structure extends approximately 0.3 meters (1 foot) above the ground surface. The structure is approximately 1.5 meters (5 feet) in diameter with a wooden lid. The structure is also posted with Fixed Contamination Area signs.

Location: The french drain is south of 12 Street and east of Baltimore Ave. It is north of the 241-B Tank Farm and northeast of the 216-B-8 Crib and Tile Field.

Release Description: See UPR-200-E-144

Process Description: The french drain received drainage from the pipeline that transferred tri-butyl phosphate waste from the 241-BY Tank Farm to the BC Cribs and Trenches. The drain was active from January 1956 to January 1958. The unit is constructed of sections of 1.5 meter (5 foot) diameter concrete pipe stacked vertically extending 30 centimeters (1 foot) above ground and 4.3 meters (14 feet) below ground. The pipe is filled with 4 meters (13 feet) of gravel. The french drain has a wood cover with vent holes.

Related Sites/ Structures: The french drain is associated with 200-E-114-PL, 200-E-221-PL and UPR-200-E-144.

Waste Type: Process Effluent

Waste Description: The site received drainage from the BC Crib pipeline. The pipeline carried high salt, neutral to basic scavenged tributyl phosphate waste via 241-BY tank farm to the BC Crib area. The site contains less than 10 curies total beta.

Code: 216-B-55 **Classification:** Accepted
Names: 216-B-55; 216-B-55 Crib; 216-B-55 Enclosed Trench **Reclassification:** None
Type: Crib **Start Date:** 1/1/1967
Status: Inactive **End Date:** 1/1/1991

Description: The site is marked with concrete AC-540 markers and posted with Underground Radioactive Material signs. The unit is filled with approximately 1380 cubic meters (1,800 cubic yards) of gravel. A perforated 30 centimeter (30 inch) diameter galvanized pipe runs the length of the unit, 0.9 meters (3 feet) above the bottom. The site had two gage wells of 20 centimeter (8 inch) steel pipe with a galvanized sheet metal cap. Each well extended from the crib bottom to approximately 0.9 meters (3 feet) above grade. The crib was constructed with 19,500 square feet of membrane barrier.

Location: The site is located west of 225-B, and north of 7th Street.

Process Description: The site received steam condensate from 221-B.

Related Sites/ Structures: The site is associated with the 221-B facility. The pipeline to the 216-B-55 crib is discussed in sitecode 200-E-161-PL.

liner and cover.

Related Sites/ Structures: The 216-B-59B Retention Basin is associated with the 216-B-59 trench and the 221-B facility. The pipeline that fed the site is 200-E-277-PL.

Waste Type: Process Effluent

Waste Description: This unit received contaminated cooling water from the 221-B Building. The diverted effluent was pumped back into 221-B for reprocessing.

Code: 216-B-62 **Classification:** Accepted

Names: 216-B-62; 216-B-62 Crib; 216-B-62 Enclosed Trench **Reclassification:** None

Type: Crib **Start Date:** 1/1/1973

Status: Inactive **End Date:** 1/1/1991

Description: The crib is surrounded with cement AC-540 markers and posted with Underground Radioactive Material signs.

Location: The crib is located northwest of the 221-B building, west of Atlanta Ave.

Process Description: The site received process condensate from the 221-B building. The crib has 4 ft (1.2 m) of gravel fill on the bottom. A perforated, 6-in (15 cm) diameter fiberglass, reinforced epoxy pipe runs the length of the unit, 3 ft (0.9 m) above the bottom.

Related Sites/ Structures: The pipeline to the 216-B-62 crib is discussed in sitecode 200-E-162-PL.

Waste Type: Process Effluent

Waste Description: The site has received process condensate from the 221-B Building Separations Facilities. TPA milestone M-17-26 required all discharge to the Crib to be ceased by Sept. 1991.

Code: 216-B-63 **Classification:** Accepted

Names: 216-B-63; 216-B-63 Ditch; 216-B-63 Trench; B Plant Chemical Sewer Ditch **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1970

Status: Inactive **End Date:** 1/1/1992

Description: The site is a ditch that has been backfilled and surface stabilized. It is posted as an Underground Radioactive Material area and has Danger- Keep Out signs. Prior to stabilization, the ditch had an earth shielding berm and a side slope of 1.5:1.

Location: The site is located inside the 200 East Area, east of the 241-B Tank Farm and northeast of the 207-B Retention Basin.

Process Description: From March 1970 to May 1970, the 216-B-63 ditch received ITS-2 cooling water. The 216-B-63 ditch began to receive B Plant chemical sewer waste in May 1970 and continued through February 1992. The ditch received chemical sewer effluent from 221-B, 225-B and 271-B. The ditch was not connected to the B Pond system. The ditch terminated south of the 218-E-12B Burial Ground. 216-B-63 was designed to also receive diverted contaminated cooling water from 207-B and prevent it from reaching the 216-B-3 Pond, but no cooling water was actually ever diverted to the 216-B-63 ditch (see DOE/RL-92-05). In August 1970, the bottom of the ditch was dredged. The dredged material was contaminated with beta/gamma levels up to

3000 counts per minute. In February 1992, Project W-003 rerouted and replaced the VCP pipeline south of 211-BA, thereby eliminating the use of the 216-B-63 ditch. The chemical sewer effluent was combined with the B Plant cooling water effluent and discharged directly to the 216-B-3 Pond.

Related Sites/ Structures: The ditch was associated with 221-B, 225-B, and 271-B. The pipeline associated with the ditch is 200-E-191-PL. The B Plant chemical sewer pipeline is sitecode 200-E-188-PL. The chemical sewer and the pipeline to the ditch are connected to a valve pit east of the 207-B Retention Basin.

Waste Type: Process Effluent

Waste Description: From March 1970 to May 1970, the 216-B-63 ditch received 241-BY tank farm In-Tank Solidification (ITS-2) cooling water. The site has received effluent from the 221-B, 225-B, and 271-B Building floor drains and chemical sewer wastes. Waste included corrosive (acidic and caustic) dangerous waste from the regeneration of demineralizer columns at B Plant. Radiological discharges were considered to be relatively low, with a total of approximately 8.7 curies of beta and 7.6 kilograms (16.7 pounds) of uranium. The unit has not received dangerous waste since September 1985. In 1987, two incidental acid releases occurred. In February 1992, the chemical sewer discharge to the 216-B-63 ditch was eliminated. Effluent was rerouted to 216-B-3 Ponds via underground pipelines. TPA milestone M-17-04B required the elimination of B-Plant Chemical Sewer effluent to the 216-B-63 Ditch by February 1992.

Code: 216-B-64	Classification: Accepted
Names: 216-B-64; 216-B-64 Crib; 216-B-64 Retention Basin; 216-B-64 Trench	Reclassification: No Action (11/29/2004)
Type: Retention Basin	Start Date: 1/1/1974
Status: Inactive	End Date: 1/1/1997

Description: The chain link fence that once surrounded the basin has been removed. It is currently surrounded with light post and chain and posted as an Underground Radioactive Material Area. The basin contains a rubber bladder with a 190,000 liter (50,000 gallon) capacity. The unit is divided into two 6.1 meter (20 feet) by 19.8 meter (65 feet) sections. A concrete roof covers the basin.

Location: The retention basin is located west of the 225-B building.

Process Description: The basin was built to serve as an emergency diversion basin for steam condensate that exceeded crib release limits. Under normal conditions the steam condensate stream flowed through the BCS diverter station located at the south end of the basin and was discharged to the 216-B-55 crib. Under emergency conditions, the effluent stream could be diverted to the 216-B-64 basin. The water collected in the basin could be routed through the pump pit, located on the east side of the basin, and pumped back to 221-B or routed to the 216-B-55 crib.

Related Sites/ Structures: The basin is associated with 221-B operations and UPR-200-E-64. The pipelines to the basin are discussed in sitecode 200-E-163-PL.

Waste Type: Steam Condensate

Waste Description: The unit was intended to receive steam condensate from the 221-B Building that exceeded release limits. A facility test was conducted, but the basin was never used.

Code: 241-B-361	Classification: Accepted
Names: 241-B-361; 241-B-361 Settling Tank; IMUST;	Reclassification: None

Inactive Miscellaneous Underground Storage Tank

Type: Settling Tank **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1947

Description: The site is delineated with light post and chain. It is posted with Underground Radioactive Material and Inactive Miscellaneous Underground Storage Tank signs. The surface is covered with coarse rock.

Location: The site is located east of Baltimore Ave. and south of the 216-B-5 Reverse Well.

Process Description: The tank operated from April 1945 to September 1947, acting as a settling tank for waste originating in B Plant cells 5 and 6 and also low level concentrator condensate from the 224-B facility. The waste was routed first to the 241-B-154 Diversion Box before being transferred to the settling tank. After settling, the supernate from the tank was discharged to the 216-B-5 reverse well. During its period of service, 120 million gallons of waste passed through the tank. The waste contained approximately 4.3 kilograms of plutonium. It is estimated that half of the plutonium overflowed into the reverse well, leaving an estimated 2.4 kilograms of plutonium in the 241-B-361 tank. An estimated two million curies of strontium also remains in the tank. The tank sludge was sampled and analyzed in 1979. The sludge composition was consistent with the bismuth phosphate process. The 241-B-361 tank is constructed of 15-centimeter (6-inch) reinforced, prestressed concrete. The top of the unit is 1.8 meters (6 feet) below grade. Eleven risers are visible above grade. One is equipped with a manual tape, a second contains two dip tubes, a third vents the unit, and the eight remaining are blanked off.

Related Sites/Structures: The tank is associated with 221-B, 224-B and 216-B-5. The pipeline to the settling tank is sitecode 200-E-195-PL.

Waste Type: Sludge

Waste Description: The unit received low salt, alkaline radioactive liquid wastes from cell washings collected in the 5-6W Cells in 221-B and low level concentrator condensate from the 224-B facility. Although some reports estimate the quantity of waste in the tank as 121,000 liters (32,000 gallons), the unit is now estimated to contain 83,000 liters (22,000 gallons) of sludge containing 2.46 kilograms (5.42 pounds) of plutonium and 1,060 curies beta/gamma. The tank solids are primarily bismuth phosphate residue described as black in color with a pudding like consistency. The current volume is unknown and not monitored. The tank contents was sampled in 1979. The sludge contained 3.4 micro curies/gram of Pu-239, 1.4 micro curies/gram of Cs-137, and 23 micro curies/gram of SR-90. The liquid contained 6.1 E-7 micro curies/ml of Pu-239, 2.5 E-3 micro curies/ml of Cs-137, and 3.1 E-5 micro curies/ml of Sr-90.

Code: 216-BY-201 **Classification:** Accepted

Names: 216-BY-201; 216-BY-47; 241-BY Flush Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Supernatant Disposal Flush Tank **Reclassification:** None

Type: Settling Tank **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1955

Description: The unit is an underground tank that is not discernible from the surface. It is located within an Underground Radioactive Material area and has a sign stating "Restricted Access - 216-BY-201" and "IMUST" (Inactive Miscellaneous Underground Storage Tank). There is one metal covered manhole visible at the tank site and no visible riseres or vents. A steel monitoring pit, located near the southeast corner of the tank, is visible and may be identified by a steel cover.

Location: The flush tank is located north of the 241-BY Tank Farm and south of the 216-B-43 though 216-

B-50 cribs. It is south of 12th Street and west of Baltimore Ave..

Release Description: See UPR-200-E-9

Process Description: The flush tank is a rectangular, reinforced concrete disposal structure. The tank received waste from the 241-BY Tank Farm and the TBP (tri-butyl phosphate) Waste Line. The unit was designed to scavenge the TBP waste and discharge the supernatant to the 216-B-43 through 216-B-49 cribs. The 216-B-50 crib did not receive Uranium Recovery waste via the 216-BY-201 tank. The referenced drawing (H-2-2604) shows a vent pipe 15 centimeters (6 inches) in diameter by 2.7 meters (9 feet) long that extends from the top of the tank to 1.2 meters (4 feet) above grade, and a 15 centimeters (6 inches) diameter by 2.1 meters (7 feet) long pipe that extends from the top of the tank to 0.61 meters (2 feet) above grade. The tank is constructed of concrete. A manhole is located at each end of the tank. A 10 centimeter (4 inch) diameter pipe from the 241-B-BY Tank Farm enters near the top of the tank. A "Miller Siphon" (manufactured by Pacific Flush Tank Company) is located at the bottom of the tank and drains waste through a 35 centimeter (14 inch) line to the 216-B-43 through 216-B-50 cribs. An overflow pipe is also connected to this line.

Related Sites/ Structures: The site is related to 241-BY Tank Farm, the 216-B-43 through 49 cribs and UPR-200-E-9. Pipelines associated with the flush tank are 200-E-219-PL and 200-E-220-PL.

Waste Type: Process Effluent

Waste Description: The unit received radioactive waste from the 241-BY Tank Farm and the TBP Waste Line. Radiological constituents include strontium and cesium with their associated decay products, yttrium and barium. Chemical waste includes nitrate, sodium, aluminum, carbonate and hydroxide.

Code: 216-C-1 **Classification:** Accepted

Names: 216-C-1; 216-C-1 Crib; 216-C Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1953

Status: Inactive **End Date:** 6/1/1957

Description: The site is marked and posted with Underground Radioactive Material signs. A yellow cement crib marker, labeled 216-C-1, is located inside the chained 241-CX-71 tank area.

Location: The site is located in 200 East Area, south of 7th Street. It is east of the 209-E Facility and southwest of where the 201-C building once stood.

Process Description: The crib received cold run waste and process condensate from the 201-C (Hot Semiworks) test facility. The 201-C building went through three operational modes. It was originally built in 1949 as a pilot plant for the Reduction Oxidation (REDOX) Process. In 1954, the building was used as a pilot plant for the Plutonium Uranium Extraction (PUREX) Process. The plant was converted to recover strontium from process wastes in 1961. Waste neutralized in the 241-CX-71 tank was discharged to this crib. The structure is 7.0 by 2.4 by 1.7 meters (23 by 8 by 5.5 feet), constructed of 2.4-meter by 20-centimeter by 20-centimeter (8-foot by 8-inch by 8-inch) concrete ties, 2.4-meter by 20-centimeter by 10-centimeter (8-foot by 8-inch by 4-inch) spacer blocks, and 1.1-meter by 2.4-meter by 15-centimeter (3.7-foot by 8-foot by 6-inch) roof slabs. The unit has 1.5 meters (5 feet) or 120 cubic meters (4,200 cubic feet) of gravel fill backfilled over with 0.6 meters (2 feet) of soil, leaving 1.5 meters (5 feet) of the excavation unfilled. The distance from the release point to the site bottom is 1.2 meters (4 feet). The side slope is 1:2.

Related Sites/ Structures: The site is associated with 201-C, 241-CX-71, 200-E-156-PL pipeline and 200-E-41.

Structures: associated with this crib is sitecode 200-E-169-PL.

Waste Type: Process Effluent

Waste Description: The site received waste from the 201-C, 215-C, and 271-C buildings. The waste is acidic.

Code: 216-C-4 **Classification:** Accepted

Names: 216-C-4; 216-C-4 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1965

Description: The crib has been surface stabilized. It is marked and posted with Underground Radioactive Material signs. An access area has been cut through the 209-E security fence.

Location: The crib is located south of 7th Street in the Hot Semiworks area. The crib is located in between the double security fences surrounding the 209-E Critical Mass Laboratory.

Process Description: The crib received waste from the 276-C building. The unit is constructed of a 15-centimeter (6-inch) diameter galvanized, corrugated, perforated piping placed horizontally at 3.5 meters (11.5 feet) below grade. Two 6.1 meter (20 foot) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains 1.8 meters (6 feet) of gravel fill [74 cubic meters (2,600 cubic feet)] and has been backfilled. The waste release point is 1.5 meters (5 feet) from the site bottom. The crib bottom is 4.8 meters (16 feet) below ground surface and measures 3 meters (10 feet) by 6 meters (20 feet).

Related Sites/ Structures: The pipeline associated with this crib is sitecode 200-E-170-PL.

Waste Type: Process Effluent

Waste Description: The site received contaminated organic waste from the 276-C Building. The waste is low in salt and is neutral to basic.

Code: 216-C-5 **Classification:** Accepted

Names: 216-C-5; 216-C-5 Crib **Reclassification:** None

Type: Crib **Start Date:** 3/1/1955

Status: Inactive **End Date:** 6/1/1955

Description: The crib is marked with concrete AC-540 markers and Underground Radioactive Material signs. It is located within the larger, surface stabilized area known as 200-E-41.

Location: The crib is located south of 7th Street, within the Hot Semiworks stabilized area (200-E-41).

Process Description: The crib received 201-C "high salt waste" cold run waste via a 15-centimeter (6-inch) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 meters (11 feet) below grade. Two 6.1-meter (20-foot) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 meters (6 feet) or 74 cubic meters (2,600 cubic feet) of gravel fill and has been backfilled. The waste release point is 1.5 meters (5 feet) from the site bottom.

Related Sites/ Structures: The crib is associated with the 201-C facility, 241-CX-71 and 200-E-41. The pipeline associated with this crib is sitecode 200-E-173-PL.

Waste Type: Process Effluent

Waste Description: The site received the high salt waste (HSW) cold run waste from the 201-C Building. It received some waste that had passed through the 241-CX-71 Neutralization Tank.

Code: 216-C-6 **Classification:** Accepted
Names: 216-C-6; 241-CX Crib **Reclassification:** None
Type: Crib **Start Date:** 9/1/1955
Status: Inactive **End Date:** 9/1/1964

Description: The crib is covered with gravel and marked with cement posts on the four corners. It is posted with Underground Radioactive Material signs.

Location: The crib is located south of 7th Street, within the Hot Semiworks stabilized area (200-E-41). It is adjacent to the south side of the 241-CX Vault building.

Process Description: The unit is constructed of 15-centimeter (6-inch) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 meters (11 feet) below grade. Two 6.1-meter (20-foot) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 meters (6 feet) or 74 cubic meters (2,600 cubic feet) of gravel fill and has been backfilled. The waste release point is 1.5 meters (5 feet) from the site bottom.

Related Sites/Structures: The site is associated with the 241-CX Vault and the 241-CX-72 crib. The pipeline associated with this crib is 200-E-171-PL.

Waste Type: Process Effluent

Waste Description: The site received the process condensate from the 201-C Building and the 241-CX Vault floor drainage in the 241-CX area. The waste is acidic.

Code: 216-C-7 **Classification:** Accepted
Names: 216-C-7; 216-C-7 Crib **Reclassification:** None
Type: Crib **Start Date:** 1/1/1961
Status: Inactive **End Date:** 1/1/1983

Description: The site is surrounded by steel post and chain. It is posted with Underground Radioactive Material signs.

Location: The site is located southwest of the 209-E Building, inside the 209-E exclusion area fence.

Process Description: The crib received radioactive liquid waste from the 209-E Critical Mass Laboratory via 5 centimeter (2 inch) diameter steel pipeline that connected to a 0.15 meter (6 inch) diameter, perforated vitrified clay distribution pipe, placed horizontally 3 meters (9 feet) below grade. Two lengths of clay pipe are placed perpendicularly to the first, forming an H pattern. The site contains 123 cubic meters (4,100 cubic feet) of gravel fill and has been backfilled.

Related Sites/Structures: The crib is associated with 209-E-WS-3. The pipeline associated with this crib is sitecode 200-E-172-PL.

Waste Type: Process Effluent

Waste Description: The 216-C-7 crib received liquid waste from the 209-E Building Critical Mass Laboratory. Small tanks held reflector water that contained nitric acid, plutonium, uranium and neutron poisons such as boron, cadmium and gadolinium. The crib was placed on standby in 1983.

Status: Inactive**End Date:** 1/1/1998

Description: The 2704-C Building was demolished in 1998. The area where the french drain was located is now within a larger gravel area that is posted Underground Radioactive Material (URM). The drain is no longer visible at the location described. The drain could be covered with gravel or by the two dumpsters located in the area. There is a possibility that this site is the same site as that identified in HW-22955 as a quench tank. The description follows. Steam condensate drained to a quench tank at the southwest corner of the building (2704C). Sanitary waste drains through a 10.2 centimeter (4 inch) cast iron line running beneath the floor slab from the toilet room to a point 1.5 meters (5 feet) west of the building where it connects to a 10.2 centimeter (4 inch) tile drain. The overflow from the quench tank also flows into this tile drain which runs to the sanitary waste disposal field. The sanitary waste disposal field is part of the 2607-E7 Septic System. (Drawings H-2-4033, H-2-4012, and H-2-4013 identify a quench tank. Drawing H-2-77665 identifies a french drain).

Location: This site is located in 200 East. It is located at the southwest corner of the 2704-C Building.

Process Description: The 2704-C building was originally built in 1949 to support the Hot Semiworks operations. It was a one story wooden structure, on a cement slab foundation, that contained the security office (Gate House), a lunch room and a toilet. Building steam condensate drained to a quench tank located at the southwest corner of the building. During the 1980s, 2704C housed the 200 East Tank Farms Health Physics (HPT) Offices. Prior to demolition by Bechtel Hanford Inc. (BHI), the building was designated a contaminated facility.

Related Sites/ Structures: The site was related to the 2704-C, Office and Gate House. The pipeline associated with this french drain is sitecode 200-E-250-PL. The Hot Semiworks surface stabilized area is known as 200-E-41. The demolished 2704-C building and drain are adjacent to the Hot Semiworks stabilized area.

Waste Type: Steam Condensate

Waste Description: Although the drain received building steam condensate, periodically the drain was labeled with radioactive postings.

Code: 200-E BP**Classification:** Accepted**Names:** 200-E BP; 200-E Burning Pit; 200 East Burn Pit**Reclassification:** None**Type:** Burn Pit**Start Date:** 1/1/1950**Status:** Inactive**End Date:** 1/1/1970

Description: The burn pit is a large depression. There is limited growing vegetation. The surface is mostly rock and gravel. In 2010, most of the burn pit was posted as a Soil Contamination Area, due to contaminated tumbleweed fragments accumulating within the pit.

Location: The burn pit is located in the northeast corner of 200 East Area, south of 12th Street and west of Canton Ave. It is a large excavation located east of the 218-E-8 Burial Ground.

Process Description: Burn pits were typically used for disposal of non radioactive construction and office wastes. Sometimes paint, solvents and chemicals were dumped there. The pit was also used to burn tumbleweed that were collected off the 200 East Area perimeter fences. In the late 1990's, miscellaneous, non-radioactive material began to be stored inside the burn pit. Many damaged load luggers and large Basin Disposal, Inc. trash containers accumulated in the pit. Some containers were empty, but some containers had material in them. In the spring of 2010, MSA began to remove the containers from the burn pit. The containers were radiological surveyed and released. The released containers were sent off site to Basin Disposal, Inc. One large roll off container may be sent to the Environmental Restoration Disposal Facility (ERDF).

Related Sites/ Structures: The site is associated with WIDS sitecode 200-E-8 BPDS, 200-E-109 and UPR-200-E-106.

Waste Type: Chemicals
Waste Description: This site received construction and office waste 1,500 cubic meters (1,960 cubic yards), paint wastes, and chemical solvents 1,000 cubic meters (1,300 cubic yards).

Waste Type: Asbestos (friable)
Waste Description: A site visit in 1991 noted an area within the pit posted with asbestos warning signs.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-106
Names: UPR-200-E-106; Contamination at a Burning Ground; UN-200-E-106

Code: 200-E PD **Classification:** Accepted
Names: 200-E PD; 200-E Powerhouse Ditch; 200 East Powerhouse Pond **Reclassification:** None
Type: Ditch **Start Date:** 1/1/1945
Status: Active **End Date:**

Description: The site currently consists of an open ditch, measuring approximately 580 meters, running east to west. The eastern portion of the original ditch was backfilled in 1996, due to a contamination spread. This portion is currently posted with Underground Radioactive signs.

Location: The ditch is located north of 4th Street and south of the Hot Semi-Works area.

Process Description: The ditch is fed from a 42 inch diameter underground pipeline connected to the 282-E, 283-E and 284-E facilities. The original, horse shoe shaped ditch emptied into a shallow depression east of the 200 East Area fence known as the Powerhouse Pond (see 200-E-286) from 1946 through 1953. In 1954, the powerhouse ditch effluent was redirected to B Pond. The water was discharged from the ditch to a 24 inch diameter pipeline that led to the 216-B-3C Pond. In 1997, when discharges to the 216-B-3C Pond were discontinued, the effluent from the Powerhouse Ditch was diverted to the 200 Area Treated Effluent Disposal Facility (TEDF). The 284-E powerhouse was completely shut down in 1998. After the powerhouse was shutdown, a small amount of effluent continued to be discharged to the ditch from the 282-E and 283-E water treatment facility and reservoir. During 1997 and 1998, blowdown/boiler condensate from the Johnson Controls facility also discharged to the ditch. A very small amount of effluent continues to be discharged to the pipeline (200-E-237-PL) that feeds the ditch.

Related Sites/ Structures: The ditch is associated with the 284-E Powerhouse, 283-E, 282-E, 200-E-286 swamp, UPR-200-E-100 and UPR-200-E-143. The pipeline associated with the ditch is sitecode 200-E-237-PL.

Waste Type: Process Effluent
Waste Description: The ditch received cooling water, boiler blowdown, floor drain discharge, softener regeneration effluents, filter backwash, and sedimentation basin cleanout from 282-E, 283-E and 284-E. During 1997 and 1998, a small amount of water from the Johnson Controls package boiler was discharged to the ditch. The volume of discharge has varied of the life of the ditch. Only a very small amount of water is currently discharged to the pipeline and ditch.

Code: 200-E-4 **Classification:** Accepted

Names: 200-E-4; 209-E North Dry Well; Critical Mass Laboratory Dry Well North; Miscellaneous Stream #730 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1958

Status: Inactive **End Date:** 1/1/1959

Description: The site is a 1.2 meter (4 foot) diameter dry well, covered with a yellow metal cover.

Location: The site is located approximately 7.6 meters (25 feet) north of the northwest corner of the 209-E Critical Mass Laboratory Service Building.

Related Sites/ Structures: The site is connected to 209-E Critical Mass Lab via underground piping (see sitecode 200-E-249-PL).

Waste Type: Steam Condensate

Waste Description: The waste was steam condensate from the steam trap in the valve pit plus steam condensate from the equipment room.

Code: 200-E-13 **Classification:** Accepted

Names: 200-E-13; Rubble Piles from RCRA General Inspection #200EFY95 Item #7 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: A 1995 site inspection identified this site and described it as numerous rubble piles. These piles contained inert construction debris, such as wood, asphalt, dirt, pipe and concrete. Another site visit occurred in February 1997. The following debris was identified: asphalt paving, concrete, steel pipe, rebar and PVC pipe. During a GPS survey on August 26, 1998, it was observed that debris was concentrated in piles south of an old borrow area. However, there were also isolated piles/berms of debris beyond this concentration, primarily to the west. Some scattered debris and half-buried towels or rags were observed in the borrow area. A site visit on July 26, 1999, confirmed the previous site conditions.

Location: The site is located inside 200 East Area, south of the PUREX facility. The site is north of First Street, off a dirt road approximately 220 meters (722 feet) west of the intersection of First Street and Canton Avenue.

Waste Type: Construction Debris

Waste Description: The waste contains inert construction debris that includes wood, asphalt, dirt, pipe, and concrete.

Code: 200-E-25 **Classification:** Accepted

Names: 200-E-25; 272-BB French Drain; Insulation Shop French Drain; Miscellaneous Stream #659 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1971

Status: Inactive **End Date:** 1/1/1991

Description: The french drain structure is not visible from the surface. The french drain's location is marked with an old sign, mounted on two support posts. The sign says "Asbestos Waste Disposal Site - Do No Excavate". A sign stating "200-E-25" has been attached to one of the support posts.

Location: The dry well is located approximately 6 meters (20 feet) north of the northeast corner of the 272-BB Insulation Shop.

Process Description: schedule 40 carbon steel pipe. An 0.4 meter (1.5 foot) diameter, 36 inch tall grease trap with a removable cover is located on the east side of the 272-BB building.

Related Sites/ Structures: The site is associated with the 272-BB building and the 200-E-209-PL pipeline.

Waste Type: Chemicals
Waste Description: Material used in the 272-BB Insulation Shop that possibly could have been flushed into the sink or floor drain include: Calcium Silicate, Fiberglass, Silicate, "Airball" (an insulation cover material) and latex paint. Prior to 1988, it is possible that organic chemicals, oils and grease may have been introduced into the french drain. A sign posted at the site indicates the presence of asbestos, which is regulated as a hazardous substance under CERCLA.

Code: 200-E-26 **Classification:** Accepted

Names: 200-E-26; Diesel Fuel Contaminated Soil; Heavy Equipment Storage Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is an area that was used as an equipment staging area for trucks, backhoes, compressors, and other heavy equipment. As of October 2001, the site no longer shows visual evidence of oil contaminating the soil. In 1996, the soil had an odor like diesel fuel, but this was not reported in 2001. The contamination noted in 1996 appeared to be spotty. An electrical receptacle marks each end of the site.

Location: The site is located in the 200 East area, south of B Plant, within the former ICF Kaiser Construction Complex.

Release Description: Heavy equipment was stored in this area for several years. The contaminated soil is most probably due to equipment leakage.

Waste Type: Soil
Waste Description: The soil at the site is contaminated with oil and diesel fuel.

Code: 200-E-29 **Classification:** Accepted

Names: 200-E-29; Unplanned Release from 241-ER-152 Diversion Box **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a large, irregular shaped, posted Underground Radioactive Material (URM) area. A smaller triangular shaped URM area is located adjacent to the east shoulder of Atlanta Ave., northwest of the larger, stabilized 200-E-29 area. Another small URM area is located adjacent to a row of conex boxes, east of the larger stabilized area.

Location: The site is located south of 221-B, south of 7th Street and east of Atlanta Ave. It surrounds the 241-ER-152 Diversion Box.

Related Sites/ Structures: The site is associated with the 241-ER-152 Diversion Box.

Waste Type: Animal Waste

**Waste
Description:**

Code: 200-E-43 **Classification:** Accepted

Names: 200-E-43; Regulated Equipment Storage Area; Tank Car Storage Area; TC-4 Spur Tank Car Storage Area **Reclassification:** None

Type: Storage **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of a chain link fenced portion of the TC-4 Spur located northwest of the PUREX facility. The site was used to store railroad tank cars containing liquid radioactive material that require controls due to radiological dose rate conditions. The fence gate is locked. The area had been posted as a Radioactive Material Area (RMA) and an Underground Radioactive Material area (URM). However, in January 1999, it was only posted as an Underground Radioactive Material area. It is also posted with "Danger- Unauthorized Personnel Keep Out" signs. The ties between the rails are covered with gravel.

Location: The site is located inside 200 East Area, north of 4th Street.

Release Description: On December 17, 2010, approximately 576,000 gallons of potable water discharged to the ground during a construction water line tie in activity. The water flowed south, from the line break and flooded a portion of the TC-4 Spur Railcar Storage Area and the UPR-200-E-88 stabilized railroad track. Although no railcars are being stored here, the area is still fenced and radiologically posted.

Process Description: The fenced area was used to stage railroad tank cars that transported liquid waste to the 204-AR waste unloading facility.

Related Sites/ Structures: The site is associated with the TC-4 Railroad Spur and UPR-200-E-88.

Code: 200-E-53 **Classification:** Accepted

Names: 200-E-53; Above Ground Storage Area; Contaminated Zone Adjacent to 218-E-12B and 218-E-8; Overground Storage Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is an irregular, wedge shaped area with a rope barrier and posted with Soil Contamination signs.

Location: The site is located adjacent to and east of 218-E-12B Burial Ground and adjacent to and south of 218-E-8 Burial Ground inside 200 East Area.

Process Description: Rockwell document RHO-CD-1048 and photographic documentation from 1982 indicate this area was used to store contaminated equipment.

Related Sites/ Structures: This site is associated with UPR-200-E-50 and UPR-200-E-62.

Waste Type: Soil

**Waste
Description:**

Code: 200-E-56 **Classification:** Accepted**Names:** 200-E-56; 241-C Waste Line Leak Adjacent to 201-C; Waste Line Leak #1 **Reclassification:** None**Type:** Unplanned Release **Start Date:****Status:** Inactive **End Date:****Description:** The area adjacent to the 201-C Building has been surface stabilized with flyash. The stabilized area has been given the WIDS Site code 200-E-41 and is posted as an Underground Radioactive Material area. The release site is not separately marked or posted, and may be combined with 200-E-41.**Location:** The waste line leak was adjacent to the east side of the 201-C Building.**Release Description:** HW-52860 states that teflon flange gaskets on the stainless steel underground waste line from 201-C to 241-C Tank Farm developed leaks. The leaks caused the underground area next to the east side of the 201-C Building and an underground area near the east facility fence to become contaminated (see 200-E-57). Radiation readings in 1957 were greater than 100 rad per hour at a depth of 3.66 meters (12 feet) adjacent to the 201-C Building and near the fence. The underground waste line was abandoned and by pass sections installed. New sections of pipeline were installed south of the leaking sections.**Process Description:** The Hot Semiworks Facility was constructed in 1949. The facility was a pilot plant for the testing of the REDOX and PUREX plutonium separation processes from 1952 through 1957. The facility pilot tests used irradiated fuels. The facility was placed in standby status in 1957. In 1961 the plant was converted for the strontium recovery process of waste stored in tank farms. The Hot Semiworks facility permanently shut down in 1967. Decommissioning began in 1983 and was completed in 1987.**Related Sites/Structures:** The site is associated with 200-E-57, surface stabilized area 200-E-41 and pipelines 200-E-149-PL and 200-E-257-PL.**Waste Type:** Process Effluent**Waste Description:** A leaking underground waste line caused the soil beneath the line to become contaminated. The pipeline carried waste from the 201-C Building to the 241-C Tank Farm. Maximum contamination levels in 1957 were greater than 100 rad per hour.

Code: 200-E-57 **Classification:** Accepted**Names:** 200-E-57; 241-C Waste Line Leak East of 201-C; Waste Line Leak #2 **Reclassification:** None**Type:** Unplanned Release **Start Date:****Status:** Inactive **End Date:****Description:** The area around the Hot Semiworks Facility has been surface stabilized with flyash. The stabilized area is known as 200-E-41 and is posted with Underground Radioactive Material signs. This release site is separately not marked or posted, and may be combined with 200-E-41.**Location:** This release occurred at an underground waste line, located east of the 201-C Building, adjacent to the east Semiworks fence. The fence no longer exists.**Release Description:** HW-52680 states that teflon flanges on the 5-centimeter (2-inch) stainless steel underground

Description: waste line from 201-C to the 241-C Tank Farm leaked and caused the soil beneath the line to become contaminated. One leaking flange was located near the Semiworks fence. The attached sketch indicates an underground contaminated area measuring 9 meters (30 feet) long. Radiological readings in 1957 ranged from 6 rad per hour at a depth of 0.3 meters (1 foot) to greater than 100 rad per hour at a depth of 4.5 meters (15 feet) at this location. The document states the line also leaked in an area adjacent to the east side of the 201-C Building (see 200-E-56). The underground waste line was abandoned and bypass sections installed. New sections of pipeline were installed south of the leaking sections.

Process Description: The Hot Semiworks Facility was constructed in 1949. The facility was a pilot plant for the testing of the REDOX and PUREX plutonium separation processes from 1952 through 1957. The facility pilot tests used irradiated fuels. The facility was placed in standby status in 1957. In 1961 the plant was converted for the strontium recovery process of waste stored in tank farms. The Hot Semiworks facility permanently shut down in 1967. Decommissioning began in 1983 and was completed in 1987.

Related Sites/ Structures: The site is associated with 200-E-41 and 200-E-56.

Waste Type: Process Effluent

Waste Description: A leaking underground waste line caused the soil beneath the line to become contaminated.

The pipeline carried waste from the 201-C Building to the 241-C Tank Farm. Maximum contamination levels in 1957 were greater than 100 rad per hour.

Code: 200-E-58 **Classification:** Accepted

Names: 200-E-58; 216-A-5 Neutralization Tank; 216-A-5 NU; 270A; IMUST; Inactive Miscellaneous Underground Storage Tank; Tank A5 **Reclassification:** None

Type: Neutralization Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1987

Description: The site is an underground tank used to neutralize acidic waste prior to disposal. A 101-centimeter (40-inch) riser is visible at the surface. The cylindrical tank sits vertically on a concrete pad. The tank is constructed of welded stainless steel and has a capacity of approximately 28,400 liters (7,500 gallons). A 20-centimeter (8-inch) inlet pipe enters from the north near the base of the tank. The inlet connects into distribution piping constructed of 20-centimeter (8-inch) stainless steel pipe welded into a cross with 1.9-centimeter (3/4-inch) holes drilled at 23-centimeter (9-inch) intervals. A 20-centimeter (8-inch) outlet pipe exits to the south near the top of the tank. A 101-centimeter (40-inch) riser extends 30 centimeters (12 inches) above the surface. The "charging riser" is for adding limestone to the tank to act as a neutralizing agent.

Location: The tank is located south of PUREX, inside the security fence. It is located south of the 295-AB building, north of the 216-A-5 Crib and northwest of the 216-A-10 Crib.

Process Description: Acidic liquid waste entered the tank from the bottom and was forced upward through a bed of limestone. Interaction with the limestone neutralized the waste prior to overflow through the outlet pipe. The neutralized waste was discharged to a crib.

Related Sites/ Structures: The site is related to the 202-A Building (PUREX Canyon), the 216-A-5 Crib, and the 216-A-10 Crib. The pipelines from PUREX to the neutralization tank and from the neutralization tank to the 216-A-5 Sample Pit #4 are described in 200-E-241-PL.

Waste Type: Process Effluent

Waste Type: PROCESS EFFLUENT

Waste Description: The tank was used to neutralize acid waste from PUREX prior to ground disposal. From 1955 to 1961, the neutralized waste was discharged to the 216-A-5 Crib. From 1961 to 1987 the neutralized waste was discharged to the 216-A-10 Crib.

Code: 200-E-68 **Classification:** Accepted

Names: 200-E-68; 291A Control House Steam Condensate; Injection Well (L); Miscellaneous Stream #59 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 1.2 meter (4 foot) diameter drain with a metal cover. Several disconnected, asbestos covered steam lines hang above it.

Location: The site is located south of PUREX, between the 291-A stack exhaust fans and the 292-AB stack building. It is on the southeast corner of 291-A building. It is located inside a Contaminated Area, which surrounds the 291-A building and stack structures.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 291-A control house.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate, but is located inside a posted Contamination Area.

Code: 200-E-103 **Classification:** Accepted

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site area is covered with gravel and currently posted with Underground Radioactive Material signs.

Location: The site is located on the south side of the 202-A building, inside the security fence.

Process Description: The site is an area contaminated by many unplanned releases that occurred over time during facility operation.

Related Sites/ Structures: The site is associated with 202-A, 291-A and the 241-A-151 Diversion Box. It is also associated with multiple Unplanned Releases that occurred in the area. Other sites inside this area stabilized with gravel include: 216-A-2, 216-A-4, 216-A-5, 216-A-21 and 216-A-31.

Waste Type: Soil

Waste Description: The ground around the PUREX facility was contaminated from various sources during years of

Effluent Retention Facility. The posted areas size and shape varies often, with additional radiological surveys.

Related Sites/ Structures: UPR-200-E-92 and UPR-200-E-93 reported contaminated tumbleweed fragments along the east perimeter fence of 200 East area in 1980. The tumbleweeds reported in both UPR-200-E-92 and UPR-200-E-93 were removed from the fenceline in 1981. It is also associated with burial ground 218-E-12b, which has been considered a major source of the contaminated tumbleweeds.

Waste Type: Vegetation

Waste Description: Most of the contamination identified is tumbleweed and tumbleweed fragments.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-92

Names: UPR-200-E-92; 216-E-20; Ground Contamination Outside 200 East Fence; UN-200-E-92; UN-216-20; UN-216-E-20; UN-216-E-92

Code: UPR-200-E-93

Names: UPR-200-E-93; UN-216-E-21 Ground Contamination Along 200 East Area fence

Code: 200-E-115

Classification: Accepted

Names: 200-E-115; Contamination Area East of 241-C Tank Farm

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site had been a posted Contamination Area surrounded with light posts and chains. Large weeds were growing inside the posted area and there are several radiation flags visible inside the posted area. In June 2004, the site was stabilized with a bio-barrier and gravel. The area was reposted as an Underground Radioactive Material area.

Location: The site is located east of the 241-C Tank Farm, south of 8th Street, across an unnamed gravel road.

Related Sites/ Structures: The site may be related to UPR-200-E-91.

Waste Type: Soil

Waste Description: The contamination consisted of contaminated soil specks and contaminated vegetation .

Code: 200-E-117

Classification: Accepted

Names: 200-E-117; Contamination Zone South of B Plant

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is a small, posted Contamination Area. Inside the chained area, two steel pipes extend approximately 0.6 meters (2 feet) above the ground surface. The pipes have valves on them.

Location: The site is located adjacent to the steam line, south of the 292-B Building and the 291-B Stack.

Process Description: According to H-2-44501, Sheet 85, a raw water line extends southward from the 292-B Building and connects to a 30 centimeter (12 inch) raw water line. The water line on the drawing is in the same location as the valves inside the Contamination Area.

Waste Type: Soil
**Waste
Description:**

Code: 200-E-121 **Classification:** Accepted

Names: 200-E-121; Soil Contamination Area East and West of Baltimore Avenue **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a long, narrow area along the east side of Baltimore Avenue marked with metal posts and chain with Soil Contamination Area signs and two smaller areas on the west side of Baltimore Ave., also posted with Soil Contamination Area signs. The power poles inside the posted area are marked with yellow Fixed Contamination signs.

Location: The site is located inside 200 East Area, south of 12th Street. One part is located east of Baltimore Avenue, north of 241-B Tank Farm. Two smaller areas are on the west side of Baltimore Avenue, on the east side of the 241-BY Tank Farm.

Waste Type: Soil
**Waste
Description:**

Code: 200-E-123 **Classification:** Accepted

Names: 200-E-123; Contamination Area South of 216-B-2 Stabilized Ditches **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: In 2001, the area was covered with clean backfill material and downposted to an Underground Radioactive Material Area. The site had been surrounded with light duty steel posts and chain and was originally posted as a Soil Contaminated Area. No significant vegetation was observed on the site. In 2001, the area was covered with clean backfill material and downposted to an Underground Radioactive Material Area.

Location: The site is located just south of 216-B-2-3 ditch, on the gravel road where the power lines cross the road between 207-B and C Tank Farm.

**Release
Description:** The source of the contamination is unknown.

Waste Type: Soil
**Waste
Description:**

Code: 200-E-124 **Classification:** Accepted

Names: 200-E-124; URM on East Side of 275-EA **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is posted as an Underground Radioactive Material Area with steel posts. The site has

been stabilized with approximately 0.3 meters of clean soil. A few tumbleweeds were observed growing on the site. Railroad tracks run through the site and are buried under the stabilization soil. The contamination area is where railroad cars were parked and offloaded into the 275-EA Building.

Location: The site is locate adjacent to the east side of the 275-EA building. The 275-EA building is located between PUREX and 4th Street.

Waste Type: Soil

Waste

Description:

Code: 200-E-125

Classification: Accepted

Names: 200-E-125; Contamination Area Northwest of 244-AR Building

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is posted as a Contamination Area with light duty posts and chain. The surface is very sandy soil. No vegetation was observed.

Location: The site is located northwest of the 244-AR Building, northeast of the 200-E Carpenter Shop and South of the 2237-E Building (Electrical Shop).

Waste Type: Soil

Waste

Description:

Code: 200-E-128

Classification: Accepted

Names: 200-E-128; Radioactive Contamination "Hot Spot" Under Gravel Road

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The area where the contamination is located is marked with two Underground Radioactive Material signs, on steel posts. The posts are located on the north and south sides of the road. The contamination is located between the signs, under the surface of the gravel road.

Location: The site is located on an unnamed gravel road east of the 207-B Retention Basin and south of the 216-B-2-3 Ditches.

Process Description: The roads inside 200 East and West Areas are routinely surveyed by a truck mounted with radiation detectors. The detectors are equipped with an alarm that makes an audible sound to alert the driver if radiation above a predetermined limit is detected.

Waste Type: Soil

Waste

Description:

Code: 200-E-129

Classification: Accepted

Names: 200-E-129; Stabilized Area on East Side of B Plant Railroad Cut

Reclassification: None

Process Description: The unit is a french drain that received condensate from the Critical Mass Lab HEPA filters and heat exchange system.

Related Sites/Structures: The site is associated with the 209-E Critical Mass Laboratory. The pipelines to the french drain are described in sitecode 200-E-247-PL.

Waste Type: Steam Condensate

Waste Description: The waste at the unit includes steam condensate through a collapsed rusted pipe from the Heat Exchanger located in Room 11 of 209-E and a stainless steel pipe from the clean side of the HEPA filters.

Code: 209-E-WS-3 **Classification:** Accepted

Names: 209-E-WS-3; Critical Mass Laboratory Valve Pit and Hold Up Tank (209-E-TK-111); IMUST; Inactive Miscellaneous Underground Storage Tank **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1989

Description: The Valve Pit has a steel lid and is posted (as of March 2001) with Radioactive Material, Internally Contaminated Systems Located Within, and Confined Space, Dome Loading, Ignition Control and IMUST warning signs. On 10/10/2011 the task of disconnecting, cutting and plugging five lines in the 209E Valve Pit (209-E-WS-3) that isolated Tank-111 was completed. The Valve Pit metal lid will be placed back on it. The pit will not be back-filled with gravel, because there are other lines still in the valve pit associated with the tank farms and not part of this work scope.

Location: The tank is located underground, near the south end of the 209-E Facility. The north edge of the tank is about 3 ft (0.9 m) south of the south wall of the 209-E Building's Critical Assembly Room and abuts the east side of the exhaust equipment pad.

Process Description: A 189 liter (50 gallon) holding tank (209-E-TK-111) is located under the valve pit. The tank was used as a drain tank. The tank held the condensate prior to being released to the cribs. The tank was routinely sampled for plutonium content to determine that the contents were below crib discharge levels. Present contents of the tank are estimated to consist of residual water from condensate collection, containing only low levels of plutonium. After sampling, the contents was discharged to the 216-C-7 crib. The 216-C-7 crib was placed on standby in 1983.

Related Sites/Structures: There is a thin, cadmium-lined Hold-Up Tank, 209-E-TK-111, associated with and under the Valve Pit. The pipelines to the valve pit are described in sitecode 200-E-248-PL.

Waste Type: Process Effluent

Waste Description: The Semi-Works Source Aggregate Area Management Study Report states that no wastes are present in the Critical Mass Laboratory Valve Pit. However, radioactive contamination is present in the valve pit sump, although no specific waste inventories for this unit were found. The Hold Up tank was routinely sampled to verify plutonium levels were below limits prior to discharging the contents to the crib.

This Site has the Following SubSites:

Code: 209-E-WS-3:1

Names: 209-E-WS-3:1; 209-E-TK-111 Hold Up Tank

Process Description: The tank was used to neutralize acidic process condensate from the 221-B and the 224-B facilities, via the 241-ER-151 Diversion Box (lines V219, V225, 9719, 9653, 9808). Condensate entered the tank at the bottom and flowed upward through the limestone to an outlet pipe located 2.4 meters (8 feet) above the tank bottom. The tank contained a limestone bed through which the condensate percolated, reacted, and then overflowed to the 216-B-12 Crib. The tank had a 100 centimeter (40 inch) diameter chute and a 15 centimeter (6 inch) diameter riser extending to the surface from the stainless steel below grade tank.

Related Sites/Structures: It is associated with 270-E, the 221-B, 224-B Buildings and the 216-B-12 Crib. UPR-200-E-64 documents that ants brought contamination to the surface in the vicinity of the 270-E Tank and caused contamination to spread.

Waste Type: Chemicals

Waste Description: A 1974 report indicated the surface of the sludge was located at 2.27 meters (7.58 feet). No liquid was visible at this time. Sludge volume was estimated to be 14,440 liters (3,800 gallons). Radiation readings were less than 100 counts per minute direct and smearable, and less than 0.5 millirad/hour at the risers. Waste in this tank should include: limestone, process condensate precipitates, salts and residual process condensates. The process condensate that passed through this tank contained an average of 0.015 grams per gallon of uranium, 2.6 E-7 grams per gallon of plutonium and 1.8 E-6 curies per gallon of beta emitters.

Code: 299-E24-111	Classification: Accepted
Names: 299-E24-111; Experimental Test Well Site; Lysimeter Test Site; Miscellaneous Stream #803	Reclassification: None
Type: Injection/Reverse Well	Start Date: 9/22/1980
Status: Active	End Date: 1/1/2000

Description: The site is an injection well surrounded by 32 observation wells. The 299-E24-111 injection well head is located inside a small posted Underground Radioactive Material area. There is a small Soil Contamination Area (SCA) located southwest of the well. The SCA is where the 5,700 liter (1500 gallon) above ground solution tank (connected to the well) had been located.

Location: The site is located southwest of the PUREX facility and west of the 216-A-38-1 Crib.

Process Description: In 1980, uniform solutions of calcium chloride, calcium nitrate, and selected tracers were placed into the above ground mixing tank on a weekly basis and injected into the well. The 32 observation wells monitored the injected material. The tracers included sorbing and nonsorbing ions. Calcium was added at a concentration of 0.01 normal as 0.005 normal calcium nitrate plus 0.005 normal calcium chloride to reduce permeability changes of the sediments during injection, and to provide the nonsorbing ions nitrate and chloride. Cesium-134 is a gamma emitter and undergoes strong sorption by the sediments. Strontium-85 was chosen because it is a gamma emitter and is moderately sorbed by sediments. Each injection consisted of filling the holding tank, adding the tracers, mixing the water and tracers, and then injecting the solution. Water for each of the 10 weekly injections was transported to the site from a nearby safety shower in 1900 liter (500 gallon) vinyl bags. From the bags, 3800 liters (1000 gallons) of water was metered into a 5700 liter (1500 gallon) tank. Calcium salts and additional sorbing tracers, barium and rubidium, were dissolved in two 50 liter (13 gallon) carboys at the injection site. The carboys were rinsed and the rinsate was added to the tank. The radiological tracers strontium-85 and cesium-134 were delivered for each weekly injection as a 20 milliliter solution. The glass vial containing the tracers arrived at the site in a lead container called a pig. The pig was placed in the tank on a rack before opening and removing the vial. The vial was handled with modified tongs. The cap was unscrewed from the vial, the vial contents poured into the calcium solution in tank, and the vial and cap rinsed using a polyethylene wash bottle.

Washing continued until less than 300 counts per minute were observable with a handheld GM probe in contact with the vial and cap. For the first three tanks of solutions, the contents were circulated in tank until the solution was uniform, as evidenced by constant gamma activity at all points on the tank exterior. It was found that a uniform count rate was obtainable within 5 minutes after starting circulation, but mixing was continued for 2 hours. For the remaining injections, the tracer and calcium solutions were added after 1900 liters (500 gallons) of water was metered into the tank. Adding the final 1900 liters (500 gallons) induced enough mixing to obtain a uniform count rate at the tank surface. Both the circulation and partial filling method appeared to provide adequate mixing. In May and June 2000, a new injection well was placed near the original injection well, but outside the posted Underground Radioactive Material area. The new well was injected five times. The third injection contained a potassium bromide tracer. Four soil cores were collected around the new injection well. Each core sample was 18 meters (59 feet) deep.

Related Sites/ Structures: The injection well was connected to a 5,700-liter (1,500-gallon) above ground mixing tank. The injection well is surrounded by eight concentric rings of observation wells. There are a total of 32 observation wells. The observation wells are each 15-centimeter (6-inch) diameter steel casings, 19.8 meters (65 feet) long. These observation wells are identified as 299-E24-76 through 299-E24-107. The injection well is constructed of a 4.6-meter (15-foot) long, 2.5-centimeter (1-inch) diameter pipe inside a 4.6-meter (15-foot) casing that is welded together at the lower end. This assembly is cemented inside a 4.6-meter (15-foot), 15-centimeter (6-inch) diameter Schedule 40 steel well.

Waste Type: Chemicals

Waste Description: Eleven 3,780-liter (1,000-gallon) injections of uniform solutions of calcium chloride, calcium nitrate were made into the injection well. Eight injections contained selected radioactive tracers (cesium-134 and strontium-85). Three injections did not contain tracers. In 1995 the injection well was surveyed with a Radiologic Logging System (RLS) down-hole logging probe. No Strontium-85 was identified. Residual cesium-134 peaks were identified at depths between 4.9 and 5 meters (16 and 16.5 feet). The fact that cesium-134 was detected 15 years after injection is an indication of the tracer's high sorption potential. The maximum activity was 0.04 picocuries per gram (pCi/g) at 5 to 5.2 meters (16.5 to 17 feet) below grade level. PNNL scheduled an additional injection experiment at this site in 2000 that added another injection well (10 meters [30 feet] deep) near the center of the cluster, injected a potassium bromide tracer and collected soil cores. Each of the five injections was equal to 4000 liters.

Data were obtained by lowering sensors to the desired depth in observation wells. Sensors used included neutron-neutron moisture probes, geiger-Muller (GM) probes, gamma energy analysis (GEA) probes, and gamma-gamma probes.

Code: 2607-E3	Classification: Accepted
Names: 2607-E3; 2607-E3 Septic System; 2607-E3 Septic Tank and Drainfield; TFS of 218-E-4; Tile Field South of 218-E-4	Reclassification: None
Type: Septic Tank	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1997

Description: The site is a septic tank and drainfield. It is surrounded with a chain and marked with a sign that reads Sanitary Sewer/Drain Field. The septic tank is constructed of reinforced concrete. The tank is 8.7 meters (28 feet 8 inches) long, 2.7 meters (9 feet) wide, and 3.8 meters (12 feet 6 inches) deep (interior dimensions). The tank had a design capacity of 38,680 liters (10,220 gallons) based on a user capacity of 292 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground

surface. The tank was accessed through three 0.9 meter (3 foot) manholes. The drainfield is comprised of at least 712 meters (2,336 feet) of vitrified clay pipe or drain tile (at least 2.4 meters [8 feet] per capita). The laterals are open jointed and are spaced 2.4 meters (8 feet) apart.

Location: This unit is located approximately 100 meters (400 feet) north of the 221-B Building. The drainfield is located north of the septic tank and south of the 218-E-4 Burial Ground.

Process Description: The 2607-E3 Septic Tank and Drainfield were designed to accept, treat, and dispose of sanitary sewer effluent from the buildings in the B Plant complex.

Related Sites/ Structures: The 2607-E3 Septic System was associated with B-Plant facilities.

Waste Type: Sanitary Sewage

Waste Description: This site received sanitary wastewater and sewage from B Plant facilities at an estimated rate of 509 cubic feet (14.4 cubic meters) per day. The septic tank was abandoned in 1997. No information was provided related to sampling of the tank contents. DOE/RL-92-05 states that the septic tank and tile field are not known to contain radioactive or hazardous waste.

The Following Sites Were Consolidated With This Site:

Code: TFS OF 218-E-4

Names: TFS OF 218-E-4; Tile Field South of 218-E-4; 2607-E3 Tile Field

Code: 2607-E5

Classification: Accepted

Names: 2607-E5; 276-C, 209-E and 2718-E Septic Tank; 209-E Septic Tank

Reclassification: None

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: In July 2011, the septic tank was properly abandoned per WAC 246-272A-0300. This system included a single compartment tank with a dosing system and a leaching trench. An abandoned tile field, which was replaced by the sanitary leaching trench, is also included with this site. This septic system received sanitary wastewater and sewage from the Critical Mass facilities near 209-E.

Location: This unit lies north of the 209-E Building and east of the 2607-C Sanitary Crib.

Process Description: The connection to 2718E was investigated in 2010. After reviewing available drawings and Ground Penetrating Radar scan results, no sewer line from 2718-E to 2607-E5 could be found. Field walk downs verified there are no restrooms, showers, sinks or floor drains in 2718-E.

WHC-SD-LL-SP-001 indicated the 2607-E5 Septic Tank and associated leaching trench received sanitary sewer effluent from the 209-E, the 2704-C, 276-C, and the 2718-E Buildings. It states that a construction design was approved in 1995 to add more facilities to the 2607-E5 system, but the project was cancelled. Other documentation and field investigations dispute the accuracy of the document, related to the facilities served by 2607-E5. Drawing M-2904-E, Sheet 27 does not show enough detail to make a determination. H-2-4033 shows that 276-C had no sanitary waste. All liquid waste from this facility went to the 216-C-3 crib. Revision 7 of H-2-4033 (1963) revised the drawing to include the abandoned tile field and the two small inline septic tanks (2607-E7 and 2607-E). (The WIDS numbers for these two tanks are 2607-E7A and 2607-E7B). The two smaller tanks were probably added when 209-E (Critical Mass Laboratory) was tied into the system.

Related Sites/ Structures: The 2607-E5 Septic Tank is associated with the 209-E, the 2704-C and the 2718-E Buildings.

Structures: Original construction of the tank was for buildings 2704-C and 2707-C. Later modifications added two additional septic tanks, 2607-E7 (WIDS 2607-E7A), 2607-E (WIDS 2607-E7B), and the leaching trench. During the history of this system, mobile offices have been connected to the system. Two examples were the addition of MO-337 and MO-543. These mobile offices have since been moved.

Waste Type: Sanitary Sewage

Waste Description: WHC-SD-LL-SP-001 states this system received sanitary wastewater and sewage from the 209-E, the 2704-C, and the 2718-E Buildings at an estimated rate of 78 cubic feet (2.21 cubic meters) per day. Originally, the 2607-E5 tank serviced the 2707-C Change House. The change house had both a toilet and shower used by personnel working within the Hot Semiworks facilities. There may be a potential for radiological contamination within the 2607-E5, 2607-E7 (WIDS 2607-E7A), 2607-E (WIDS 2607-E7B), Sanitary Leaching Trench, or the Abandoned Tile Field. A 2010 drawing review and facility walkdown found no drains, sinks or toilet facilities in the 2718E building.

Code: 2607-E6	Classification: Accepted
Names: 2607-E6; 2607-E6 Septic Tank and Tile Field	Reclassification: None
Type: Septic Tank	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1997

Description: The site is a septic tank and drainfield. The drain field is surrounded by a wooden fence. The surface is vegetated with brush.

Location: This unit is located inside 200 East Area, north of 4th Street and northwest PUREX. It is between two railroad spurs.

Process Description: The unit received sanitary waste from MO405 and the PUREX facility.

Waste Type: Sanitary Sewage

Waste Description: The site received sanitary wastewater and sewage from MO-405 and the PUREX facility. The estimated rate of waste generation is 43.5 cubic meters per day.

Code: 2607-E7A	Classification: Accepted
Names: 2607-E7A; 2607-E7	Reclassification: None
Type: Septic Tank	Start Date: 1/1/1963
Status: Inactive	End Date:

Description: In July 2011, the septic tank was properly abandoned per WAC 246-272A-0300. The septic tank received sanitary wastewater and sewage. This tank is a 1.7 meters (66 inches) by 2.7 meters (105 inches) precast concrete septic tank with a single 61 centimeters (24 inch) diameter cover. The tank is inline with the 2607-E5 septic tank and the 2607-E (WIDS 2607-E7B). The septic tank drained to the sanitary leaching trench.

Location: This system lies north of the 209-E Building and west of the 2607-E5 Septic Tank.

Process Description: The 2607-E7A Septic System and the associated leaching trench were designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location).

Related Sites/Structures: The 2607-E7A Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7B

septic tanks and a leaching trench.

Waste Type: Sanitary Sewage
Waste Description: The 2607-E7A Septic System receives sanitary wastewater and sewage at an estimated rate of 58 cubic feet (1.64 cubic meters) per day.

Code: 2607-E7B **Classification:** Accepted
Names: 2607-E7B; 2607-E7B Septic System; 2607-E7 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1963
Status: Inactive **End Date:**

Description: In July 2011, the septic tank was properly abandoned per WAC 246-272A-0300. This septic tank received sanitary wastewater and sewage. This tank is a 1.7 meters (66 inches) by 2.7 meters (105 inches) precast concrete septic tank with a single 61 centimeters (24 inch) diameter cover. The tank is inline with the 2607-E5 septic tank and the 2607-E7 (WIDS 2607-E7A). The septic tank drained to the sanitary leaching trench.

Location: This system lies north of the 209-E Building and west of the 2607-E5 Septic Tank.

Process Description: The 2607-E7B Septic System and the associated leaching trench were designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location).

Related Sites/ Structures: The 2607-E7B Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7A septic tanks and a leaching trench.

Waste Type: Sanitary Sewage
Waste Description: The 2607-E7B Septic System receives sanitary wastewater and sewage at an estimated rate of 58 cubic feet (1.64 cubic meters) per day.

Code: 2607-E9 **Classification:** Accepted
Names: 2607-E9; 2607-E9 Septic System; 242B/BL Septic Tank and Drain Field **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1951
Status: Inactive **End Date:**

Description: This 1,900-liter (500-gallon) septic tank received sanitary wastewater and sewage from the 242-B and the 242-BL Buildings. This system has an associated drain field. It was abandoned and the tank filled with sand. The site is in a contamination area. A brief visit was made to the site in February 2000 to find the drainfield and to try to improve the mapping of the site. A "Drainfield" sign was found on the ground on the eastern side of the contamination area that surrounds the site. The former extent of the drainfield can be approximated using fence posts inside the contamination area (some of which still have chain attached), fallen chain on the ground plus the fence posts making up the eastern boundary of the contamination area. No access ports, lids or risers associated with the septic tank were visible. Evidence of the septic tank may have been obscured by tumbleweeds growing in the center of the contamination area near the drainfield.

Location: This unit lies north of the 207-B Retention Basin and east of the 242-B Building.

Process Description: The 2607-E9 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 242-B and the 242-BL Buildings.

Related Sites/ Structures: The 2607-E9 Septic Tank is associated with a drain field and the 242-B and the 242-BL Buildings.

Waste Type: Sanitary Sewage

Waste Description: The 2607-E9 Septic Tank received sanitary wastewater and sewage at an estimated rate of 0.71 cubic feet (0.02 cubic meters) per day.

Code: 2607-E12 **Classification:** Accepted

Names: 2607-E12; 2607-E12 Septic System **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The septic system consists of the original 242-A septic tank and seepage pit (see subsite 1), two newer septic tanks and two drain fields (see subsite 2) that service multiple buildings. The 5,000 gallon (18,927 liters) tank was converted to a dosing chamber when the new 10,000 gallon (37,854 liters) septic tank was installed approximately 45 feet (13.7 meters) to the south. The first drain field is located west of the 207-A Retention Basins. It was replaced with a trench-like drainfield located approximately 400 feet (122 meters) east of the septic tanks and east of the 207-A Retention Basins.

Location: The original 242-A septic tank and seepage pit is located on the 242-A building parking lot. Two newer septic tanks and two drainfields are located east of Canton Avenue, north of 4th Street. The first drainfield is located west of the 207-A South retention basins. The second drainfield is located east of the retention basins and has a barricade marker fence around the large depression.

Process Description: The settling chamber (the larger southern most tank) receives the effluent first. The effluent then goes to the dosing chamber (smaller northern tank) which is connected by underground pipeline to the trench-like drainfield.

Related Sites/ Structures: Buildings serviced by this system are: 272-AW, MO-266, MO-268, MO-267, MO-393, MO-996, 241-A Tank Farm, 241-AP, and 242-A.

Waste Type: Sanitary Sewage

Waste Description: Characteristics of the sanitary waste water from the 200 Areas are considered to be similar to residential sanitary waste. There are no known process or radioactive waste streams entering the sanitary waste system.

This Site has the Following SubSites:

Code: 2607-E12:1

Names: 2607-E12:1; Original Septic Tank and Seepage Pit

Code: 2607-E12:2

Names: 2607-E12:2; 2607-E12 Septic System

Code: 2607-E12:1 **Classification:** Accepted

Names: 2607-E12:1; Original Septic Tank and Seepage Pit **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The original Septic Tank and Seepage Pit for the 242-A evaporator building is located beneath

of the 241-BY Tank Farm. A large area of surface contamination north of 241-BY Tank Farm was later named UPR-200-E-89.

Release Description: On September 15, 1955 approximately 41,600 liters (11,000 gallons) of tri-butyl phosphate (TBP) supernate waste overflowed from the 216-BY-201 flush tank and ran over the ground toward the 216-B-43 crib. Most of the contamination was pushed into a shallow area southeast of the 216-B-43 crib and covered with 0.6 meters (2 feet) of clean dirt. The contamination left near the flush tank was covered with 3 meters (10 feet) of clean soil.

Process Description: The 216-BY-201 flush tank received tri-butyl phosphate waste via the 241-BY tank farm and then released it to the 216-B-43 through 49 cribs. The 216-B-50 crib did not receive tri-butyl phosphate waste.

Related Sites/ Structures: UPR-200-E-9 is associated with 216-BY-201 and the 216-B-43 through 50 cribs.

Waste Type: Process Effluent

Waste Description: The 216-BY-201 Flush Tank leaked supernatant waste from the tributyl phosphate (TBP) process to the ground.

Code: UPR-200-E-10

Classification: Accepted

Names: UPR-200-E-10; Contaminated Purex Railroad Spur; UN-200-E-10

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: A contamination spread occurred along the railroad tracks while transporting tube bundles from PUREX to the burial ground. The release is not separately marked or posted.

Location: The site is along the PUREX railroad right-of-way, both inside and outside the PUREX exclusion fence. The contamination inside the fence is considered part of the Railroad Cut (WIDS site code 200-E-44)

Release Description: In September 1957, contamination ranging from 5 to 20 rads/hour was spread in the craneway, canyon, railroad tunnel, and on the remote crane and railroad right-of-way during transport of two failed waste concentrator tube bundles.

Related Sites/ Structures: The site is associated with 200-E-44 (PUREX Railroad Cut).

Waste Type: Soil

Waste Description: Loose contamination from concentrator tube bundles spread from the PUREX crane, into the tunnel and onto the railroad right-of-way.

Code: UPR-200-E-12

Classification: Accepted

Names: UPR-200-E-12; Contaminated Purex Railroad Spur; UN-200-E-12

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have

been covered with dirt and posted with Underground Radioactive Material signs.

- Location:** The unplanned release effected the railroad track extending from the PUREX tunnel to an unnamed Burial Ground.
- Release Description:** On November 15, 1957, a burial box containing failed process jumpers dripped contaminated liquid while in transit to the burial ground. This resulted in spotty contamination of 40 to 1,700 millirads/hour to the railroad roadbed. Contamination also spread to the canyon deck, tunnel, and tunnel cut.
- Process Description:** Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the burial ground.
- Related Sites/ Structures:** This site is associated with UPR-200-E-11, UPR-200-E-88, 200-E-43 and 200-E-44,
- Waste Type:** Water
- Waste Description:** Contaminated liquid with readings ranging from 40 to 1,700 millirads/hour dripped on the railroad track during transport of a burial box containing failed process jumpers. The dose rate on the burial box was 450 millirads/hour at 45.8 meters (150 feet).

-
- Code:** UPR-200-E-17 **Classification:** Accepted
- Names:** UPR-200-E-17; Overflow at 216-A-22; UN-200-E-17 **Reclassification:** None
- Type:** Unplanned Release **Start Date:** 1/1/1958
- Status:** Inactive **End Date:**
- Description:** The 216-A-22 crib is marked with a single cement post and posted with Underground Radioactive Material signs. The unplanned release is not separately marked or posted. The release cannot be visually identified.
- Location:** The release effected the ground on top of the 216-A-22 Crib, located north of PUREX, north of the 203-A facility, near the 216-A-28 French Drain.
- Release Description:** Sufficient splashing occurred when the 216-A-22 Crib inlet failed, causing the ground on top of the crib to become yellow with uranium. No specific occurrence date is mentioned. HW-60807 was issued in July 1959, so it occurred prior to that date. The 216-A-22 french drain was active from 1955 through 1958.
- Process Description:** The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 liter (100,000 gallon) stain less steel tanks for UNH storage and three smaller nitric acid tanks.
- Related Sites/ Structures:** The site is associated with 216-A-22 and 203-A.
- Waste Type:** Process Effluent
- Waste Description:** The release consisted of uranium (from UNH storage) contamination on the ground surface from the failed 216-A-22 Crib inlet.

-
- Code:** UPR-200-E-19 **Classification:** Accepted

Names: UPR-200-E-19; Contamination Release at 216-A-6 Sampler; UN-200-E-19 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1959

Status: Inactive **End Date:**

Description: The unplanned release is not separately marked or posted. The 216-A-6 crib has been surface stabilized and is posted with Underground Radioactive Material signs.

Location: The release occurred adjacent to the 216-A-6 Crib. It is located east of the 202-A Building, outside the 200 East Area Perimeter fence.

Release Description: Low-level fission product seeped into the ground around the edges of the concrete pad at the 216-A-6 Proportional Sampler Pit. The release was caused by moisture dripping from the vent pipe bonnet.

Related Sites/ Structures: The site is associated with the 216-A-6 Crib.

Waste Type: Process Effluent

Waste Description: The site received low-level fission products that dripped onto the ground from the vent pipe bonnet.

Code: UPR-200-E-20 **Classification:** Accepted

Names: UPR-200-E-20; Contaminated Purex Railroad Spur; UN-200-E-20 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1959

Status: Inactive **End Date:**

Description: The site is located at the PUREX railroad right-of-way. The release is not separately marked or posted.

Location: Contamination occurred on the PUREX railroad bed and right-of-way to the Burial Ground, both inside and outside the PUREX exclusion fence. The contamination inside the fence is considered part of the PUREX Railroad Cut (Waste Information Data System [WIDS] site code 200-E-44).

Release Description: On November 20, 1959, PUREX tube bundles in transit for burial provided some spotty ground contamination.

Waste Type: Process Effluent

Waste Description: While transporting PUREX tube bundles to the burial ground via railcar, spotty contamination was found on the railroad track.

Code: UPR-200-E-21 **Classification:** Accepted

Names: UPR-200-E-21; 216-A-6 Overflow; UN-200-E-21 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1959

Status: Inactive **End Date:**

Description: The unplanned release is not separately marked or posted. The 216-A-6 Crib area has been surface stabilized and is posted as "Underground Radioactive Material."

Location: Contamination occurred adjacent to the 216-A-6 Crib. The crib is located east of the PUREX

facility, outside the 200 East Area perimeter fence.

Release Description: In February 1959, the 216-A-6 Crib overflowed and contaminated the adjacent area to 500 millirads/hour.

Related Sites/ Structures: The release is associated with the 216-A-6 crib.

Waste Type: Process Effluent

Waste Description: The release contaminated the crib surface with beta/gamma with readings to 500 millirads/hour.

Code: UPR-200-E-29 **Classification:** Accepted

Names: UPR-200-E-29; 216-A-6 Overflow; UN-200-E-29 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1961

Status: Inactive **End Date:**

Description: The 216-A-6 Crib area has been surface stabilized and is posted as "Underground Radioactive Material."

Location: The release location is in the area of the 216-A-6 Crib.

Release Description: On January 20, 1961, the 216-A-6 Crib overflowed.

Related Sites/ Structures: The site is associated with 216-A-6 Crib.

Waste Type: Process Effluent

Waste Description: The release contaminated the crib surface with beta/gamma with readings to 30 rads/hour at a distance of 1.2 meters (4 feet).

Code: UPR-200-E-33 **Classification:** Accepted

Names: UPR-200-E-33; Contaminated Purex Railroad Tracks; UN-200-E-33 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1964

Status: Inactive **End Date:** 1/1/1964

Description: A contamination spread occurred on the PUREX railroad bed and right-of-way to the burial ground. The contamination was located both inside and outside the PUREX exclusion fence. The contamination inside the fence is considered part of the PUREX Railroad Cut (Waste Information Data System [WIDS] site code 200-E-44).

Location: The release site is located at the railroad right-of-way from PUREX to the 200 East Burial Ground, adjacent to the 216-A-9 crib.

Release Description: On March 20, 1964, a leaking tube bundle burial box in transit to the burial ground contaminated a portion of the railroad right-of-way and area adjacent to the 216-A-9 Crib. The contamination spread occurred in February 1964. The February Monthly Report for 1964 (HW-81078) was issued on 3-20-64. This report states that decontamination was successful, but does not give any details of the decontamination activity.

Waste Type: Chemicals

Waste Description: A description of the waste is not available from documents. Contamination resulted from a

Status: Inactive

End Date:

Description: The location of this release is not marked or posted.

Location: The release occurred on a section of the roadway between the 241-BY Tank Farm and the burial ground. The exact location cannot be determined with existing documentation.

Release Description: On January 10, 1972, while in transit for burial, the 102-BY Pump contaminated a section of the road from the 241-BY Tank Farm to the burial ground. Contamination readings ranged from 1,000 to 100,000 counts per minute.

Waste Type: Process Effluent

Waste Description: The road contaminated with beta/gamma with readings of 1,000 to 100,000 counts per minute while transporting a pump from 241-BY-102 to the burial ground.

Code: UPR-200-E-50

Classification: Accepted

Names: UPR-200-E-50; Soil Contamination at the Overground Equipment Storage Yard; UN-200-E-50

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1974

Status: Inactive

End Date:

Description: In 1974, an area of ground contamination was identified that measured from 15 to 30 meters (50 to 100 feet) wide and 137 meters (450 feet) long south southeast of the Overground Storage Area. The release is not currently marked or posted.

Location: The release location was southeast of the Overground Radioactive Equipment Storage Yard and north of 241-C Tank Farm.

Release Description: On September 24, 1974, ground contamination was identified outside the radiation zone at the Overground Radioactive Equipment Storage Yard, north of 241-C Tank Farm. A resulting swath of ground contamination was identified with particle contamination ranging from 3,000 counts per minute to 100,000 counts per minute, decreasing in intensity and frequency with distance from the source. Follow-up surveys of the Overground Storage Area identified a possible source to be a 6-meter by 9-meter (20-foot by 30-foot) area of contaminated soil inside the radiation zone. Highly contaminated pumps (250 rad per hour) had been stored in that area with readings of 300 millirem per hour under the where pumps had been sitting. The pumps were moved to the burial ground on April 26, 1974. Due to climatic conditions when the pumps were moved, the soil beneath the pumps was not completely decontaminated. The contaminated ground beneath the pumps was covered with plastic and secured with dirt. On September 26, 1974, high winds blew the plastic cover loose, causing contamination to spread downwind of the Overground Storage Yard. An additional survey in the Overground Storage Yard identified two empty capsules with smearable contamination of 30,000 counts per minute and more soil contamination beneath the capsules reading 1.5 rad per hour. The capsules were taken to the burial ground to avoid further contamination spreads.

Related Sites/ Structures: This release is associated with 200-E-53.

Waste Type: Soil

Waste Description: Wind blew specks of contamination out of the Overground Storage Yard posted radiation zone. The source was from contaminated equipment being stored at the Overground Radioactive Equipment Storage Yard. Maximum beta/gamma readings of 3,000 to 100,000 counts/minute were found on a swath of ground south southeast of the storage area. The intensity of the radiological readings decreased with greater distance away from the source.

Waste Type: Water
Waste Description: Water dripped from a burial box containing waste was from 225-B and the 221-B canyon. The contamination consists of beta/gamma contamination, with readings to 4,000 to 20,000 counts per minute.

Code: UPR-200-E-88 **Classification:** Accepted

Names: UPR-200-E-88; TC-4 Spur Contaminated Railroad Track; UN-200-E-88. Ground Contamination Around the Western Purex Railroad Spur; UN-216-E-16; UN-216-E-88 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The unfenced portion of the spur was posted as a "Contamination Area." Additional posting on portions of the spur included "Soil Contamination Area" and "Buffer Area." The spur is tracked with the property number "F187418". The site was interim stabilized in December 1998. The stabilized area was posted as an Underground Radioactive Material area. A chain link fenced storage area is located on the north end of the spur (see site code 200-E-43).

Location: The site is located northwest of the 202-A Building at the TC-4 Railroad Spur.

Release Description: In 1981, Harold Maxfield stated that the large radiation zone associated with the TC-4 railroad spur has been incorrectly designated as an unplanned release site. The original perimeter of the zone was posted where the gamma dose rates from radioactive tank cars parked on the railroad spur would be less than 1 millirads/hour. The site in question was properly known as a Regulated Equipment Storage Area (see 200-E-43). On December 17, 2010, approximately 576,000 gallons of potable water discharged to the ground during a construction water line tie in activity. The water flowed south, from the line break and flooded a portion of the TC-4 Spur Railcar Storage Area and the UPR-200-E-88 stabilized railroad track. Although no railcars are being stored here, the area is still fenced and radiologically posted.

Related Sites/Structures: The site is associated with 200-E-43.

Waste Type: Process Effluent

Waste Description: The contamination spread consisted of radioactive particulates from contaminated railcars using the tracks. Surface radiological surveys performed in 1991 identified contamination of 20,000 to 60,000 disintegrations per minute on the railroad track near where the tank cars were being staged. South of the tank cars, along the railway, contaminated areas of 2,000 to 20,000 disintegrations/minute were also identified.

Code: UPR-200-E-89 **Classification:** Accepted

Names: UPR-200-E-89; Contamination Migration to the North, East & West of BX-BY Tank Farms; UN-200-E-89; UN-216-E-17 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1978

Status: Inactive **End Date:**

Description: The site is located north of the 241-BY Tank Farm. In 1991, the contaminated soil was consolidated on top of the 216-B-43 through 216-B-50 Cribs and stabilized with a layer of clean dirt. The site also includes an irregularly shaped drill pad area and a contaminated concrete pad that were also covered with clean dirt. All of the stabilized areas of UPR-200-E-89 were zoned off against casual entry and marked with "Underground Radioactive Material" signs.

Location: UPR-200-E-89 was originally identified in 1978 as an area of surface contamination east of the 241-BX Tank Farm. Wind blown contamination from tank farm operations spread the contamination to the north and northwest of the 241-BY Tank Farm. It eventually grew to be approximately 1.2 hectares (3 acres) in size.

Release Description: Airborne particulate matter contaminated the area bounding the north and northeast sides of the 241-BY Tank Farm. The airborne particulate matter was resuspended by wind from activities during the time of 241-BY Tank Farm operations. Airborne particulate matter from the 241-BX Tank Farm spread onto Baltimore Avenue roadway. Ground contamination was discovered at the 241-BX Tank Farm. The contamination was probably due to tank leakage.

Related Sites/ Structures: UPR-200-E-89 is associated with the 241-BX Tank Farm and the 241-BY Tank Farm.

Waste Type: Process Effluent

Waste Description: Airborne particulate matter contaminated an area near the 241-BY Tank Farm. The matter was resuspended by wind. Beta and gamma contamination with readings of 500 to 2,000 counts per minute were detected at the site.

Code: UPR-200-E-95 **Classification:** Accepted

Names: UPR-200-E-95; Ground Contamination Around RR Spur Between 218-E-2A and 218-E-2; UN-200-E-95; UN-216-E-23 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:**

Description: The site is a railroad spur located south of the 218-E-2 and 218-E-5 Burial Grounds and north of the 218-E-2A Burial Ground. It had been barricaded with steel chain and posted as a Contamination Area. In 1998, the track was covered with gravel and reposted as an Underground Radioactive Material area.

Location: UPR-200-E-95 occurred at the railroad spur north of the 221-B Facility, located between the 216-E-2A and 216-E-5 Burial Grounds.

Release Description: The railroad spur was used as an aboveground storage zone for low level contaminated equipment. Equipment from the B Plant and PUREX Plant operations were stored, for the most part, on the beds of railroad flat cars. UPR-200-E-95 is associated with this storage area. The contamination is possibly the result of the accumulation of many small releases over time.

Related Sites/ Structures: UPR-200-E-95 is associated with the 218-E-2A and the 218-E-5 Burial Grounds and B-Plant operations.

Waste Type: Soil

Waste Description: The material stored on the rail cars contained unknown beta and gamma contamination with a maximum reading of 100,000 counts per minute. The contamination on the rail bed is the result of contaminated equipment being stored on the tracks over an extended amount of time

Code: UPR-200-E-98 **Classification:** Accepted

Names: UPR-200-E-98; Ground Contamination East of C Plant (Hot Semi Works); UN-200-E-98; UN-216-E-26 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1965

Description: The location of this site is currently within a large surface stabilized area known as 200-E-41. Much of the contamination was removed and placed into the 218-C-9 Burial Pit in 1992. The area has been surface stabilized with powerhouse ash. The covered area has "Underground Radioactive Material" warning signs posted.

Location: UPR-200-E-98 occurred on the east side of the Hot Semiworks Facility, near the base of the 291-C Stack and around the 216-C-2 Reverse Well. The 291-C Stack was demolished and currently lies in a burial trench adjacent to where it stood.

Release Description: Radioactive particulate matter from the "Hot Semiworks" operations (1955 to 1965) was inadvertently spread to the ground surface. It contaminated the ground near the base of the 291-C Stack and around the 216-C-2 Reverse Well.

Related Sites/ Structures: UPR-200-E-98 was associated with the C Plant (Hot Semiworks) Facility, the 291-C Stack and the 216-C-2 Reverse Well. The surface stabilized area is now known as 200-E-41.

Waste Type: Soil

Waste Description: The release consisted of radioactive particulate matter from the Hot Semiworks operation that was deposited onto the ground surface east of the facility. The contamination was primarily strontium-90.

Code: UPR-200-E-101 **Classification:** Accepted

Names: UPR-200-E-101; Radioactive Spill Near 242-B Evaporator; UN-200-E-101; UN-216-E-101; UN-216-E-30 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:**

Description: The site, adjacent to the B Tank Farm perimeter fence, is currently a posted as an Underground Radioactive Material area.

Location: The site is located between the 242-B Evaporator and the 241-B Tank Farm fence.

Release Description: Surface contamination was identified between the 241-B Tank Farm fence and the 242-B Evaporator building. It was assigned the Unplanned Release Site Number UN-216-E-30 in August 1985. Windblown particulates from the tank farm or spills from the 242-B Evaporator may have been the cause of the contamination, but an exact cause for this area of contamination has not been determined. A routine radiological survey done in September 1986 found tumbleweeds growing at the site that were reading 1,000 counts per minute beta-gamma.

Related Sites/ Structures: The site is associated with 241-B Tank Farm and 200-E-120.

Waste Type: Soil

Waste Description: The release consisted of an unknown amount of radioactive particulates from the 241-B Tank Farm.

Code: UPR-200-E-112 **Classification:** Accepted

Names: UPR-200-E-112; Contaminated Railroad Track from B-Plant to the Burial Ground; UN-200-E-112 **Reclassification:** None

Names: UPR-200-E-144; Soil Contamination North of 241-B; UN-216-E-44 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is a large area posted as Underground Radioactive Material.

Location: The site is located north of the 241-B Tank Farm to 12th Street on the east side of Baltimore Ave, east of 241-BY Farm.

Waste Type: Soil

Waste Description: The site consisted of several acres of particulate surface contamination to the north and east of 241-B Tank Farm. The source is assumed to be activities in the 241-B and 241-BY Tank Farms.

200-IS-1

Code: 216-A-508 **Classification:** Accepted
Names: 216-A-508; 216-A-8 Distribution Box; Control Structure for 216-A-8 Crib **Reclassification:** None
Type: Control Structure **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1995
Description: The structure is surrounded with radiological chain and posted with Contamination Area and Radiologically Controlled Area signs.
Location: The site is located east of 200 East Area, outside the 200 East Area fence. It is located adjacent to the west end of the 216-A-8 Crib.
Process Description: The 216-A-508 Control Structure, located west of the 216-A-8 Crib, controlled whether the effluent flow was diverted to the 216-A-8 or the 216-A-24 Crib.
Related Sites/Structures: The control structure is associated with the 216-A-8 crib, the 200-E-164-PL pipeline, the 216-A-524 Control Structure and the 241-A Tank Farms.

Code: 216-A-524 **Classification:** Accepted
Names: 216-A-524; 216-A-524 Control Structure; 216-A-524 Weir; 216-A-24 Control Structure **Reclassification:** None
Type: Control Structure **Start Date:** 1/1/1958
Status: Inactive **End Date:** 1/1/1966
Description: The 216-A-524 Weir is an underground liquid effluent control structure. The weir is a concrete structure with the interior being divided vertically into three chambers. The outside dimensions are 4.9 meters (16 feet) by 2.4 meters (8 feet) and is 3.4 meters (11 feet) deep. The unit is covered with two removable concrete cover slabs. The aboveground features have been removed.
Location: The site is located on the west end of the 216-A-24 Crib.
Process Description: The weir controlled the effluent flow to the 216-A-24 crib.
Related Sites/Structures: The site is associated with the 216-A-24 crib, the 200-E-165-PL pipeline and the 216-A-508 Control Structure.
Waste Type: Process Effluent
Waste Description: The unit is an underground liquid effluent control structure for the 216-A-24 Crib and contains radioactively contaminated piping and cement. The amounts of radionuclides present are not known. A document published in 1987 (K.H. Cramer) reported radiological readings of 500 counts per minute smearable contamination, 10,000 counts per minute direct beta/gamma on the surface structures.

Code: 241-A-151 **Classification:** Accepted
Names: 241-A-151; 241-A-151 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1956
Status: Inactive **End Date:**

Description: The site is a reinforced concrete structure with cover blocks. Most of the structure is below grade. It is marked and radiologically posted.

Location: The diversion box is located south of the east end of the 202-A Building.

Release Description: Multiple documented Unplanned Releases are associated with this diversion box.

Process Description: The 241-A-151 diversion box began transferring waste from PUREX to the 241-A Tank Farms in 1956. The diversion box routed waste from the 202-A building to the 241-A-A and 241-A-B valve pits and later to the 241-AW-A and 241-AW-B valve pits. Excess solution drained to the 241-A-302A catch tank. The system is equipped with a leak detector alarm.

Related Sites/Structures: The site is associated with 241-A-302-A Catch Tank, drain line V028, 241-A and 241-A X Tank Farms, UPR-200-E-25, 200-E-183-PL, 200-E-207-PL, 200-E-218-PL, UPR-200-E-26 and UPR-200-E-65.

Waste Type: Process Effluent

Waste Description: The unit transferred process effluents from the PUREX facility to the tank farms. Lead shielding may also be contained inside the diversion box.

Code: 241-A-302A **Classification:** Accepted

Names: 241-A-302A; 241-A-302-A Catch Tank; Line V028 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/2005

Description: The unit is an underground, cylindrical vessel made of carbon steel. It sits inside a pump pit with a riser extending to the surface. It is surrounded with posts and chain and marked with radiological signs.

Location: The catch tank is located south of the east end of the 202-A building and west of the 241-A-151 Diversion Box. It is located inside the PUREX security fence.

Process Description: The tank received excess process effluent and leaks from the 241-A-151 Diversion Box.

Related Sites/Structures: The site is associated with the 241-A-151 Diversion Box. The drain line to this catch tank is V028.

Waste Type: Process Effluent

Waste Description: This unit I collected drainage from the 241-A-151 diversion box. Volumes varied according to specific plant operation. Prior to being pumped out in 1992, the tank contained 13,626 liters (3,605 gallons) of waste. In 1994, it was reported to contain 5984 liters (1583 gallons) of effluent. The 1996 report said it contained 6418 liters (1698 gallons) of waste.

Code: 241-A-302B **Classification:** Accepted

Names: 241-A-302B; 241-A-302-B Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; V062 **Reclassification:** None

Type: Catch Tank **Start Date:**

Status: Inactive **End Date:**

Description: The east slope of the 241-A Tank Farm has been sprayed with shotcrete. The shotcrete

surrounds the area where the 241-A-302B Catch Tank is located. A riser and electrical box are visible. A staircase has been installed to provide access to the tank surface. The underground tank is positioned horizontally. The tank is marked and radiologically posted.

Location: The 241-A-302B catch tank is buried outside the tank farm perimeter fence, east of 241-A Tank Farm, adjacent to Canton Ave.

Process Description: The tank received liquid effluents from the 241-A-151 Diversion Box, located south of PUREX, and the 241-A-152 diversion box, that is located inside the tank farm perimeter fence.

Related Sites/Structures: The unit is associated with 241-A Tank Farm and 241-A-152 Diversion Box and the 200-E-182-PL pipeline. The drain line to this catch tank is V062.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations to the tank farms. Volumes varied according to specific plant operation. The tank was isolated in 1985 and stabilized (pumped) in 1990. The volume of waste reported to be remaining in the tank is not consistent in all documents. The Miscellaneous Underground Radioactive Tanks report (1992) states there is 8581 liters (2270 gallons) of supernate and 3137 liters (830 gallons) of sludge. The Waste Tank Summary Report for April 1996 states there is a total of 18,685 liters (4943 gallons) of waste remaining in the tank.

Code: 241-B-154

Classification: Accepted

Names: 241-B-154; 241-B-154 Diversion Box

Reclassification: None

Type: Diversion Box

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1984

Description: The site is a diversion box that interconnects diversion boxes 241-B-151 and 241-B-152 with the 221-B Building. The unit is a rectangular, reinforced concrete structure. It was sprayed with gray, weatherizing foam. Later, a layer of shot-crete was placed over the diversion box, extending beyond the structure to include the surrounding ground surface.

Location: The unit is located east of 221-B, at the intersection of Baltimore Avenue and Seventh Street.

Process Description: This diversion box transferred waste solutions generated during fuel processing and decontamination activities from B Plant via 241-B-151 and 241-B-152 to the tank farms.

Related Sites/Structures: The diversion box is associated with B Plant, 241-B-302 Catch Tank, 200-E-116-PL, 200-E-199-PL, 200-E-213-PL 241-B-151, 241-B-152, UPR-200-E-45 and UPR-200-E-77.

Waste Type: Process Effluent

Waste Description: The diversion box transferred process waste from B Plant to the tank farms. It is estimated that the diversion box also may contain approximately 23 kilograms (50 pounds) of lead shielding inside this unit.

Waste Type: Chemicals

Waste Description: This unit transferred waste from processing and decontamination operations. Volumes of waste present in the system varied with production operations. Contamination in this unit is estimated to include high alpha, beta, and gamma activity levels.

Code: 241-B-302B

Classification: Accepted

Names: 241-B-302B; 241-B-302-B Catch Tank; IMUST; Inactive Miscellaneous Underground Storage

Reclassification: None

Names: 241-BX-155; 241-BX-155 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1984

Description: This diversion box is a reinforced concrete structure. The diversion box has been isolated and covered with water proof foam sealant. The area around the diversion box has been surface stabilized with gravel and posted with Underground Radioactive Material signs, except for the surface area above the 241-B-302-C tank. This area does not have the additional layer of gravel and remains posted as a Contamination Area.

Location: This diversion box is located northeast of B Plant on the south side of Atlanta Avenue.

Process Description: This diversion box transferred tank waste between B Plant and the 241-BX Tank Farm. The transfer system is designed to contain leaks from transfers and drainage from operations within the unit. This unit acts as secondary containment for transfer line jumper connections. The 241-B-302-C Catch Tank held the waste that leaked in this unit.

Related Sites/ Structures: This diversion box is associated with the 241-BX-302-C Catch Tank, 200-E-198-PL and the 241-BX Tank Farm.

Waste Type: Equipment

Waste Description: It was estimated that approximately 50 pounds (23 kilograms) of waste lead was stored in this unit.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. High levels of beta, gamma and alpha contamination are estimated to be inside this unit. Lead shielding material may also be present.

Code: 241-BX-302B **Classification:** Accepted

Names: 241-BX-302B; 241-BX-302-B Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Line V288 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1985

Description: The buried tank is covered with gravel. It is surrounded with post and chain. The tank is marked with radiological and IMUST signs.

Location: The 241-B-302B catch tank is located on the south side of the 221-B Building (near section 12), and northwest of 241-BX-154 Diversion Box.

Process Description: The catch tank collected drainage and spills that occurred in diversion box during waste transfer operations.

Related Sites/ Structures: This catch tank is associated with 241-BX-154 Diversion Box and 241-BX Tank Farm. Line V288 is the drain line from the diversion box.

Waste Type: Process Effluent

Waste Description: This unit collected drainage and spilled waste solutions that passed through the 241-BX-154 Diversion Box. Volumes were variable according to specific plant operation. Residual volume is estimated to be 3591 liters (950 gallons) of sludge and 355 liters (94 gallons) of supernate.

Code: 241-BX-302C **Classification:** Accepted
Names: 241-BX-302C; 241-BX-302-C Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Line V322 **Reclassification:** None
Type: Catch Tank **Start Date:** 1/1/1948
Status: Inactive **End Date:** 1/1/1985

Description: This catch tank is a horizontal cylinder of direct buried carbon steel. It is inside a recently graveled Underground Radioactive Material area, related to the 241-BX-155 Diversion Box surface stabilization. The tank was not covered with extra gravel and is separately posted as a Contamination Area. The tank is marked with radiological and IMUST signs.

Location: The 241-BX-302C catch tank is located southeast of 241-BX -155 Diversion Box, between Atlanta Avenue and Baltimore Avenue.

Process Description: The 241-BX-302C catch tank collected drainage and spills that occurred during waste transfer operations at the 241-BX-155 diversion box.

Related Sites/ Structures: This catch tank is associated with the 241-BX-155 Diversion Box and 241-BX Tank Farm. Line V322 is the drain line from the diversion box.

Waste Type: Process Effluent

Waste Description: This unit collected processing and decontamination drainage from the 241-BX-155 Diversion Box. Volumes were variable according to specific plant operation. In 1984, the tank was estimated to contain 2400 liters (635 gallons) of sludge and 862 liters (228 gallons) of supernate.

Code: 241-C-154 **Classification:** Accepted
Names: 241-C-154; 241-C-154 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1985

Description: The diversion box has been covered with clean backfill material (ash) and is no longer visible. It is located within the larger Hot Semiworks surface stabilized area (200-E-41). The diversion box is posted with Underground Radioactive Material Area signs.

Location: The diversion box is located south of 7th Street, southeast of the (demolished) 201-C building and northeast of the 216-C-1 crib. It is located within the larger Hot Semiworks surface stabilized area (200-E-41).

Process Description: This unit was used for transfer of radioactive solutions from (promethium) B Plant operations.

Related Sites/ Structures: The diversion box is associated with the 201-C C-Cell, 200-E-226-PL (B-Plant Promethium Transfer Line) and 200-E-41 stabilized area.

Waste Type: Equipment

Waste Description: The diversion boxes are estimated to contain approximately 50 pounds (23 kilograms) of waste lead.

Waste Type: Process Effluent

Waste Description: This unit was used to transfer radioactive waste solutions (promethium) from B Plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-CX-70 **Classification:** Accepted

Names: 241-CX-70; 241-CX-TK-70 Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Strontium Hot Semi-Works **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1957

Description: The 241-CX-70 underground tank is surrounded with post and chain. It is posted with Hazardous Waste, Restricted Area-Inactive Tank signs.

Location: The tank is located south of 7th Street, within the Hot Semiworks stabilized area (200-E-41).

Process Description: The unit stored Semiworks Process waste. The 241-CX-70 Tank is constructed of concrete with a 2.5-centimeter (1-inch) thick stainless steel plate liner. The sides and top are 0.3 meters (1 foot) thick concrete and the bottom thickness varies from 0.6 meters (2 feet) at the edges to 23 centimeters (9 inches) at the center. The tank is located below grade, with several risers and vents visible above grade.

Related Sites/Structures: Associated structures include 201-C, 276-C, 2704-C, 241-CX-71, and 241-CX-72. The pipeline to 241-CX-70 is sitecode 200-E-244-PL. It is inside the 200-E-41 stabilized area.

Waste Type: Process Effluent

Waste Description: The unit was used to store high-level process waste in support of the Semiworks process. Prior to sluicing, the unit contained approximately 1.45 meters (4.75 feet) of sludge, that is roughly equivalent to 39,000 liters (10,300 gallons) of waste. Contaminants included 20 curies of plutonium-239/240; 500 curies of cesium-137; 2,900 curies of strontium-90; 7,080 kilograms (7.8 tons) sodium nitrate; 1,000 kilograms (1.1 tons) sodium nitrite; 1,090 kilograms (1.2 tons) sodium fluoride; 450 kilograms (0.5 tons) aluminum sulfate; and 180 kilograms (0.2 tons) sodium chromate. After sluicing only a small quantity of solids and residual caustic/water remain. The estimated contamination levels for piping and equipment are 3 curies plutonium and 6,000 curies beta/gamma. The residual volume remaining after the tank was sluiced was estimated to be (500 gallons) of liquid and (250 gallons) of solids. Later more liquids and gravel-like solids were removed. The tank was dried and is considered to be empty.

Code: 241-CX-71 **Classification:** Accepted

Names: 241-CX-71; 241-CX-TK-71; IMUST; Inactive Miscellaneous Underground Storage Tank; Strontium Hot Semi-Works; 241-CX Neutralization Tank **Reclassification:** None

Type: Neutralization Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1957

Description: The underground tank is surrounded with steel posts and chain. It is posted with Hazardous Waste, Restricted Area-Inactive Tank signs.

Location: The tank is located south of 7th Street, within the Hot Semiworks stabilized area (200-E-41). It is near the northeast corner of the 216-C-1 Crib.

Process Description: This tank provided acidic waste neutralization via a flow-through limestone layer for 201-C process condensate and the coil and condensate cooling water stream prior to discharge to the 216-C-1 and 216-C-5 cribs. It may have also received process condensates from REDOX and PUREX pilot plant operations, decontamination flushes, and hot shop sink waste. Replacement limestone was added as needed through a large central riser pipe. This tank is constructed of

stainless steel and lies below grade, on a reinforced concrete foundation pad.

Related Sites/ Structures: Associated structures include: 201-C, 276-C, 2704-C, 216-C-1, 216-C-5, 241-CX-70, and 241-CX-72. The pipeline to 241-CX-71 is sitecode 200-E-245-PL. It is inside the 200-E-41 stabilized area.

Waste Type: Process Effluent

Waste Description: The tank was used for neutralizing the 201-C process condensate and the coil and condenser cooling water via a limestone layer. It also received process condensates from the Reduction Oxidation (REDOX) and Plutonium Uranium Extraction (PUREX) pilot plant processes, which would include hexone and kerosene solvents. From November 1956 to June 1957, the unit received flush wastes during decontamination. This tank currently contains a bottom layer of sludge and the limestone layer. The remainder of the tank was filled with grout in 1986. In October 1990, a drill was used to collect samples from the bottom of the tank, through the grout. Low concentrations of methyl ethyl ketone, xylene and toluene were measured (7-54 parts per billion). Twenty one parts per million of cyanide was found.

Code: 241-CX-72 **Classification:** Accepted

Names: 241-CX-72; 241-CX-72 Waste Self Concentrator; 241-CX-TK-72 Vault and Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Strontium Hot Semi-Works **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1958

Description: The 241-CX-72 tank is located inside a small building. A cover has been placed over the tank with radiological postings and Keep Out signs.

Location: The tank is located south of 7th Street, within the Hot Semiworks stabilized area (200-E-41).

Release Description: In 1988, during construction of the 291-C stack demolition berm, a portion of an agitator rod was accidentally snagged by heavy equipment. A piece of rod approximately 4.5 meters (15 feet) long was pulled out of the tank. Since the rod was found to be radiologically contaminated, an investigation was begun to assess the situation. The tank had previously been reported to be empty of waste. Failure to identify waste during the 1978 inspection was assumed to be from inadvertently inspecting the drywell adjacent to the tank, which remains free of waste by design. Since the rod had a significant amount of contamination on it, core sampling through the grout layer was planned. An eleven foot layer of fission product and TRU residue was found to be on the bottom of the tank.

Process Description: The 241-CX-72 Tank was an experimental tank used to study the characteristics of self-concentrating waste from the Plutonium Uranium Extraction (PUREX) process. The 241-CX-72 Tank is vertically oriented with welded steel construction. The tank rests on a concrete pad inside a steel caisson with the tank top below grade. A cylindrical heater is located just above each stiffening ring. A number of penetrations extend through the tank top, including an agitator. This tank was used for approximately one year, during 1957 through 1958. The 241-CX Vault is located below grade adjacent to the 241-CX-72 tank. The vault is constructed of reinforced concrete, divided into two sections. In 1961, the inlet piping was cut and capped.

Related Sites/ Structures: Associated structures include: 201-C, 276-C, 2704-C, 241-CX-70, and 241-CX-71. The pipeline to 241-CX-72 is sitecode 200-E-246-PL. It is inside the 200-E-41 stabilized area.

Waste Type: Process Effluent

Waste Description: The tank was filled with grout in 1986. Original content information was based on process

waste Description: knowledge. Some solid salt cake, similar to that found in tank farm tanks containing PUREX waste, is believed to remain inside the tank as well as the grout. Smears taken from an agitator rod (accidentally pulled out of the tank by heavy equipment) found a maximum of 8000 disintegrations per minute alpha and 5800 picocuries of gamma. Core samples were obtained from the tank in 1989. An 3.3 meter (eleven foot) layer of fission products and TRU isotopes was found in the bottom of the tank. Estimated radionuclides present include approximately 200 grams of plutonium-239 (as a fluoride compound).

Code: 241-ER-151 **Classification:** Accepted

Names: 241-ER-151; 241-ER-151 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: The diversion box is located inside a locked chain link fence. The fence is posted with "Caution - contact Radiological Control and Tank Farm Shift Office prior to entry" signs. The diversion box is surrounded with a metal safety barricade.

Location: The site is located southwest of the B Plant and near the corner of 7th Street and Atlanta Avenue.

Process Description: The 241-ER-151 diversion box distributed waste between locations inside 200 East Area or the waste could be transferred to 200 West Area, via the cross site transfer line. This unit received 200 West Area waste via the 241-UX-154 Diversion Box via transfer lines V360, V361, V362, V363, V364 and V366 and the 241-EW-151 Vent Station. The diversion box also received 200 East Area tank waste from the 241- B, BX, and BY Tank Farms via 244-BX Double Contained Receiver Tank. Drainage from the 241-ER-151 went to the 241-ER-311 Catch tank.

Related Sites/Structures: This site is associated with the 241-ER-311 Catch Tank, the Cross Site Transfer Line, 241-EW-151 Vent Station, the 241-BX Double Contained Receiver Tank, and the 241-ER-152, the 241-ER-153, and the 241-UX-154 Diversion Boxes and the 241-ER-311 Catch Tank. It is also associated with pipelines 200-E-111-PL, 200-E-145-PL, 200-E-215-PL, 200-E-217-PL.

Waste Type: Process Effluent

Waste Description: The diversion distributes chemical process waste between facilities and tank farms. Quantities of waste vary according to specific plant operations. This diversion box facilitates the transfer of waste solutions between the 200 East Area to the 200 West Areas via the Cross Site Transfer Line. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-ER-152 **Classification:** Accepted

Names: 241-ER-152; 241-ER-152 Diversion Box; Line DR311 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: Most of the reinforced concrete diversion box structure is underground. The floor and lower portions of the walls are lined with stainless steel. Cover blocks with lifting hooks are visible from the surface. The 241-ER-152 Diversion Box is surrounded with radiation rope and Contamination Area signs.

Location: This 241-ER-152 Diversion Box is southeast of the 224-B Building, and east of 241-ER-151 Diversion Box, near the corner of Atlanta Ave. and 7th Street.

Release: In 1996, intrusion from mice and harvester ants caused a contamination spread over an area

Release Description:	measuring approximately .5 hectares (1.2 acres) southeast of the diversion box. The contaminated area was surface stabilized with clean gravel and down posted from a Contamination Area/ Soil Contamination Area to an Underground Radioactive Material Area (URM) (see WIDS sitecode 200-E-29).
Process Description:	Diversion boxes contain jumper piping that routed waste from one transfer line to another. Waste leaks that occur during high-level waste transfers are contained in catch tanks. The diversion boxes generally drain by gravity to nearby catch tanks where any spilled waste is stored.
Related Sites/ Structures:	The 241-ER-152 Diversion Box is associated with the 241-ER-151 and 241-ER-153 diversion boxes, the 241-ER-311 Catch Tank and transfer lines (sitecodes 200-E-145-PL and 200-E-215-PL). It is also associated with the stabilized Contamination Area know as 200-E-29. The drain line for this diversion box is DR311.
Waste Type:	Process Effluent
Waste Description:	The diversion box distributes radioactive waste solutions from between facilities and tank farms. Quantities are variable according to specific plant operations. This diversion box facilitates the transfer of low-level waste for the B Plant to the Double-Shell Tank Farms.

Code:	241-ER-311	Classification:	Accepted
Names:	241-ER-311; 241-ER-311 Catch Tank; 241-ER-311A Replacement Tank; IMUST	Reclassification:	None
Type:	Catch Tank	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/2005
Description:	The underground tank is located inside the 241-ER-151 locked chain link fence. The fence is posted as a Contamination Area and Underground Radioactive Material Area, and is labeled with IMUST signs. The placement of these structures within the fence is the 241-ER-311 Catch Tank is the furthest south, nearest the chain link fence. The 241-ER-311A Catch Tank is located adjacent to the north side of the 241-ER-311 tank (in the middle of the three structures). The 241-ER-151 Diversion Box is north of the 241-ER-311A Catch Tank.		
Location:	The tank is located south of the B Plant, and west of Atlanta Avenue, inside the 241-ER-151 diversion box fence.		
Process Description:	The catch tank collected spills and leaks that occurred in the 241-ER-151, the 241-ER-152, and the 241-ER-153 diversion boxes during waste transfer operations. The catch tank is an underground tank in a horizontal configuration. The tank is constructed from carbon steel, resting in a sand bed. Outer surfaces are coated with coal tar. The interior is unpainted.		
Related Sites/ Structures:	The 241-ER-311 catch tank is associated with the 241-ER-311A Catch Tank, 241-ER-151, 241-ER-152, and 241-ER-153 diversion boxes, automatic liquid level sensors, leak detection, and a submersible pump. Pipelines associated with these structures are discussed in sitecode 200-E-228-PL.		
Waste Type:	Process Effluent		
Waste Description:	The catch tank collected drainage and leaks from the 241-ER-151, 241-ER-152 and 241-ER-153 diversion boxes. Volumes were variable according to specific plant operation, when the tank was active. Decreasing tank volumes were noted in 2005. A tank leak investigation was done in late 2005 and early 2006. The tank is assumed to be leaking.		

Code: 241-ER-311A **Classification:** Accepted

Names: 241-ER-311A; 241-ER-311A Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Old 241-ER-311; Original 241-ER-311 Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1954

Description: It is located within a chain link fence that is posted as a Contamination Area and Underground Radioactive Material Area, and is labeled with IMUST signs. The 241-ER-151 Diversion Box, the 241-ER-311 Catch Tank and the 241-ER-311A Catch Tank are all located inside this chain link fence. The placement of these structures within the fence is the 241-ER-311 Catch Tank is the furthest south, nearest the chain link fence. The 241-ER-311A Catch Tank is located adjacent to the north side of the 241-ER-311 tank (in the middle of the three structures). The 241-ER-151 Diversion Box is north of the 241-ER-311A Catch Tank.

Location: This unit is below grade. The tank is located southwest of the B Plant. It is south of 7th Street and west of Atlanta Avenue.

Process Description: The catch tank received drainage and leaks from the 241-ER-151 diversion box. The tank is a horizontal, carbon steel underground tank.

Related Sites/ Structures: The tank is associated with the 241-ER-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: The tank received waste from the 241-ER-151 Diversion Box that was caused from leaks and decontamination activities. The tank was abandoned in place in 1954. Although no records have been found identifying its contents of to verify the tank was pumped, it is unlikely any significant amount of was remains in the tank.

Code: 216-S-172 **Classification:** Accepted

Names: 216-S-172; 216-S-172 Control Structure; 216-S-172 Weir Box and Control Structure; 2904-S-172 Weir **Reclassification:** None

Type: Control Structure **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1976

Description: This site is an underground concrete structure with interior hand operated sluice gates. Float wells were attached to the outside north and south walls. The structure has been covered with soil and posted with Underground Radioactive Material/Cave-In Potential signs.

Location: The unit is located outside the southwest corner of the 200 West Area perimeter fence and north of 216-S-5 Crib.

Process Description: The control structure was used to divert 202-S process vessel cooling water to 216-S-6 and steam condensate to the 216-S-16 Ditch.

Related Sites/ Structures: The site is associated with the 202-S Building, 200-W-153-PL pipeline, and the 216-S-16 Ditch.

Waste Type: Process Effluent

Waste Description: The unit contains unquantified amounts of low-level radioactive solid waste. In 1987, the

Description: Hanford Site Waste Management Units Report stated the maximum radiation reading on the structure was 25 millirads per hour.

Code: 240-S-151 **Classification:** Accepted

Names: 240-S-151; 240-S-151 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1987

Description: This unit is constructed of reinforced concrete and is rectangular in shape. The 240-S-151 Diversion Box has been weather covered.

Location: The 240-S-151 Diversion Box is located north of the 202-S Canyon Building, west of the 240-S-302 catch tank.

Process Description: This unit was used for the transfer of REDOX waste solutions from processing and product decontamination operations to the tank farms.

Related Sites/ Structures: 200-W-153-PL, 200-W-187-PL, 200-W-190-PL, 200-W-212-PL, the 240-S-302 Catch Tank, UPR-200-W-82 and 241-S Tank Farm are associated with the 240-S-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and product decontamination operations to the tank farms. Volumes were variable according to specific plant operations.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 240-S-152 **Classification:** Accepted

Names: 240-S-152; 240-S-152 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1980

Description: This unit is constructed of reinforced concrete and is rectangular in shape. The 240-S-152 Diversion Box has been weather covered.

Location: The 240-S-152 Diversion Box is located north of the 202-S Canyon Building and north of 240-S-151 Diversion Box.

Process Description: This unit was used for the transfer of waste solutions from 204-S to the 240-S-151 Diversion Box.

Related Sites/ Structures: 200-W-186-PL, 200-W-187-PL, 240-S-302 Catch Tank and 241-S Tank Farm are associated with the 240-S-152 Diversion Box.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from 204-S to the 240-S-152 Diversion Box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 240-S-302 **Classification:** Accepted

Names: 240-S-302; 240-S-302 Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Line V556 and V557 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1987

Description: This unit is a horizontal, cylindrical, steel tank. The 240-S-302 Catch Tank is buried underground to provide shielding from radiation. The tank is surrounded with posts and chain and posted with radiological and IMUST signs.

Location: This unit is located north of the 202-S Building and east of the 240-S-151 Diversion Box.

Process Description: The tank received leakage, spillage, line flushes, and drainage associated with waste transfers through Diversion Box 240-S-151.

Related Sites/Structures: The 240-S-302 Catch Tank is associated with the 240-S-151 Diversion Box. The drain lines to this catch tank are V556 and V557.

Waste Type: Storage Tank

Waste Description: This unit received low-level, dilute laboratory waste and drainage from the 240-S-151 Diversion Box. In 1993, the tank was estimated to contain 8603 liters (2276 gallons) of sludge and liquid. Approximately 378 liters (100 gallons) is suspected to be liquid.

Code: 276-S-141 **Classification:** Accepted

Names: 276-S-141; 276-S-141 Solvent Storage Tank; 276-S-306A; 276-S-TK-141; Hexone Storage Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Tank 276-141; 244-SX-15 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1969

Description: The site is a below grade carbon steel tank enclosed in a chain line fenced area. The tank is the southernmost tank in a two tank network connected to the 276-S Solvent Handling Facility. The tank had an 89,000 liter (23,575 gallon) capacity. The tank has been filled with cement.

Location: The underground tank is north of 276-S Building and directly south of the 276-S-142 Tank. The tank is west of the REDOX railroad tracks.

Process Description: The tank is currently being closed under interim status, containing small amounts of liquid mixed waste. The tank stored various liquid mixed wastes until 1992, when most of the waste was transferred to tank cars for off-site incineration. From 1951 to 1967 the tank was used to store reagent-grade hexone for makeup as a solvent at REDOX. The hexone was delivered to REDOX in rail cars that were unloaded into the 276-S-141 and 241-S-142 tanks via underground lines at the railcar unloading station.

Related Sites/Structures: Structures associated with the tank include: solvent transfer lines, the 276-S-142 Tank, the Tank Car Unloading Station, and process equipment in the 276-S Building. The pipelines associated with the hexone tanks are sitecode 200-W-230-PL.

Waste Type: Chemicals

Waste Description: The unit contained radiologically contaminated liquids made up of normal paraffin

hydrocarbons, hexone, and phosphate tar. In 1992, the 276-S-141 and 276-S-142 each contained between 19 to 114 liters (5 to 30 gallons) of 93% normal paraffin hydrocarbons and 7% hexone. They also contained up to 950 liters (250 gallons) of phosphate tar. A nitrogen gas blanket and offgas filtration was implemented in 1990 during the distillation phase. In 2002, the nitrogen suppression system was shut off and the tanks were filled with grout. The remaining 19 to 114 liters (5 to 30 gallons) of liquid is expected to be removed by evaporation over time due to the nitrogen purge process.

Code:	276-S-142	Classification:	Accepted
Names:	276-S-142; 276-S-142 Solvent Storage Tank; 276-S-306B; 276-S-TK-142; Hexone Storage Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Tank 276-142; 244-SX-15	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1951
Status:	Inactive	End Date:	1/1/1969
Description:	The site is a below grade carbon steel tank. The tank is the northernmost tank in a two tank network connected to the 276-S Solvent Handling Facility. The tank has a 89,000 liter (23,575 gallon) capacity.		
Location:	The underground tank is north of the 276-S Building and directly north of the 276-S-141 Tank. The system is west of the railroad tracks.		
Process Description:	The tank is currently being closed under interim status and contains a small amount of liquid mixed waste. The tank stored various liquid mixed waste until 1992, when most of the liquid mixed waste was transferred to tank cars for off site incineration. From 1951 to 1967 the tank was used to store reagent-grade hexone for makeup as a solvent at REDOX. The hexone was delivered to REDOX in rail cars that were unloaded into the 276-S-141 and 241-S-142 tanks via underground lines at the railcar unloading station.		
Related Sites/Structures:	Structures associated with the tank include: solvent transfer lines, the 276-S-141 Tank, the Tank Car Unloading Station, and process equipment in the 276-S Building. The pipelines associated with the hexone tanks are sitecode 200-W-230-PL.		
Waste Type:	Chemicals		
Waste Description:	The unit contained radiologically contaminated liquids made up of normal paraffin hydrocarbons, hexone, and phosphate tar. In 1992, 276-S-141 and 216-S-142 contained between 19 to 114 liters (5 to 30 gallons) of 93% normal paraffin hydrocarbons and 7% hexone. They also contain up to 950 liters (250 gallons) of phosphate tar. A nitrogen blanket was added to the tank. In 2002, the nitrogen suppression system was shut off and the tanks were filled with grout. The remaining 19 to 114 liters (5 to 30 gallons) of liquid is expected to be removed by evaporation over time due to the nitrogen purge process.		

Code:	2904-S-160	Classification:	Accepted
Names:	2904-S-160; 2904-S-160 Control Structure; 2904-S-160 Weir	Reclassification:	None
Type:	Control Structure	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1976
Description:	The unit is an inactive waste management unit consisting of a below grade pentagonal structure with reinforced concrete walls, floor, and roof. Sixty centimeter (24 inch) diameter vitrified clay pipes provided inlet and outlet flow for the structure. The site has been surface stabilized		

and is posted with Underground Radioactive Material/Cave-in Potential signs.

Location: The structure is located southwest of the southwest corner of the 200 West Area, outside the perimeter fence and north of the 216-S-5 crib.

Process Description: The unit was built to divert process vessel cooling waste and steam condensate from 202-S Building to the 216-S-17 Pond, 216-S-6 Crib, and 216-S-16 Pond.

Related Sites/ Structures: The site is associated with the 216-S-172 control structure, the 216-S-17 and 216-S-16 Ponds, the 216-S-6 Crib, 200-W-155-PL and 200-W-152-PL pipelines.

Waste Type: Process Effluent

Waste Description: The unit contains low-level contaminated concrete and piping. The quantity of contaminated waste has not been determined. There is beta/gamma contamination in the soil and smearable contamination on the surfaces of the box. Contamination originated from effluents traveling through the weir.

Code: 2904-S-171 **Classification:** Accepted

Names: 2904-S-171; 2904-S-171 Control Structure; 2904-S-171 Weir Box; 216-S-171 **Reclassification:** None

Type: Control Structure **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1976

Description: The 2904-S-171 Control Structure is a below grade, rectangular concrete weir structure. The inlet piping consisted of 46 centimeter (18 inch) diameter vitrified clay pipe. The outlet piping consisted of 46 centimeter (18 inch) diameter corrugated metal pipe. The site has been backfilled with clean material and is posted with Underground Radioactive Material signs.

Location: The site is located southwest of the 200 West Area, outside the perimeter fence, adjacent to the north side of the 216-S-6 Crib.

Process Description: The unit was built to measure and regulate flow of process waste being routed to the 216-S-6 Crib. Pipeline 200-W-156-PL entered the control structure from the north. Pipeline 200-W-153-PL entered the control structure from the east.

Related Sites/ Structures: The structure is associated with the 216-S-6 Crib and the 200-W-153-PL and 200-W-156-PL pipelines.

Waste Type: Process Effluent

Waste Description: This unit contains low-level contaminated concrete and piping. The quantity of contaminated waste has not been determined. There were beta/gamma smearable contamination and recordable radiation readings with a Cutie Pie (hand-held radiation monitor) on the above ground portions of the structure before it was surface stabilized.

Code: 241-SX-302 **Classification:** Accepted

Names: 241-SX-302; 241-SX-302 Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Line V595; SX-304 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1983

Description: The 241-SX-302 Catch Tank an underground, horizontal, cylindrical steel tank. Three yellow

risers are visible on the surface. It is surrounded with post and chain and marked with radiological and IMUST signs.

Location: The 241-SX-302 Catch Tank is located east of the 241-SX-101 Tank, inside the tank farm fence.

Process Description: Drainage and leaks from the 241-SX-151 Diversion Box and the 241-SX-152 Diversion Boxes collected and were stored in the 241-SX-302 Catch Tank.

Related Sites/ Structures: The 241-SX-302 Catch Tank is associated with drain line V595, the 241-SX-151 Diversion Box and the 241-SX-152 Diversion Box.

Waste Type: Process Effluent

Waste Description: This tank collected excess and leaking waste that transferred through the 241-SX-151 and 241-SX-152 Diversion Boxes. In 1993, the tank was estimated to contain 1152 liters (305 gallons) of liquid supernate and 3969 liters (1050 gallons) of sludge.

Code: 241-TX-152

Classification: Accepted

Names: 241-TX-152; 241-TX-152 Diversion Box

Reclassification: None

Type: Diversion Box

Start Date: 1/1/1949

Status: Inactive

End Date:

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. It is surrounded with light posts and chain and is posted with various radiological postings.

Location: This unit is located east of the 241-TX Tank Farm. It is east of Camden Ave. and south of 23rd Street. It is north of the 200 West Area Powerhouse Pond.

Process Description: The Diversion Box was used to direct liquid waste to other tank farm locations in 200 East and West Areas via jumper connections and underground transfer lines.

Related Sites/ Structures: The 241-TX-152 Diversion Box is associated with the T-Plant, 241-SY Tank Farm, UPR-200-W-113, 200-W-182-PL and the 241-TX-154 Diversion Box.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-TX-154

Classification: Accepted

Names: 241-TX-154; 241-TX-154 Diversion Box

Reclassification: None

Type: Diversion Box

Start Date: 1/1/1949

Status: Inactive

End Date:

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. The diversion box is surrounded with post and chain. It is labeled and radiologically posted. The adjacent area has been covered with shotcrete.

Location: This unit is located on the east side of the 221-T Building.

Release Description: Multiple unplanned releases and transfer line breaks are associated with this diversion box.

Process Description: various tank farm facilities via underground transfer lines.

Related Sites/ Structures: The 241-TX-154 diversion Box is associated with T-Plant operations, 241-TX-152 Diversion Box, 241-TX-302C Catch Tank, 241-SY Tank Farm, UPR-200-W-21, UPR-200-W-40, UPR-200-W-38 and UPR-200-W-160. The encased pipeline between 241-TX-154 Diversion Box and 241-TX-155 Diversion Box is sitecode 200-W-143-PL.

Waste Type: Process Effluent
Waste Description: The unit transports radioactive waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-TX-155	Classification: Accepted
Names: 241-TX-155; 241-TX-155 Diversion Box	Reclassification: None
Type: Diversion Box	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1980

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. It is surrounded with light posts and chain and Contamination Area signs.

Location: This unit is located east of the 241-TX Tank Farm, south of 23rd Street and north of the 200 West Area Powerhouse Pond.

Release Description: Over the years, multiple releases associated with this diversion box and its pipelines have been documented. HW-60807, issued in 1959, states that contamination has spread from this diversion box to the surrounding ground on several occasions. Three sides of the diversion box were covered with black top in an effort to contain the contamination. In November 1952, contaminated nitric acid solution was pumped from the 241-TX-155 catch tank to an excavation nearby and covered with soil. The area was surrounded with a wooden fence and radiation signs in 1952, but is not currently marked. In 1954, a jumper leak in the diversion box caused an area measuring 9 meters by 30.5 meters (30 by 100 feet) to become contaminated. This area was also fenced and posted at the time of the occurrence, but the wooden fence is no longer present. In 1998, 1999 and 2000, several large areas of contamination was identified and posted around the diversion box and on its associated pipelines (See UPR-200-W-113).

Process Description: This unit was to transfer waste solutions from processing and decontamination operations to various tank farm facilities via underground transfer lines..

Related Sites/ Structures: The 241-TX-155 Diversion Box is associated with the 241-TX-302B and 241-TX-302BR Catch Tanks, the 241-T, 241-TX, and 241-TY Tank Farms, UPR-200-W-113, UPR-200-W-5, UPR-200-W-28, UPR-200-W-135 and UPR-200-W-76. The encased pipeline between 241-TX-154 Diversion Box and 241-TX-155 Diversion Box is sitecode 200-W-143-PL. Other transfer lines are 200-W-176-PL, 200-W-177-PL, 200-E-182-PL, 200-W-191-PL.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-TX-302B **Classification:** Accepted

Names: 241-TX-302B; 241-TX-302-B Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines V414 and V415 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1982

Description: This unit is an underground, cylindrical tank made of steel. The ground surface around the tank has been covered with gravel. The tank is surround with light posts and chain and posted with Contamination Area and IMUST signs.

Location: This tank is located east of the 241-TX Tank Farm, northeast of the 241-TX-155 Diversion Box.

Process Description: The tank received overflow from the 241-TX-155 Diversion Box.

Related Sites/Structures: The 241-TX-302B Catch Tank is associated with the 241-TX-155 Diversion Box, 241-TX-302BR Catch Tank, UPR-200-W-135 and UPR-200-W-131. The drain lines from 241-TX-155 are V414 and V415.

Waste Type: Process Effluent

Waste Description: This unit was used for containment of waste solution spills that occurred during transfers from processing and decontamination operations. Volumes collected were variable according to specific plant operations. In 1984, the volume was estimated to be 4989.6 liters (1320 gallons).The Stabilization Evaluation Form in Appendix B states that the tank had 14.75 inches of total waste and 14.5 inches of solid waste inside. Therefore, there were 1362 gallons of solidwaste and 70 gallons of liquid waste in the tank.A sample from this tank was taken on March 6, 1984. It was reported to have a dose rate of 24 millirad per hour with a pH of 9.95.

Code: 241-TX-302BR **Classification:** Accepted

Names: 241-TX-302BR; 241-TX-302BR Catch Tank; 241-TXR-302BR; IMUST; Inactive Miscellaneous Underground Storage Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1954

Description: This unit is an underground, horizontal, cylindrical tank made of steel. The ground surface around the tank has been covered with gravel. The tank is surrounded with posts and chain and labeled with IMUST signs.

Location: The 241-TX-302BR Catch Tank is located east of the 241-TX-155 Diversion Box. It is located east of Camden Ave. and south of 23rd Street.

Process Description: This tank received drainage from Diversion Box 241-TX-155.

Related Sites/Structures: This tank is associated with UPR-200-W-131, 241-TX-155 Diversion Box, 241-TX-302B Catch Tank and 216-T-20 acid pit.

Waste Type: Process Effluent

Waste Description: The unit was used to transfer of waste solutions from processing and decontamination operations. No waste volume was available in 1994.

Code: 241-TX-302C **Classification:** Accepted
Names: 241-TX-302C; 241-TX-302-C Catch Tank; Lines V741 and V742 **Reclassification:** None
Type: Catch Tank **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/2005
Description: This unit is an underground horizontal, cylindrical tank made of carbon steel. The tank area has been sprayed with shotcrete to control surface contamination.
Location: The 241-TX-302 Catch tank is located southeast of the center of the 221-T Building.
Process Description: This unit received overflow from the 241-TX-154 Diversion Box.
Related Sites/Structures: The 241-TX-302-C Catch Tank is associated with the 241-TX-154 Diversion Box and UPR-200-W-38. The diversion box drain lines are V741 and V742.
Waste Type: Process Effluent
Waste Description: This unit is used for transfer of radioactive waste solutions from processing and decontamination operations at T Plant. Volumes are variable according to specific plant operation.

Code: 216-TY-201 **Classification:** Accepted
Names: 216-TY-201; IMUST; Inactive Miscellaneous Underground Storage Tank; Supernatant Disposal Flush Tank **Reclassification:** None
Type: Settling Tank **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1966
Description: The 216-T-26, 216-T-27 and 216-T-28 cribs and the 216-TY-201 Tank are enclosed in a common area with steel post and chain barricade. The area is posted "Underground Radioactive Material". The 216-TY-201 flush tank is located in the northeast corner of the area. It has three risers protruding from a mound of earth. The 216-TY-201 tank is delineated with steel post and chain and marked with Inactive Miscellaneous Underground Storage Tank signs
Location: The unit is located in the 200-West Area. It is east of Camden Ave and south of 23rd Street.
Process Description: HNF-2503 states the flush tank originally received supernate from the TY Tank Farm (1953-1955) and discharged the overflow to the 216-T-26 crib. The pipeline from 241-TY Farm was blanked near the 241-TY Tank Farm eastern fenceline in December 1955. After 1955, the flush tank received waste via another pipeline from tank 241-T-112 in the 241-T Tank Farm. Overflow from the flush tank was discharged to the 216-T-27 and 216-T-28 cribs.
Related Sites/Structures: The tank is associated with supernatant waste from tanks 241-TY-101, 241-TY-102, 241-TY-103 and 241-TY-104 in the 241-TY Tank Farm; tanks 241-T-110, 241-T-111 and 241-T-112 in the 241-T Tank Farm, 200-W-175-PL and the 216-T-26, 216-T-27 and 216-T-28 Cribs.
Waste Type: Process Effluent
Waste Description: In 1955 and 1956, the 216-TY-201 Flush Tank received scavenged first cycle supernate from 221-T after it had cascaded through the 241-TY-101, 241-TY-103, and 241-TY-104 tanks in 241-TY Tank Farm. From 1960 through 1966 the 216-TY-201 Flush Tank received T Plant steam condensate and process decontamination waste via the 241-T-112 tank in the 241-T Tank Farm. In 1963, 2706-T equipment decontamination waste was added to the waste stream. In 1964, 300 Area laboratory waste was trucked to the 216-T-27 and 216-T-28 cribs and released

to the cribs through a riser. The Authorization Basis Status Report (1998) assumes the solid and liquid composition to be the same as those found in tank 241-T-112. Solids are assumed to contain 5110 micrograms per gram (ug/g) aluminum, 28800 ug/g bismuth, 16400 ug/g iron, 41000 ug/g sodium, 395 ug/g lead, 313 ug/g strontium, 3100 ug/g uranium, and 36600 ug/g OH. Solid radionuclides are assumed to include 0.184 microcuries per gram (uCi/g) cesium-137, 6.0 uCi/g strontium-90, 5.71 E-04 uCi/g plutonium-138, 0.07 uCi/g plutonium-139 and 1.0 E-04 uCi/g americium-241. The Supernate is expected to contain 9.0 E-06 uCi/g americium-241.

Code:	241-U-151	Classification:	Accepted
Names:	241-U-151; 241-U-151 Diversion Box	Reclassification:	None
Type:	Diversion Box	Start Date:	1/1/1946
Status:	Inactive	End Date:	

Description: The diversion box is marked and radiologically posted. This unit is constructed of reinforced concrete with multiple encased liquid waste transfer lines. The diversion box structure is mostly below ground. It has three layers of cover blocks.

Location: The 241-U-151 Diversion Box is located northeast of the intersection of Camden Avenue and Sixteenth Street, east of the 241-U Tank Farm.

Process Description: This unit was used to transfer waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 241-U-151 Diversion Box is associated with the 241-U-301 Catch Tank and the 244-S and 244-TX Double Contained Receiver Tanks. The unit is also associated with Diversion Boxes 241-U-152, and 241-TX-152, UPR-200-W-6, 200-W-99-PL, 200-W-130-PL, 200-W-183-PL, 200-W-184-PL.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. Lead shielding may also be contained inside the diversion box.

Code:	241-U-152	Classification:	Accepted
Names:	241-U-152; 241-U-152 Diversion Box	Reclassification:	None
Type:	Diversion Box	Start Date:	1/1/1946
Status:	Inactive	End Date:	

Description: The diversion box is marked and radiologically posted. The unit is constructed of reinforced concrete with multiple encased liquid waste transfer lines. The diversion box structure is mostly below ground. It has three layers of cover blocks.

Location: The 241-U-152 Diversion Box is located northeast of the intersection at Camden Avenue and Sixteenth Street, east of the 241-U Tank Farm.

Process Description: This unit was used to transfer waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 241-U-152 Diversion Box is associated with the 241-U-301 Catch Tank, the 241-U-153 Diversion Box, 200-W-181-PL, 200-W-182-PL, 200-W-183-PL, 200-W-184-PL and UPR-200-W-6.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities

Description: are variable according to specific plant operations. Lead shielding may also be contained inside the diversion box.

Code: 241-UX-154 **Classification:** Accepted

Names: 241-UX-154; 241-UX-154 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1946

Status: Inactive **End Date:**

Description: The diversion box is marked and radiologically posted. The unit is mostly below grade, constructed of reinforced concrete. Multiple encased liquid waste transfer lines enter the box through its southeast wall.

Location: The 241-UX-154 Diversion Box is located southeast of the 221-U Canyon Building.

Process This unit was used to transfer waste solutions from processing and decontamination operations.

Description: The 241-UX-154 Diversion Box served as a waste transfer hub not only for the 200 West Area, but also for cross site waste transfers through the inter-area (cross-site) transfer line. The diversion box also received drainage from the 291-U stack.

Related Sites/ Structures: The 241-UX-154 Diversion Box is associated with the 221-U Canyon Building, 241-WR Vault, 291-U stack, 241-TX-155 Diversion Box, and 241-UX-302 Catch Tank.

Waste Type: Process Effluent

Waste The unit transfers waste solutions from processing and decontamination operations via underground, encased waste lines. Quantities are variable according to specific plant operations. Lead shielding may also be contained within the structure.

Code: 241-UX-302A **Classification:** Accepted

Names: 241-UX-302A; Lines V380 and V381; 241-U-302 Catch Tank; 241-UX-302; 241-UX-302 Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/2005

Description: The catch tank is an underground tank. It is covered with gravel, marked and radiologically posted.

Location: The tank is located southeast of the 221-U Building and south of the 241-UX-154 Diversion Box.

Process The catch tank collected excess liquid from the 241-UX-154 Diversion Box and 291-U stack condensate drainage.

Related Sites/ Structures: The unit is associated with 241-UX-154 Diversion Box and U Plant. The drain lines from the diversion box are lines V380 and V381.

Waste Type: Process Effluent

Waste This unit was used for transfer of waste solution from processing and decontamination operations. Volumes were variable according to specific plant operation when it was active. In August 1995, it contained 4232 liters (1118 gallons) of waste. The tank was pumped down to the pump inlet level in January 2003. In March 2006, the tank was estimated to contain 6551 liters (1724 gallons). In October 2006, the more liquid was pumped out of the tank, leaving a

residual of approximately 3.8 liters (one gallon).

Code: 200-W-7 **Classification:** Accepted

Names: 200-W-7; 241-S-TK-1; 243-S-TK1; 243S-TK-1; 246-L; IMUST; Inactive Miscellaneous Underground Storage Tank; 200-W Personnel Decontamination Facility Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1978

Status: Inactive **End Date:** 1/1/1988

Description: The underground tank is inside a chained area that measures approximately 3 meters by 3 meters (9 feet by 9 feet), with three risers extending to the surface. The tank is posted with Inactive Miscellaneous Underground Storage Tank (IMUST) signs and radiological postings.

Location: The site is located northwest of 242-S Evaporator and just north of MO-326.

Process Description: The underground tank is a 2,082 liter (550 gallon) fiberglass catch tank was connected to trailer MO-0326. The trailer had been used as a personnel decontamination facility. The trailer had a sink and a shower. The trailer has been removed. The underground tank is covered with a minimum of 0.9 meters (3 feet) of overburden. The tank has three risers.

Related Sites/Structures: The tank is associated with Trailer MO-0326. It was the Personnel Decontamination Facility for 200 West Tank Farms.

Waste Type: Storage Tank

Waste Description: The tank received effluent from the personnel decontamination sink and shower. The tank contents would include soap, water and low levels of radionuclides.

Code: 200-W-16 **Classification:** Accepted

Names: 200-W-16; 292-T Underground Tanks; 292-TK-1; 292-TK-2; IMUST; Inactive Miscellaneous Underground Storage Tank **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1970

Description: Two metal riser pipes extend about 0.5 meters (1.5 feet) above grade near the southeast corner of the 292-T building addition. Both are capped and one appears to have a pressure relief vent. These pipes extend from two buried tanks (292-TK-1 and 2). There is a chain link fence enclosing the area where the tanks are located. The fence is posted with Access Restricted signs. The site is within a chained area posted "Contamination Area".

Location: The underground tanks are near the southeast corner of the 292-T building addition. The 292-T building is south of the 291-T stack and north of 222-T.

Process Description: The 292-T building originally housed the 291-T stack gas sampling system and supported the 221-T off gas monitoring operations. When T plant was built, it was not known what material would escape during the reprocessing of the irradiated fuel. Accordingly the stack was equipped with state of the art monitoring equipment, including scrubbers containing 5% soda ash solutions that the stack effluent was passed through. The solution was dried using refrigeration, and then counted to determine Xenon-133 activity. Extensive reviews of documentation remaining from T Plant operations has not located any documents that quantify the amount of material that was placed in the tanks, but very little emphasis was placed on waste management at that time and it is doubtful that any documents were kept. In 1966, a

building addition was added to the existing structure to house a fuel element testing facility, operated by Battelle Northwest. During the lab upgrade, the two underground storage tanks were relocated from southeast of the original 292-T building to their present position, southeast of the 292-T building addition. Fuel failure analysis of irradiated fuel rods was conducted in 292-T in the 1960's and early 1970's. Irradiated N Reactor fuel rods were heated in an induction furnace until rupture or failure occurred. After the rupture occurred, the fuel was transported to the 300 area for further analysis. The fragments that remained in the oven were removed, and any material that remained on the oven surface was dissolved with nitric acid. It is doubtful that much if any of the aluminum clad was dissolved, since aluminum will not dissolve in nitric acid without the use of a catalyst. The solution of trace amounts of irradiated fuel and nitric acid was taken to 200 West Area and poured into the 292-T-TK-1 and 2 tanks through the risers. The solution in the tanks was then neutralized with sodium hydroxide. Neutralization caused the dissolved metals to precipitate and deposit in the tank bottoms.

Related Sites/ Structures: The site is associated with 291-T, 221-T, and the 292-T facility (200-W-40).

Waste Type: Storage Tank

Waste Description: Liquid waste was sent to these underground tanks from the 292-T building. Early waste consisted of solutions from the off gas monitoring scrubbers. Later waste was associated with experiments involving failure analysis of irradiated fuel rods. Irradiated N Reactor fuel rods were heated in an induction furnace until rupture or failure occurred. The slag that remained in the furnace was dissolved in nitric acid. A solution of dissolved irradiated fuel and nitric acid was discharged to 292-T-1 and 2. The solution was then neutralized with sodium hydroxide. Neutralization likely caused the dissolved metals to precipitate and deposit in tank bottoms. Dose rate directly above tanks was 2 millirem per hour in 1995.

Reported Date: October 9, 1995

Code: 200-W-58	Classification: Accepted
Names: 200-W-58; Z-Plant Diversion Box #1	Reclassification: None
Type: Valve Pit	Start Date:
Status: Inactive	End Date:
Description: The Z-Plant fenced exclusion area is covered with gravel. The concrete lid of the diversion box is visible above ground. The unit is buried to a depth of 2.7 meters (9 feet) with its upper surface (a thick concrete lid) being slightly above ground level.	
Location: The site is located south of 234-5Z, in between the two fences that make up the double enclosed Z-Plant exclusion area. It is directly south of the 361-Z settling tank.	
Process Description: The structure houses valves for routing liquid process waste to 216-Z-1, 216-Z-3, 216-Z-18 or 216-Z-12.	
Related Sites/ Structures: This structure is associated with pipelines 200-W-208-PL and 200-W-210-PL, 200-W-59, the 241-Z-361 settling tank, 216-Z-1, 216-Z-2, 216-Z-3, 216-Z-1A, 216-Z-12 and 216-Z-18.	
Waste Type: Process Effluent	
Waste Description: The structure directed the flow of Z Plant process waste to cribs and tile fields located south of the Z Plant complex.	

Code: 200-W-59	Classification: Accepted
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Names: 200-W-59; Z-Plant Diversion Box #2 **Reclassification:** None

Type: Valve Pit **Start Date:**

Status: Inactive **End Date:**

Description: The structure is buried with its concrete lid slightly above ground level. The Z-Plant fenced exclusion area is covered with gravel.

Location: The site is located southwest of the 234-5Z building, in between the two fences that make up the double enclosed Z-Plant exclusion area. It is west of the 216-Z-361 settling tank and directly north of the 216-Z-12 crib.

Process Description: This unit is a concrete box with a floor drain that apparently discharges to the soil column. The structure directed the flow of process waste via the 241-Z-361 settling tank to the 216-Z-12 crib.

Related Sites/ Structures: 200-W-59 is associated with pipeline 200-W-208-PL, 241-Z-361, 216-Z-12 and 200-W-58.

Waste Type: Process Effluent

Waste Description: This diversion box directed the flow of process waste to the 216-Z-12 crib.

Code: 200-W-84-PL **Classification:** Accepted

Names: 200-W-84-PL; U Plant Chemical Process Sewer to 216-U-14 Ditch; VCP Process Sewer; 200-W-84 **Reclassification:** None

Type: Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The majority of the waste site is an underground, 30 centimeter (12 inch) diameter and 46 centimeter (18 inch) diameter, vitrified clay pipeline. A 20 centimeter (8 inch) diameter process sewer line from 224-U and 222-U connects to the main process sewer line. It terminated at a timber headwall where the flow entered the 216-U-14 Ditch. The surface of the pipeline is marked with Underground Radioactive Material and Pipeline signs. At intervals along the pipeline, there are 1.2 meter, (4 foot) diameter, yellow manholes. Feed lines are listed as subsites.

Location: The underground process sewer line extends from the northwest side of the 221-U Building to the 216-U-14 Ditch. The line runs south, under 16th Street, and turns west until it intersects with the south end of the ditch. A pipeline from 224-U and 222-U extends along the northwest side of these buildings and connects to the main process sewer line in a manhole north of 16th street.

Process Description: The pipeline transported process sewer waste from 221-U, 224-U, 222-U and 291-U to the 216-U-14 Ditch. This pipeline bypasses the 207-U Retention basin.

Related Sites/ Structures: The pipeline is associated with the 221-U Plant, 224-U, 222-U, 291-U and the 216-U-14 Ditch. The 216-U-16 crib pipeline (200-W-170-PL) attaches to this process sewer line.

Waste Type: Process Effluent

Waste Description: The 216-U-14 Ditch received 221-U chemical sewer effluent (via this vitrified clay pipeline)

Description: From January 1952 through July 1984.

This Site has the Following SubSites:

Code: 200-W-84-PL:1
Names: 200-W-84-PL:1; 12-Inch VCP
Code: 200-W-84-PL:2
Names: 200-W-84-PL:2; 18-Inch VCP
Code: 200-W-84-PL:3
Names: 200-W-84-PL:3; 8-Inch VCP

Code: 200-W-84-PL:1 **Classification:** Accepted
Names: 200-W-84-PL:1; 12-Inch VCP **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The 12 inch diameter VCP line is located on the northwest side of 221-U. It ties to the 18 inch VCP portion of the process sewer at a manhole north of 16th Street.

The SubSite is Part Of:

Code: 200-W-84-PL
Names: 200-W-84-PL; U Plant Chemical Process Sewer to 216-U-14 Ditch; VCP Process Sewer; 200-W-84

Code: 200-W-84-PL:2 **Classification:** Accepted
Names: 200-W-84-PL:2; 18-Inch VCP **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The 18 inch portion of the process sewer begins at a manhole north of 16th Street and extends south and west to terminate in the 216-U-14 ditch.

The SubSite is Part Of:

Code: 200-W-84-PL
Names: 200-W-84-PL; U Plant Chemical Process Sewer to 216-U-14 Ditch; VCP Process Sewer; 200-W-84

Code: 200-W-84-PL:3 **Classification:** Accepted
Names: 200-W-84-PL:3; 8-Inch VCP **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The 8 inch VCP line is located on the northwest side of 224-U and 222-U (extending to 291-U). It ties into the main process sewer line at a manhole north of 16th Street.

The SubSite is Part Of:

Code: 200-W-84-PL
Names: 200-W-84-PL; U Plant Chemical Process Sewer to 216-U-14 Ditch; VCP Process Sewer; 200-W-84

Code: 241-WR VAULT **Classification:** Accepted
Names: 241-WR VAULT; 241-WR Vault (Tanks -001 Through -009); 241-WR-01 Thru 09; 244-WR Vault; 296-U-6 Stack; IMUST; Inactive **Reclassification:** None

Miscellaneous Underground Storage Tank;
241WR; 241-WR Diversion Station Vault

Type: Receiving Vault **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1976

Description: The vault is a below grade, reinforced concrete structure. There are nine compartments arranged in two rows with a 189,000 liter (50,000 gallon) tank in each compartment. A concrete wall separates the two rows of tanks. In addition to the tanks, the vault contains miscellaneous agitators, pumps, and valves. It is marked and posted with Underground Radioactive Material area signs. The exhaust stack and dry well are included in this site. See sub-site descriptions.

Location: This site is located northeast of the 221-U Building, west of Beloit Ave.

Release Description: Tank leaks within the vault were noted in the 1960's. 241-WR-001 was reported to have collapsed during the TBP operation (1952 - 1958) and was observed to be empty in 1965. However, the 001 sump contained 51,786 liters (13,700 gallons) of liquid. Samples taken at that time indicated the liquid to be slightly contaminated water. All of the sumps and tanks were pumped out in 1965. When tank 002 was pumped, it floated loose from its base, rupturing the lines connected to the tank. A significant clean up and repair effort was required to return the facility to service. Tanks WR-001, WR-002, WR-004 and WR-005 are suspected to have leaked. Individual specific occurrence reports were not issued. The "hot side" tanks have reportedly contaminated the "cold side" of the vault.

Process Description: During the WR vaults active operation, it stored uranyl nitrate hexahydrate, nitric acid, and tributyl phosphate wastes transferred to the resident storage tanks. During U Plant uranium recovery operations (1952 to 1958), uranyl nitrate hexahydrate was stored and used as feed for 221-U, recovered nitric acid was temporarily stored, and tributyl phosphate wastes were stored before routing to BC cribs and trenches via the Cross Site Transfer line. Following termination of uranium recovery operations in 1958, the vault was used to store nitric acid and thorium from REDOX and PUREX. In October 1965, contaminated water, including 3.14 kilograms of thorium, was discharged to 216-U-12 crib.

Related Sites/ Structures: The vault is associated with the 296-U-6 Stack, 221-U Plant processes, PUREX Facility, REDOX Facility, 241-UX-154 and BC Cribs and Trenches.

Waste Type: Process Effluent

Waste Description: The site waste contains nitric acid, tributyl phosphate, uranyl nitrate hexahydrate from the TBP process, and thorium nitrate storage. The unit also contains radioactively contaminated equipment and structures. Approximately 60 curies of beta contamination remains inside the vault structure.

This Site has the Following SubSites:

Code: 241-WR VAULT:1

Names: 241-WR VAULT:1; 296-U-6 Stack

Code: 241-WR VAULT:2

Names: 241-WR VAULT:2; 296-U-6 Dry Well

Code: 241-WR VAULT:1 **Classification:** Accepted

Names: 241-WR VAULT:1; 296-U-6 Stack **Reclassification:** None

Type: Receiving Vault **Start Date:**

Status: Inactive**End Date:**

Description: The surface features of the stack were removed. The remaining below grade structure includes a 1.04 meter (3 foot 8 inch) octagonal concrete foundation extending 1.23 meters (4 feet) below grade, which encases a portion of the 45.72 centimeter (18 inch) stack that extends 0.31 meters below grade. Above grade, a 5.08 centimeter (2 inch) drain pipe exits northwest side of the stack, under the duct, and enters the ground there. A 1.9 centimeter (0.75 inch) drain pipe exits the duct just before meeting the stack, and flows straight down meeting the 5.08 centimeter (2 inch) drain below grade. A 2.54 centimeter (1 inch) fan drain pipe exits the concrete foundation below the fan, above grade. This pipe enters the ground there and joins the 5.08 centimeter pipe to a 60.96 centimeter (24 inch) dry well. The 3.81 centimeter (18 inch), carbon-steel, 296-U-6 vault exhaust stack was mounted on a 1.04 meter (3 foot 8 inch) octagonal concrete foundation. The stack reached 14.63 meters (48 feet) above grade level. The stack was used to discharge unfiltered ventilation air from the storage of UNH for feed to 221-U, then from HNO₃ storage, and lastly from thorium storage.

The SubSite is Part Of:**Code:** 241-WR VAULT**Names:** 241-WR VAULT; 241-WR Vault (Tanks -001 Through -009); 241-WR-01 Thru 09; 244-WR Vault; 296-U-6 Stack; IMUST; Inactive Miscellaneous Underground Storage Tank; 241WR; 241-WR Diversion Station Vault**Code:** 241-WR VAULT:2**Classification:** Accepted**Names:** 241-WR VAULT:2; 296-U-6 Dry Well**Reclassification:** None**Type:** Receiving Vault**Start Date:****Status:** Inactive**End Date:**

Description: A 5.08 centimeter (2 inch) drain pipe runs from the north side of the concrete stack foundation, southeast to a 60.96 centimeter (24inch) dry well. The exact location of the dry well is not known. The dry well is located southeast of where the stack once stood.

The SubSite is Part Of:**Code:** 241-WR VAULT**Names:** 241-WR VAULT; 241-WR Vault (Tanks -001 Through -009); 241-WR-01 Thru 09; 244-WR Vault; 296-U-6 Stack; IMUST; Inactive Miscellaneous Underground Storage Tank; 241WR; 241-WR Diversion Station Vault**Code:** 241-Z**Classification:** Accepted**Names:** 241-Z; 241-Z Sump; 241-Z Tank Farm; 241-Z Tank Pit; 241-Z Treatment and Storage System; 241-Z Treatment and Storage Tanks; 241-Z-D-4; 241-Z-D-5; 241-Z-D-7; 241-Z-D-8**Reclassification:** None**Type:** Neutralization Tank**Start Date:** 1/1/1948**Status:** Inactive**End Date:**

Description: Site currently consists the below grade concrete vault containing four storage and treatment tanks. The above ground features have been removed. The site was activated on November 24, 1948. The RCRA TSD portion of this facility consists of the tanks (excluding D-6), the internal piping, the concrete vaults, ancillary equipment and the soil directly below the tanks. The external pipelines leading from buildings in 234-5Z to the 241-Z facility are not considered part of this site.

Location: The site is located inside the Z-Plant Security Fence, near the south end of the complex..

Description: wastes, pilot PUREX wastes, and wastes from strontium recovery efforts to tank farm facilities. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: UPR-200-E-3 **Classification:** Accepted

Names: UPR-200-E-3; Line Leak from 221-B to 241-BX-154; UN-200-E-3 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1951

Status: Inactive **End Date:**

Description: The release is not separately marked or posted.

Location: The release occurred on the south side of 221-B, between the 221-B Building and 241-BX-154.

Release Description: A failure of first-cycle waste line from the 221-B building to 241-BX-154 Diversion Box was identified. Efforts to excavate and inspect for the cause were abandoned when readings of 120 rads per hour were found with 46 centimeters (18 inches) of soil still remaining over the pipe.

Waste Type: Process Effluent

Waste Description: The release consisted of B Plant first cycle waste with dose rates up to 120 rad per hour at a distance of 0.4 meters (1.5 feet).

Code: UPR-200-E-7 **Classification:** Accepted

Names: UPR-200-E-7; Cave-In Near 216-B-9 (241-B-361 Crib); Pipeline Leak; UN-200-E-7 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1954

Status: Inactive **End Date:**

Description: The site is an unplanned release to the soil from a waste line break. A single metal post with a WIDS sign marks an estimated release location near the 216-B-9 crib.

Location: The Unplanned Release occurred on the east side of Baltimore Ave., near the 216-B-9 crib. The 216-B-9 Crib has an alias name of the 241-B-361 Crib. In 1954, a cave-in was noted over the underground line near the 241-B-361 crib.

Release Description: On November 30, 1954, leakage from the waste line between 221-B and the 241-B-361 crib (alias 216-B-9 crib) caused the ground to cave-in near the 241-B-361 crib. Approximately 19,000 liters (5000 gallons) of liquid was lost to the ground. The maximum dose rate observed was 1.7 rads/hour over an area covering 2.7 square meters (30 square feet). The contamination was covered and delineated with a chain fence. The area was posted with "Underground Contamination" signs.

Related Sites/Structures: Based on HW-60807, this release is assumed to be associated with pipeline site 200-E-199-PL.

Waste Type: Process Effluent

Waste Description: The release consisted of 18,925 liters (5000 gallons) of B Plant cell wash water from the 5-9 tank. The maximum dose rate was 1.7 rads/hour. Approximately, 2.8 square meters (30 square feet) of soil was contaminated by this release.

Code: UPR-200-E-42 **Classification:** Accepted

Names: UPR-200-E-42; 241-AX-151 Release; UN-200-E-42
Reclassification: None

Type: Unplanned Release **Start Date:** 1/1/1972

Status: Inactive **End Date:**

Description: A WIDS sign has been placed near the diversion box structure to document the release. The release area is surrounded with posts and chain. It is posted with multiple radiological postings including Radiation Area, Underground Radioactive Material Area and Contamination Area.

Location: The 241-AX-151 Diversion Box is located near the corner of 4th Street and Buffalo Ave., adjacent to the 204-AR Unloading Station. The unplanned release site included a dirt bank east of the 241-AX-151 Diversion Box and weeds east of the established parking lot.

Release Description: Surveys made at the 241-AX-151 Diverter Station on November 6, 1972 revealed direct and smearable contamination of 200 to 300 millirad per hour with a few spots in excess of 5 rad per hour. The green tape sealing the cover block cracks was contaminated to 20 rad per hour. The blacktop east of the diversion box was contaminated up to 3000 counts per minute. The dirt bank east of the posted radiation zone had contaminated spots up to 2000 counts per minute and weeds contaminated from 300 to 800 counts per minute. Follow up surveys indicate the contamination spread to be a result of a steam jet being left on at 244-AR, resulting in the pressurization of the 241-AX-151 Diverter Tank.

Process Description: 241-AX-151 routed waste from PUREX to the 244-AR Vault and to the 241-AY and 241-AZ Tank Farms.

Related Sites/Structures: The release is associated with 241-AX-151 and 244-AR.

Waste Type: Soil

Waste Description: The contamination spread consisted of specks with beta/gamma levels ranging 300 millirad per hour at the diversion box and from 300 to 3,000 counts per minute found on asphalt and soil surfaces in the vicinity of the 241-AX-151 diversion box.. The 241-AX-151 diversion box routed waste from PUREX to the 244-AR Vault and to the 241-AY and 241-AZ Tank Farms.

Code: UPR-200-E-45 **Classification:** Accepted

Names: UPR-200-E-45; Contamination Spread from the 241-B-154 Diversion Box; UN-200-E-45
Reclassification: None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: A large area on the northeast corner of 7th Street and Baltimore Avenue is surrounded with post and chain and marked as an Underground Radioactive Material (URM) area. The URM surrounds the 241-B-154 Diversion Box, that has been covered with a coating of gray grout. The original Unplanned Release is not separately marked or posted.

Location: The 241-B-154 Diversion Box is located at the corner of 7th Street and Baltimore Ave. The release involved loose contamination spreading in a southeasterly direction from the 241-B-154 Diversion Box.

Release Description: During a "clean out" operation at the 241-B-154 Diversion Box, wind spread loose contaminated around the work area. The activity involved decontaminating the inside of the diversion box and removing jumpers. The wind caused the spread of loose contamination over an area approximately 91.5 meters (300 feet) by 30.5 meters (100 feet). Five employees, a crane and a water truck were also contaminated. The ground surface between the diversion box

and 7th Street levels of contamination ranged from 1,000 counts per minute to 40,000 counts per minute. The contamination on 7th Street (blacktop) ranged from 800 counts per minute to 30,000 counts per minute. An area of contamination on the south side of 7th Street was found to have contamination levels ranging from 300 to 3000 counts per minute.

Related Sites/ Structures: This release is related to the 241-B-154 Diversion Box and UPR-200-E-77.

Waste Type: Process Effluent

Waste Description: Loose, dried, contamination particles (specks) were spread from the inside of the diversion box to the ground in the vicinity of 7th and Baltimore. The contamination spread included beta/gamma readings up to 50,000 counts per minute on the soil surface.

Code: UPR-200-E-67 **Classification:** Accepted

Names: UPR-200-E-67; Excavation of Radioactively Contaminated Pipe Encasement (V004, V005, V006, V007, V008); UN-200-E-67; UN-216-E-67 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1984

Status: Inactive **End Date:** 1/1/1984

Description: The 1984 excavation has been backfilled. A WIDS sign has been placed at the approximate location of the excavation.

Location: This site was located in an excavation site, north of the 272-AW parking lot, near the corner of 4th Street and Canton Ave.

Release Description: The release occurred on May 7, 1984. An old, contaminated pipe encasement was encountered during the excavation. Contamination levels ranged from 1 to 1.5 milirad per hour.

Process Description: An encased pipeline (containing lines V004, V005, V006, V007 and V008) extends between the 241-A-151 Diversion Box, south of PUREX, to the 241-A-152 Diversion box that is located inside the 241-A Tank Farm. (see sitecode 200-E-207-PL)

Related Sites/ Structures: The release is associated with pipeline site 200-E-207-PL.

Waste Type: Misc. Trash and Debris

Waste Description: The contamination levels consisted of beta/gamma readings ranging from 1,000 to 1,500 milliard per hour on the excavated pipe.

Code: UPR-200-E-77 **Classification:** Accepted

Names: UPR-200-E-77; 241-B-154 Diversion Box Ground Contamination; UN-200-E-77; UN-216-E-5 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1946

Status: Inactive **End Date:**

Description: A large graveled area on the northeast corner of 7th Street and Baltimore Avenue is surrounded with post and chain and marked as an Underground Radioactive Material (URM) area. The URM surrounding the 241-B-154 Diversion Box has been covered with a coating of gray grout (shotcrete). The area appears to have been posted in stages. A large posted oval area (URM)

approximate location of the release.

Location: The release site is located adjacent to the 241-TX-155 Diversion Box, approximately 244 meters (800 feet) east of the 241-TX tank farm and north of the 200 West Area Powerhouse Pond.

Release Description: Contamination has spread from the 241-TX-155 Diversion Box to the surrounding ground at various times in the 1950's. In the spring of 1954, a leak occurred from a one of the jumpers in 241-TX-155 Diversion Box causing the area to the west of the diversion box to become contaminated (see UPR-200-W-135). The area was covered with clean soil and temporarily posted as a radiation zone. The original fence and signs from 1954 are no longer present.

Process Description: The diversion box was constructed in 1949 and used to transfer waste solutions to and from various processing and decontamination facilities. Multiple releases have occurred at the diversion box and its related underground pipelines.

Related Sites/Structures: The release is associated with the 241-TX-155 Diversion Box and UPR-200-W-5, UPR-200-W-113, UPR-200-W-131 and UPR-200-W-135.

Waste Type: Process Effluent

Waste Description: Multiple releases from the 241-TX-155 Diversion Box and its associated underground pipelines has resulted in contamination being found in the soil in this vicinity. The contaminated area reference in HW-60807 was given an Unplanned Release number. However, the reference is describing an area where several release events occurred and not a particular event.

Code: UPR-200-W-29 **Classification:** Accepted

Names: UPR-200-W-29; 23rd and Camden Line Break; Transfer Line Leak; UN-200-W-27; UN-200-W-29; UN-216-W-5; UPR-200-W-27 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1954

Status: Inactive **End Date:**

Description: The area is currently surrounded with steel posts, covered with gravel and posted as an Underground Radioactive Material Area.

Location: The site is located at the southeast corner of the intersection of Camden Street and 23rd Street.

Release Description: On November 15, 1954, a broken, underground process line leading from the 241-T-152 Diversion Box to the 241-TX-153 Diversion Box caused a small cave-in (located 23 meters south of 23rd Street and 23 meters east of Camden Ave) over the pipeline. Run off from the release contaminated an area along the east side of Camden Street. An unencased, underground pipeline was being used to transport first cycle waste from the 241-T-105 tank to the 241-TX-118 tank for 242-T Evaporator processing. The waste transfer was begun around 2:45 pm on November 15, 1954, but was discontinued at 11:30 pm due to a leaking jumper. The cave in and waste runoff was not discovered until 10:00 am on November 16, 1954. A maximum dose rate of 11.5 rad per hour, at a distance of 5 centimeters (2 inches), was found over the run off area. It was calculated that less than 3,800 liters (1,000 gallons) of waste actually escaped from the line.

Related Sites/Structures: The release is associated with the 241-T-152 Diversion Box, UPR-200-W-64 and UPR-200-W-97. Pipelines 200-W-79-PL, 200-W-130-PL and 200-W-167-PL cross inside the radiologically posted area.

Waste Type: Process Effluent

Waste: The release consisted of first-cycle supernatant containing rare earth metals plus uranium

Description: cesium, antimony, cerium, ruthenium, niobium, and tellurium. Dose rates up to 11.5 rad per hour at 5 centimeters (2 inches), including 3.5 rad per hour, was measured over the run-off and fields up to 4.5 rad per hour at a distance of 0.9 meters (3 feet) near the cave-in was found. Less than 3,800 liters (1,000 gallons) of waste were estimated to have escaped from the line.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-27

Names: UPR-200-W-27; Duplicate of UPR-200-W-29; Transfer Line Leak at 23rd and Camden; UN-200-W-27; UN-216-W-5

Code: UPR-200-W-32

Classification: Accepted

Names: UPR-200-W-32; UN-200-W-32; UNH Transfer Line Break

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date:

Description: The release site is not currently marked or posted. The above ground pipeline has been removed.

Location: The release occurred near the northwest corner of the REDOX exclusion in 1954.

Release Description: During the summer of 1954, the above ground uranyl nitrate hexahydrate (UNH) transfer line connecting 224-U to REDOX broke, released an unknown amount of the UNH solution to the ground. The contaminated area was covered and marked as a radiation zone by use of magenta and yellow tape and radiation zone signs.

Related Sites/ Structures: The site is associated with the 204-S facility.

Structures:

Waste Type: Chemicals

Waste Description: Soil contamination occurred when an unknown amount of uranyl nitrate hexahydrate (UNH) solution leaked from a leak in an above ground pipeline.

Code: UPR-200-W-35

Classification: Accepted

Names: UPR-200-W-35; Ground Contamination Near UNH Process Line; REDOX to 224-U UNH Line Leak; UN-200-W-35

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1955

Status: Inactive

End Date:

Description: Much of the area north of REDOX has been surface stabilized. The unplanned release site is not marked or posted.

Location: The site was located along the above ground uranyl nitrate hexahydrate (UNH) process line, that ran from REDOX to U Plant, at a location just outside and to the north of the REDOX exclusion area.

Release Description: In September 1955, a leak occurred in the above ground uranyl nitrate hexahydrate (UNH) line from REDOX to U Plant. The area of surface contamination and the quantity or activity of contaminants were not mentioned in reference material.

Waste Type: Chemicals

Waste Description: The waste is described as an unknown amount and concentration/activity of uranyl nitrate

Description: hexahydrate (UNH) solution being routed from the Reduction Oxidation (REDOX) facility to the U Plant.

Code: UPR-200-W-38 **Classification:** Accepted

Names: UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C; UN-200-W-38; UPR-200-W-160 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The area around the 241-TX-154 diversion box and the catch tank has been stabilized with sprayed concrete (shotcrete). The area is posted with Underground Radioactive Material signs. A WIDS sign has been placed at this location.

Location: The release occurred on the southeast side of T Plant (221-T), between the 241-TX-154 Diversion Box and the 241-TX-302 Catch Tank. The liquid release affected a large area between the 221-T and 222-T buildings.

Release Description: On December 30, 1955, a failure of an underground transfer line between the 241-TX-154 diversion box and the 241-TX-302 catch tank flooded an area approximately 139.35 square meters (1500 square feet) with radioactive metal waste solution. Contamination was spread during cleanup activities and increased the size of the contamination area to approximately 371.6 square meters (4,000 square feet). The incident report indicates that the volume of metal waste involved "appeared to be in the magnitude of several thousand gallons". Prior to this incident, the area had been covered with asphalt because of a previous contamination spread. The liquid was forced up through several feet of soil and pooled on top of this asphalt. An unreported thickness of soil was backfilled onto the area to prevent further contamination spread. It is reported that a hose with 33 rads/hour contamination was buried in the backfill. Additional asphalt was to be laid on top of the fill for contamination control.

Process Description: The 241-TX-302C Catch Tank collects drainage from the 241-TX-154 Diversion Box.

Related Sites/Structures: The release is associated with the 241-TX-154 Diversion Box and the 241-TX-302C Catch Tank. UPR-200-W-21 occurred in the same vicinity in 1953.

Waste Type: Process Effluent

Waste Description: The 1955 release of liquid metal waste produced beta/gamma with a dose rate of 100 rad per hour at a distance of 1 foot (0.3 meters) above the contamination pool. Several thousand gallons of waste was lost to the ground. HW-60807 estimated the release to be 7520 liters (2000 gallons) RHO-CD-673 estimated 19,000 liters (5026 gallons). The waste was high in salt and is neutral to basic. The initial surface pool of liquid was estimated to be 9 meters (30 feet) by 4.5 meters (15 feet).

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-21

Names: UPR-200-W-21; Process Line Cave-in at 241-TX-154 Diversion Box; UN-200-W-21; UN-216-W-36

Code: UPR-200-W-40

Names: UPR-200-W-40; 216-T-30; Line Break Near 241-TX-154; UN-200-W-40; UPR-200-W-160; UPR-200-W-38

Code: UPR-200-W-160

Names: UPR-200-W-160; UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C

Code:	UPR-200-W-64	Classification:	Accepted
Names:	UPR-200-W-64; Road Contamination at 23rd and Camden; UN-200-W-64	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1969
Status:	Inactive	End Date:	
Description:	The corner of 23rd and Camden has been stabilized with clean gravel due to two waste line leak events. The stabilized area is surrounded with chain and posted with Underground Radioactive Material signs. The road shoulders are not posted. A WIDS sign has been placed at the approximate location of the release.		
Location:	The release is located between the east shoulder of Camden Avenue and the posted Underground Radioactive Material area (UPR-200-W-29/UPR-200-W-97), near the corner of 23rd Street and Camden Ave.		
Release Description:	On February 13, 1969, contamination up to 600 counts per minute was found in mud samples next to Camden Avenue. The contamination was found to be on the shoulder of the roadway, but no detectable contamination was found on the road blacktop. It is believed that the contamination source was the adjacent radiation zone (UPR-200-W-29 and UPR-200-W-97) where two previous underground radioactive waste line leaks that occurred. Runoff from heavy snow may have caused the contamination movement. Dirt samples from the radiation zone to the east and roadway shoulder samples showed cesium-137 to be the only detectable radioactive isotope.		
Related Sites/ Structures:	UPR-200-W-29 and UPR-200-W-97 are the apparent source of contamination for this release.		
Waste Type:	Process Effluent		
Waste Description:	Mud samples collected in 1969 contained mostly cesium-137, with readings up to 600 counts per minute. No volume estimate was provide. The contamination source appears to be rain water run off from the adjacent area where two process line leaks occurred (see UPR-200-W-29 and UPR-200-W-97). The line leaks included first-cycle supernatant containing rare earth metals plus yttrium, cesium, antimony, cerium, ruthenium, niobium, and tellurium.		

Code:	UPR-200-W-97	Classification:	Accepted
Names:	UPR-200-W-97; Transfer Line Leak; UN-200-W-97; UN-216-W-5	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1966
Status:	Inactive	End Date:	1/1/1966
Description:	The site is located at the corner of 23rd Street and Camden Ave. It is marked and posted as "Underground Radioactive Material". The release site was stabilized with clean soil, sand, ureabore herbicide, and crushed rock.		
Location:	The release occurred southeast of the 241-T Tank Farm at the corner of 23rd Street and Camden Avenue.		
Release Description:	In May 1966, liquid waste surfaced and ran to the edge of Camden Avenue. This is the same location of UPR-200-W-29, a waste transfer line break that occurred in 1954. This release occurred when the broken waste line was mistakenly tested, causing liquid waste to surface again.		
Related Sites/ Structures:	UPR-200-W-97 is associated with the underground pipeline connecting 241-T-152 Diversion Box and the 241-TX-153 Diversion Box. It occurred at the same location as UPR-200-W-29		

and adjacent to UPR-200-W-64. The site is associated with UPR-200-W-29 because a repeat release from the same broken transfer line (documented in UPR-200-W-29 in 1954) occurred again in 1966.

Waste Type: Process Effluent

Waste Description: The waste released to the soil consisted of a high salt, neutral to basic liquid tank waste solution containing approximately 10 curies of fission products. The waste consisted of second cycle bismuth phosphate waste from the 241-T-107 tank. The maximum surface dose rate was 5 rad per hour beta/gamma with 3 rad per hour being gamma radiation.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-62

Names: UPR-200-W-62; Duplicate of UPR-200-W-97; Line Leak at 23rd and Camden; UN-200-W-62; UN-216-W-5

Code: UPR-200-W-98

Classification: Accepted

Names: UPR-200-W-98; 221-T Waste Line Break at R-19; UN-200-W-98; UN-216-W-6

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1945

Description: The area around door R-19 is paved with asphalt and posted as an Underground Radioactive Material area. There is not a sign that specifically marks the area as an unplanned release site.

Location: The release site is located near the southeast corner of the 221-T Canyon Building, at door R-19.

Release Description: In the spring of 1945, a leak occurred in an underground metal waste transfer line. The liquid surfaced and spread mixed fission contamination over a small surface area of ground.

Process Description: Underground pipelines carried T Plant process material and waste to various destinations. More than one pipeline leak occurred in this area.

Related Sites/Structures: UPR-200-W-98 was associated with underground UPR pipelines near the R-19 section of the 221-T Canyon Building and UPR-200-W-2.

Waste Type: Process Effluent

Waste Description: A broken underground process transfer line caused contaminated liquid to surface near R-19 at 221-T. The "metal waste" line contained approximately 10 curies of high salt, neutral to basic fission products with a maximum dose rate of 20 rad per hour at 2 inches (5 centimeters).

Code: UPR-200-W-102

Classification: Accepted

Names: UPR-200-W-102; 224-T Underground Line Leak; UN-200-W-102; UN-216-W-12

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1972

Status: Inactive

End Date: 1/1/1972

Description: The east and south sides of the 224-T Building are covered with gravel. The area along the east side of the 224-T building is posted as an Underground Radioactive Material area.

Location: UPR-200-W-102 occurred adjacent to the south and east sides of the 224-T Building.

Release Description: During the remodeling of the 224-T Building, gross alpha contamination was found in the soil on the back side of the building. This contamination is believed to have come from alpha-laden

moisture that seeped through pipe joints from underground process tank vent lines during the years of process operation.

Related Sites/ Structures: UPR-200-W-102 is associated with underground process lines at the 224-T Building. See 200-W-226-PL.

Waste Type: Process Effluent

Waste Description: The release consisted of alpha-laden moisture from process tank lines that contaminated the soil around the pipeline. An estimated 72 grams of plutonium was contained in the contaminated soil that was removed when the leak was discovered.

Code: UPR-200-W-108 **Classification:** Accepted

Names: UPR-200-W-108; Line Leak at 216-S-9 Crib; UN-200-W-108; UN-216-W-18 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1969

Status: Inactive **End Date:** 1/1/1969

Description: The release site is posted as a "Surface Contamination Area". The excavation was filled after the work was completed.

Location: UPR-200-W-108 occurred at the junction of the 216-S-9 and 216-S-23 Crib Liners, south of the 216-S-9 Crib and approximately 61 meters (200 feet) north of Thirteenth Street.

Release Description: On January 8, 1969, during the tie-in of the 216-S-9 Crib waste line to the new 216-S-23 Crib, contaminated water was encountered coming from a break at the junction of the two crib lines. Further excavation disclosed a severe expansion buckle in the line at that point, and a similar buckle in the line near the 202-S Building. There is no way of determining how long the line had been leaking or how much waste was discharged to the ground.

Related Sites/ Structures: UPR-200-W-108 was associated with pipeline 200-W-139-PL, the 216-S-9 Crib, the REDOX D-2 Receiver Tank, the 240-S-151 Diversion Box, the 216-S-23 Crib and UPR-200-W-109.

Waste Type: Process Effluent

Waste Description: The waste was REDOX process condensate from the D-2 Receiver Tank in the 202-S Building with beta and gamma contamination and dose rate readings of 40 rads/hour at the bottom of the waste line.

Code: UPR-200-W-109 **Classification:** Accepted

Names: UPR-200-W-109; Waste Line Leak Near 218-W-9; UN-200-W-109; UN-216-W-19 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1969

Status: Inactive **End Date:** 1/1/1969

Description: The release was a transfer line break that occurred within the east chain barricade of the 218-W-9 Burial Ground. The 218-W-9 Area was interim stabilized in 1991 with 46 to 61 centimeters (18 to 24 inches) of uncontaminated backfill. The release site was covered with soil and revegetated along with 218-W-9.

Location: UPR-200-W-109 occurred just inside the east perimeter chain of the 218-W-9 Burial Ground, south of which is located north of the 216-S-7 Crib in 200 West Area.

Release Description: UPR-200-W-109 is related to the UPR-200-W-108 incident. After repairing the initial buckled portions of the waste line, a pressure test indicated another leak in the line at some point

upstream toward the 202-S Building. Further excavation and pressure testing finally determined a leak to be somewhere between the first discovered leak and the northwest corner of the REDOX area fence. Additional hydrostatic testing finally forced water to bubble to the ground surface. Excavation of the bubble site disclosed a vertical buckling of the pipeline with a sizable break in the line. The buckled and broken waste transfer line was from the 240-S Diversion Box. Dose rates on the liquid were 450 millirads per hour, but as the liquid sank into the ground, the dose rate dropped to 20 millirem per hour.

Related Sites/ Structures: UPR-200-W-109 is associated with the 218-W-9 Burial Ground, UPR-200-W-108, 216-S-7, 216-S-23, the D-2 Receiver Tank in the 202-S Building, and the 240-S Diversion Box.

Waste Type: Process Effluent

Waste Description: The waste was process condensate containing acidic unknown beta and gamma contamination. It came from the D-2 Receiver Tank in the 202-S Building. Dose rates of the liquid were 450 millirads/hour at the surface. As the water sank back into the ground, surface dose rates dropped to 20 millirads/hour.

Code: UPR-200-W-113 **Classification:** Accepted

Names: UPR-200-W-113; Contamination Areas Around 241-TX-155 Diversion Box; Soil Contamination East of 241-TX; UN-200-W-113; UN-216-W-23 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1977

Status: Inactive **End Date:**

Description: The original contaminated area was surface stabilized in 1990. It is currently surrounded with concrete marker posts and posted as an Underground Radioactive Material area. In 1998, 1999 and 2000 additional surface contamination was identified in the vicinity of the original surface stabilized area. Smaller contamination areas on the north, south, east and west sides of the 241-TX-152 and 241-TX-155 diversion boxes. At that time, the additional contamination areas were considered extensions of UPR-200-W-113. Many of the contamination areas were found above underground transfer lines going into and out of the 241-TX-155 Diversion Box. They were originally labeled with UPR-200-W-113 signs. Some of the "UPR-200-W-113" signs are being replaced as more information is documented that ties posted contamination areas with other documented Unplanned Releases and pipeline sites that were added to WIDS in 2007.

Location: The site is an area east of the 241-TX Tank Farm, on the east side of Camden Ave. Several radiological posted, labeled UPR-200-W-113, areas are located north, south, west and east of the 241-TX-155 and 241-TX-152 Diversion Boxes.

Release Description: The original unplanned release description stated that during the spring and summer months of 1977, contaminated rabbit feces were found near the 241-TX-155 Diversion Box, prompting an extensive survey to determine the source of radioactive rabbit food. During this survey, low-level, beta/gamma ground surface contamination was found on the hillside below and to the west of the 241-TX-155 Diversion Box. As soil was removed in the attempt to decontaminate the site, radioactivity increased until it was evident that the source of contamination was subsurface, possibly an old leak from a nearby waste transfer line. In August 1977, Unusual Occurrence Report 77-180 was issued, documenting the contaminated rabbit feces problem. This discovery is also detailed in UPR-200-W-76.

Process Description: Underground pipelines transferred tank waste between tank farms through diversion boxes. Many pipelines leaked, allowing plant and animal intrusion to spread contamination to the surface.

Related Sites/ The site is associated with the 241-TX-155 Diversion Box, 241-TX-152, UPR-200-W-28, UPR-

**Related Sites/
Structures:** 200-W-76, UPR-200-W-135 and associated underground pipelines going into and out of the 241-TX-152 and 241-TX-155 diversion boxes.

Waste Type: Animal Waste

Waste Description: Contaminated animal feces and growing contaminated vegetation have been found in this area. The biological uptake is the result of multiple releases in this area associated with the 241-TX-155 Diversion Box and its underground pipelines.

Code: UPR-200-W-114 **Classification:** Accepted

Names: UPR-200-W-114; Ground Contamination East of 241-SX Tank Farm; UN-200-W-114; UN-216-W-24 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site is no longer marked or posted. The release site, for many years, had been a large area posted with a light chain and Surface Contamination Area signs. The 216-S-8, the 216-S-1, and the 216-S-2 cribs were located within the larger contamination zone. The surface contamination was scraped up and consolidated into other nearby waste sites. The cribs were individually surface stabilized and reposted with Underground Radioactive Material signs.

Location: UPR-200-W-114 was located east of the 241-SX Tank Farm.

Release Description: The site consisted of migrating radioactive particulate matter from operational activities at the 241-SX Tank Farm and the 241-SX-151 and 241-S-151 Diversion Boxes over many years. The contamination spread to the ground surface east of the 241-SX Tank Farm. The resulting large posted Surface Contamination Area (SCA) was assigned an unplanned release number in 1980.

**Related Sites/
Structures:** UPR-200-W-114 was associated with multiple releases from operation activities in the 241-SX Tank Farm, and the 241-SX-151 and 241-S-151 Diversion Boxes. Documented operational releases extending eastward from the tank farm include UPR-200-W-20, UPR-200-W-49, UPR-200-W-50, UPR-200-W-51, UPR-200-W-52, and UPR-200-W-82.

Waste Type: Soil

Waste Description: The waste consisted of radioactive particulate matter from operational activities in the adjacent 241-S/SX Tank Farms.

Code: UPR-200-W-115 **Classification:** Accepted

Names: UPR-200-W-115; Ground Contamination Above Transfer Line Along Cooper Street; UN-216-W-25 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site had been delineated with light chain barricade and Surface Contamination warning signs. A waste site inspection, done in February 1998, found the area has been covered with gravel and posted as an Underground Radioactive Material area.

Location: UPR-200-W-115 is located above the encased transfer line that runs along the east side of Cooper Street. The pipeline (sitecode 200-W-179-PL) extends between the 242-S Evaporator Facility and the 241-U Tank Farm.

Release Description: The release refers to the radiologically posted soil above the underground, encased transfer line that runs from the 242-S Evaporator Building to the 241-U Tank Farm. In 1981, Harold

Maxfield stated that he believed the area was incorrectly designated as an unplanned release. He based his opinion on a radiation survey performed on October 7, 1981. The survey report indicated the soil and the surface features of the pipeline (Clean Out Boxes) were free of removable contamination. The report stated the only radiation detected was a dose rate emitting from the Clean Out Boxes. There was no evidence of loss of radiological control at that time.

Process Description: The site is considered to be the soil above an encased transfer line extending from the 242-S Evaporator to the 241-U Tank Farm. The pipeline is equipped with a series of Clean Out Boxes (COBs) along the length of the line to allow access into the pipeline.

Related Sites/Structures: The release site was associated with the encased transfer lines from the 242-S Evaporator Building to 241-U. The pipelines associated with this release are discussed in sitecode 200-W-179-PL.

Waste Type: Soil
Waste Description: The soil was contaminated with material from the transfer line Clean Out Boxes.

Code: UPR-200-W-130 **Classification:** Accepted

Names: UPR-200-W-130; Line Leak at 231-W-151 Sump; UN-200-W-130 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1967

Status: Inactive **End Date:** 1/1/1967

Description: A WIDS sign has been placed at the approximate location of the release.

Location: UPR-200-W-130 occurred in the soil on the east side of the 231-W-151 Sump, near the 231-Z Building.

Release Description: While hand excavating to uncover a waste line adjacent to the 231-W-151 Diversion Box, contamination was detected in the soil. The soil adjacent to the waste line contained 40,000 disintegrations per minute alpha contamination, and 150 millirem per hour beta/gamma contamination. The release was due to a leaking flange. The dose rate on the waste line was 1.5 rad per hour.

Related Sites/Structures: UP-200-W-130 was associated with a waste line, the 231-W-151 Sump and the 231-Z Building.

Waste Type: Process Effluent
Waste Description: The soil had alpha readings up to 40,000 disintegrations per minute, with dose rates of 100 millirem/hour of beta and 50 millirem/hour of gamma.

Code: UPR-200-W-131 **Classification:** Accepted

Names: UPR-200-W-131; Release from 241-TX-155 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1953

Description: The 241-TX-155 Diversion Box and 241-TX-302B Catch Tank are surrounded with post and chain. Clean gravel has been placed around the diversion box with Underground Radioactive Material and Bio Barrier signs. A single, UPR-200-W-131 WIDS sign is attached to the chain boundary.

Related Sites/ Structures: UPR-200-W-135 is associated with the 241-TX-155 Diversion Box, 241-TX-302B Catch Tank and pipeline 200-W-191-PL.

Waste Type: Process Effluent

Waste Description: The leaking connector (U-15) associated with this release was transferring blended metal waste supernatant from the 244-UR vault to the 241-WR vault when the leak occurred. The amount of liquid released is estimated, since the cave-in was discovered 10 days after the last transfer was made.

Code: UPR-200-W-161 **Classification:** Accepted

Names: UPR-200-W-161; Large Area East of 241-U Tank Farm; UN-200-W-161; UN-216-W-35 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1990

Status: Inactive **End Date:**

Description: The site is a large radiologically controlled area posted with Underground Radioactive Material signs. A WIDS number sign has been posted at this location.

Location: The site is located east of 241-U Tank Farm, on the east side of Camden Ave. It extends northward from the corner of 16th Street and Camden Ave. and the 241-U-152 Diversion Box.

Release Description: During a January 12, 1990 radiation survey, an area of approximately 1.9 acres (0.77 hectares) east of the 241-U Tank Farm (and west of the 216-U-14 Ditch) was found to be contaminated. The general contamination was 250 to 450 counts per minute with spots of 600 to 800 counts per minute. One area, approximately 1.5 meters (5 feet) long by 1.5 meters (5 feet) wide, was contaminated up to 8,000 counts per minute. No Occurrence Report was issued, but the area was submitted to the WIDS database on 3-23-90 as an Unplanned Release Site and given the number UN-216-W-35.

Related Sites/ Structures: UPR-200-W-161 is associated with the 241-U Tank Farm. Two pipelines associated with tank farm operations are buried in this approximate location (see 200-W-130-PL and 200-W-182-PL).

Waste Type: Soil

Waste Description: Windblown contaminated particles effected the area east of 241-U tank farm. Soil sample results from 1990 indicate that the main radionuclide is strontium (2.93 E3 picocuries per gram). Other contaminants included 6.26 picocuries per gram of cesium-137, 3.27 picocuries per gram of plutonium and 2.6 E-07 grams per gram of uranium. Because this site is associated with the 241-U Tank Farm, the waste is assumed to be mixed waste.

Code: UPR-200-W-164 **Classification:** Accepted

Names: UPR-200-W-164; Overhead UNH Line Leak; UN-216-W-29 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The above ground UNH line has been removed. The Radiation Area signs that surrounded the pipeline were also removed. A portion of the site was interim stabilized in 1993. An area of contaminated soil found under the steam line, adjacent to the 216-S-9 crib, was covered with clean soil and posted with "Underground Radioactive Material" warning signs.

Location: UPR-200-W-164 effect the soil beneath the aboveground uranyl nitrate hexahydrate (UNH) pipeline that extended from 204-S to 224-U. The UNH line was attached to a steam line,

located north of 204-S.

Release Description: The above ground uranyl nitrate hexahydrate transfer line that extended from the 204-S Storage Tanks to the 224-U Building (hung from an existing steam line) was posted as a radiation zone from 1952 to 1967. The zone was established because of a low-level gamma field (dose rate) emanating from the transfer line. The September 1981 correspondence from Harold Maxfield states he believes the area was incorrectly designated as an Unplanned Release, because the posting was necessary due to a dose rate condition and not a release. Later, a small area of soil contamination was identified under the steam line, adjacent to the 216-S-9 crib.

Process Description: The unplanned release site was an area of soil beneath an above ground uranyl nitrate hexahydrate transfer line that was hung from existing steam pipes.

Related Sites/ Structures: UPR-200-W-164 was associated with the above ground UNH transfer line from the 204-S Storage Tanks to the 224-U Building.

Waste Type: Soil

Waste Description: The original Unplanned Release was described as the gamma field (dose rate) emanating from the above ground uranyl nitrate hexahydrate (UNH) transfer line. Later, a small area of soil contamination was found under the steam line that the above ground line had been attached. Liquid UNH apparently had dripped onto the soil on an area located adjacent to the 216-S-9 crib.

Code: UPR-200-W-167 **Classification:** Accepted

Names: UPR-200-W-167; Contamination Migration from 241-TY; UN-216-W-32 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:**

Description: The original release site, identified in 1985, was a soil contamination area located adjacent to the east side of the 241-TY Tank Farm. After the contamination was scraped and removed in 1986, the site was no longer marked or posted. Later, in 2000, three areas on the east and northeast sides of the 241-TY Tank Farm (within the original boundaries of this Unplanned Release) were reposted as Contamination Areas (CA). Contaminated ant hills and growing contaminated vegetation was found on top of a tank farm transfer line located outside the eastern tank farm fence (also see WIDS sitecode 200-W-78). In November 2000, the CA's were covered with bio-barrier material and gravel. These areas were reposted with Underground Radioactive Material signs. The underground radioactive pipeline is marked with posts and "Radioactive Pipeline" signs. The pipeline runs through the recently stabilized areas.

Location: UPR-200-W-167 was located adjacent to the 241-TY Tank Farm fence, extending east and north from the fence.

Release Description: In 1985 the contamination associated with UPR-200-W-167 was assumed to be the result of migration of contamination from 241-TY Tank Farm operations over a period of time.

Related Sites/ Structures: UPR-200-W-167 was associated with the 241-TY Tank Farm operations and WIDS sitecode 200-W-78.

Waste Type: Soil

Waste Description: The waste consisted of radioactive contamination (specks) that migrated from the 241-TY Tank Farm. Later, contaminated ant hills and contaminated vegetation were also found in this area.

200-OA-1

Code: 200 CP **Classification:** Accepted

Names: 200 CP; Hanford Site Gravel Pit 29; 200 Area Construction Pit; 200 Area Construction Waste Site **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1955

Description: The site is a large, open gravel area. The pit is no longer being used as a source of gravel. The 2704HV parking lot was placed over a portion of the original pit.

Location: The pit is located west of the west perimeter fence of 200 East Area and northwest of the 2704HV building.

Process Description: The pit has been used as a source of gravel for various Hanford projects. Several truck loads of nonhazardous solid waste, broken blocks of concrete foundation and other debris have been reported to have been placed in the pit over the years.

Waste Type: Construction Debris

Waste Description: Several truck loads of broken blocks of concrete foundations and other structures have been dumped into this gravel pit during the past several years. There have been no known chemicals dumped into this unit.

Code: 216-B-3-1 **Classification:** Accepted

Names: 216-B-3-1; B Swamp Ditch; 216-B-2; 216-B-2E; 216-B-3 Ditch **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1964

Description: The head end is located outside the 200 East perimeter fence, east of 218-E12A Burial Ground. The ditch continues due east to the 216-B-3 Pond. The constructed ditch was approximately 1250 feet long. It widened into a swamp before entering the 216-B-3 Pond. The site is currently backfilled and surface stabilized. It is located within a large posted Underground Radioactive Material area that also includes the 216-B-3-2 backfilled ditch.

Location: The ditch is located east of the 200 East Area perimeter fence.

Process Description: The ditch received B Plant effluent from the 216-B-2-1 ditch and Purex effluent via a diverter that divided the flow between Gable Pond and B Pond. The 216-A-29 Ditch entered the B Swamp near the east end of the 216-B-3-1 Ditch.

Related Sites/Structures: The site is associated with B Plant and PUREX facilities, UPR-200-E-34 and 216-B-2-1. It was fed by the 200-E-126-PL pipeline.

Waste Type: Process Effluent

Waste Description: Until March 1962, the site percolated and transported 221-B Plant steam condensate, process cooling water, chemical sewer waste, and 284-E Powerhouse waste. From March 1952 to November 1955, the site percolated and transported the above-listed streams plus 241-CR Vault cooling water. From November 1955 to December 1957, the site percolated and transported the above-listed streams plus effluent from 216-A-29 Ditch. Wastes include 202-A process cooling water and chemical sewer waste. From December 1957 to February 1958, the site percolated

and transported the above-listed streams minus 202-A process cooling water. From February 1958 to December 1962, the site percolated and transported the above-listed streams plus 202-A Acid Fractionator condensate. From December 1962 to December 1963, the site percolated and transported the above-listed streams plus 202-A seal cooling water from air sampler vacuum pumps. After December 1963, the site percolated and transported the above-listed streams minus 202-A seal cooling water.

Code:	216-B-3-2	Classification:	Accepted
Names:	216-B-3-2; B Swamp Ditch; 216-B Ditch; 216-B-1 Ditch; 216-B-2-2E	Reclassification:	None
Type:	Ditch	Start Date:	1/1/1964
Status:	Inactive	End Date:	1/1/1970
Description:	The ditch has been backfilled and surface stabilized. It is located within a large Underground Radioactive Material Area that includes the 216-B-3-1, 216-B-3-2 and 216-B-3-3 covered ditches. The unit was open from the diverter station to the 216-B-3 Pond and was approximately 1.2 to 2.4 meters (4 to 8 feet) deep. It was backfilled in July 1970 after a release of strontium-90 from 221-B Plant.		
Location:	The ditch is located east of the 200 East Area perimeter fence. The ditch began east of the eastern 200 East Area perimeter fence and continued eastward to 216-B-3 Pond.		
Release Description:	UPR-200-E-138: On March 22, 1970, an estimated 1,000 curies strontium-90 release occurred at B Plant during an attempted measurement of the liquid level in Tank 8-1.		
Process Description:	The ditch received effluent from B Plant and PUREX and transported it to the 216-B-3 Main Pond.		
Related Sites/Structures:	The site is associated with 216-B-2-2, 216-B-3 and UPR-200-E-138.		
Waste Type:	Process Effluent		
Waste Description:	Until January 1965, the site transported 221-B Plant process cooling water, steam condensate, and chemical sewer; 241-CR Vault cooling water; 284-E Powerhouse water; and received and transported 202-A chemical sewer waste and fractionator condensate from 216-A-29 Ditch. From January 1965 to January 1966, the site transported the above mentioned streams plus 241-TY Tank Farm ITS Unit 1 condenser cooling water. From January 1966 to November 1967, the site transported the above mentioned streams plus condenser cooling water and air sampler vacuum pump seal cooling water from 202-A Building. From November 1967 to February 1968, the site transported the above mentioned streams minus 284-E Powerhouse wastewater. After February 1968, the site transported the above mentioned streams plus 241-BY Tank Farm ITS Unit 2 condenser cooling water.		

Code:	216-B-3-3	Classification:	Accepted
Names:	216-B-3-3; 216-B-3-3 Ditch; B Swamp Ditch	Reclassification:	None
Type:	Ditch	Start Date:	1/1/1970
Status:	Inactive	End Date:	1/1/1994
Description:	The ditch has been backfilled and surface stabilized. It is posted as an Underground Radioactive Material area.		
Location:	The ditch is located east of the 200 East Area perimeter fence. It continued east to 216-B-3		

Pond, south of the 216-B-3-2 Ditch.

Release Description: UPR-200-E-51 occurred in 1977.

Process Description: The ditch received effluent from the B Plant and PUREX facilities. The unit was an open ditch from the diverter station to the 216-B-3 Pond. The unit was 1.2 to 2.4 meters (4 to 8 feet) deep and 0.3 meters (3 feet) wide at the bottom. The 216-A-29 Ditch fed into this unit approximately 305 meters (1,000 feet) upstream of the 216-B-3 Pond outfall.

Waste Type: Process Effluent

Waste Description: Until July 1973, the site transported and percolated 221-B cooling water, 202-A chemical sewer from the 216-A-29 Ditch, 241-BY Tank Farm ITS Units 1 and 2 cooling water, and 244-CR Vault cooling water. From July 1973 to May 1978, the site received the same as above minus ITS Units 1 and 2 cooling water. From May 1978, the site received 221-B cooling water and 202-A chemical sewer from the 216-A-29 Ditch.

Code: 200-E-1

Classification: Accepted

Names: 200-E-1; 284-E Landfill

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: There is no visible evidence of a landfill at this location. A covered concrete pad has been built over the area where the landfill was supposed to be located.

Location: The site is located west of 284-E building.

Process Description: The unit consists of asbestos waste encountered during below grade trenching activities.

Related Sites/ Structures: The site is associated with the 284-E Powerhouse.

Waste Type: Asbestos (friable)

Waste Description: The waste at this unit consists of asbestos.

Code: 200-E-2

Classification: Accepted

Names: 200-E-2; MO-234 Parking Lot; Soil Stains at the 2101-M SW Parking Lot

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was originally described as a gravel covered parking lot that contained discolored soil. Two large dark circular stains were visible in front of the access ramp at the south end of MO-234.

Location: The site is at the northwest corner of the intersection of Baltimore and 2nd Street, in 200 East Area. The site is bound by MO-234 to the north and MO-413 and MO-021 to the west.

Process Description: The parking lot is actively being used for vehicle parking. Personnel that may have knowledge of past disposal in this unit were interviewed. Based on these interviews, the unit was used as a parking lot for the Telephone and Utilities Department. Used oil has been used for dust abatement; no other dumping is known to have occurred.

Waste Type: Oil
Waste Description: The unit waste includes used oil for dust abatement. BHI Regulatory Support (B. Vedder) had two concerns about the site. Polychlorinated biphenyls (PCBs) were the biggest concern and heavy metals of lesser concern. PCBs were common in high heat grade hydraulic fluids. Unless there is some strong evidence that only used vehicle motor oil was applied, this site will need to be sampled to verify that there is no PCB contamination. On August 24, 2006, sample number B1KH90 was collected and analyzed at WSCF lab.

Code: 200-E-7 **Classification:** Accepted
Names: 200-E-7; 2607-EO Septic Tank & Tile Field **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1994
Status: Active **End Date:**
Description: The tank is part of the 2607-EP System. Current and proposed additions to this system bring its design daily flow to 20,440 liters (5400 gallons). The tank was pre-fabricated with a 1500 gallon first chamber and a 1000 gallon second chamber. The associated septic field has been abandoned.
Location: This septic tank/pump station is located west of the 2711-E building (Automotive Garage and Shop) and north of 4th Street.
Process Description: As of 1996, the tank serviced 2711-E, but is capable of supporting additional facilities.
Waste Type: Sanitary Sewage
Waste Description:

Code: 200-E-46 **Classification:** Accepted
Names: 200-E-46; Debris Southeast of 282-E; RCRA Permit General Inspection #200EFY96 Item #3 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site appears to be an old lay down area. Scattered debris is visible over a large area.
Location: The site is located on both sides of the dirt road approximately 183 meters (600 feet) southeast of the 282-E Reservoir building and running along the south side of the railroad spur.
Waste Type: Misc. Trash and Debris
Waste Description: Materials observed at the site include wire rope, a steel railroad rail, a metal bar, wood, fiberglass insulation, aluminum cans, coal, pipe, aluminum wire, copper wire, concrete, and glass. Most of the debris is in relatively small pieces. Large debris include the steel railroad rail, iron bar, wire rope, and concrete.

Code: 200-E-101 **Classification:** Accepted
Names: 200-E-101; 200 East Deep Lysimeter Site **Reclassification:** Rejected (9/16/2010)
Type: Experiment/Test Site **Start Date:** 1/1/1971
Status: Inactive **End Date:** 1/1/2009
Description: The site consists of three features, one open bottom pit, one closed bottom pit and an

underground equipment storage room. The pits are located 34.6 meters (114 feet) apart. Both pits are constructed from corrugated steel cylinders that were buried and backfilled with soil. In February 2001, the underground, equipment storage room access hatch and vents were found inside a chained area, just west of the dirt access road. The closed bottom pit is north of the equipment room, enclosed in a triangular shaped chained area. Lysimeter access pipes are protruding up through the soil and the rim of the closed bottom lysimeter caisson are visible.

Location: The site is located southeast of 200 East Area, within the BC Radiologically Controlled Area, approximately one half mile south of Route 3. It is 91.5 meters (300 feet) northwest of well #699-32-49D.

Process Description: The lysimeter pits were used to collect soil information. The sensors in the pits were hard wired to the instrument recorders, located inside the underground equipment storage room. Three 4-centimeter (1.6-inch) diameter aluminum pipes were installed to a depth of 18.3 meters (60 feet) to allow access of a Neutron Moisture Probe. Other pipes contained soil temperature thermocouples and pressure sensor tubes. The closed bottom lysimeter has a 20-centimeter (8-inch) poured concrete slab at the bottom. Holes were bored through the cement slab so the instruments could access the soil below the caisson. The instrument room housed the recording and measurement instruments. The room was buried approximately 0.3 meters (1 foot) below ground level to eliminate climatological influences, such as wind and temperature that could interfere with readings. The room measures 4.5 meters (14.8 feet) by 4.8 meters (15.8 feet) and was located between the two lysimeter pits. The open bottom lysimeter has been decommissioned. The closed bottom lysimeter remains in a "Standby" mode. It is still operational, but is not being used. The neutron probe may have been left inside the lysimeter. Verbal reports indicate that early experiments included the use of short-lived isotope tracers. In 2008, PNNL was asked to use the lysimeter to help evaluate the BC Controlled Area and the BC Crib Area. The lysimeter site would be active at least through September 2008. PNNL stated that a neutron probe used to be inside the lysimeter, but no neutron probes have been stored at the site for over 10 years. In 2009, PNNL stated that the lysimeter had been compromised by soil settlement and believe water had infiltrated the lysimeter through the side walls. Based on these events, PNNL decided the lysimeter was no longer usable. The status of the lysimeter should be Inactive.

Waste Type: Equipment

Waste Description: In 1999, PNNL said the neutron probe has been left inside the closed bottom pit, but in 2008 PNNL said the probe had been removed. The cables were weighted with 500-gram (1.1 pound) lead bricks that were backfilled in place, inside the pits. This equipment could be considered hazardous.

Code: 200-E-110	Classification: Accepted
Names: 200-E-110; Contaminated Tumbleweed Dump Site	Reclassification: Interim Closed Out (2/25/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: In October 2003, the area was down posted to a non-controlled area. The radiological posting signs were removed. The site had been surrounded with light duty steel chain and posts and posted as a Contamination Area. The Contamination Area was surrounded with light duty steel chain and posts and is posted as a Radiological Buffer Area. The area was also posted as a Radiologically Controlled Area. The ground is sandy soil with rocks and chunks of concrete. The area is free of growing vegetation and the tumbleweeds have been removed. Only tumbleweed fragments remained.	
Location: The site is located just off the northeast corner of 200 East Area, east of Canton Avenue and	

northeast of Gate 810.

Waste Type: Vegetation
Waste Description: The waste consisted of dried, compacted tumbleweeds.

Closure Info: 200-E-110 and UPR-600-21 were addressed as a group. The information below documents information for the group of sites.

In July and August 2009, the 200-E-110 and UPR-600-21 waste sites were investigated through observation, field screening and radiological surveys for the purpose of determining if radiological contaminants were present above the removal action levels (RALs). The survey results analysis confirmed that soil contaminant concentrations are at or below the RALs and that no further action is required. Both 200-E-110 and UPR-600-21 waste sites achieved compliance with the removal action levels (RALs) and thus met the removal action objectives (RAOs). These results support reclassification to Interim Closed Out status.

Code: 200-E-126-PL-A	Classification: Accepted
Names: 200-E-126-PL-A; Segments of 200-E-126-PL Pipeline Located in the Outer Area	Reclassification: None
Type: Radioactive Process Sewer	Start Date:
Status: Inactive	End Date:

Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site has been split into segments. 216-E-126-PL-A is the segments of pipeline located in the Outer Area. The segments of pipeline associated with 200-E-126-PL-A include the forty eight inch diameter corrugated metal pipes that could feed the lobes of the 216-E-28 Contingency Pond, the thirty inch diameter High Density Polyethylene pipe that fed the 216-B-3B pond lobe and the two thirty inch diameter corrugated metal pipes that connected the 216-B-3A pond lobe to the 216-B-3C pond lobe.

Location: The 200-E-126-PL-A pipeline segments are located east of the 200 East Area fence line, beyond the Inner/Outer Area boundary.

Process Description: The pipeline conveyed B Plant effluent to the 216-B-3 Pond and Ditch system. B Plant cooling water effluent was originally routed through the 207-B Retention Basin to the 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches. In 1987, the 216-B-2-3 ditch was closed and was replaced by this, 22 inch diameter plastic underground pipeline. It extended from the 207-B basin to Diverter Station #2. By 1994, all of the open ditches (216-B-2-1, 216-B-2-2, 216-B-2-3, 216-B-3-1, 216-B-3-2 and 216-B-3-3) had been backfilled and surface stabilized. After 1994, all the effluent was conveyed to the 216-B-3A and 216-B-3C pond lobes only through underground pipelines. In 1995 the ponds were closed. The remaining effluent was transferred the Treated Effluent Disposal Facility (TEDF). Parts of the pipelines east of 200 East Area, that had fed the ponds, were re-used to feed the TEDF disposal basin. The TEDF portion begins at Manhole #8 and extends to Pump Station #3. In the event of a failure at Pump Station #3, the effluent can be routed to 216-B-3C (C lobe). The section that connects the southeast corner of 216-B-3A to the northwest corner of 216-B-3C is constructed of 76 centimeter (30 inch) corrugated metal pipe.

Related Sites/ Structures: This waste site is associated with the 200-E-126-PL-B, 216-E-28 Contingency Pond, 216-B-3A Lobe and 216-B-3B Lobe.

Code: 200-E-127-PL-A	Classification: Accepted
Names: 200-E-127-PL-A; Segments of Gable Mountain	Reclassification: None

Pond Pipeline Located in the Outer Area

Type: Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:**

Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site (200-E-127-PL) has been split into segments. 200-E-127-PL-A is the segments of pipeline located in the Outer Area. The pipeline is marked with steel posts and Underground Radioactive Material - Pipeline signs. The majority of the pipeline is constructed of large diameter corrugated metal pipe. The 36 inch diameter corrugated metal pipe enlarges to 42 inch diameter corrugated metal pipe at Manhole #8 (north of the 600-118 diverter station). The pipeline divides into two sections (a Y shape) near where it crosses Route 11A. Two sections of pipe fed the pond. Near the 810 gate, an area of contaminated vegetation growing on and adjacent to the pipeline was stabilized with biobarrier and posted with Underground Radioactive Material Area signs. A portion of the pipeline is under the Liquid Effluent Retention Facility (LERF) berm and extends into the LERF/ETF facility boundary.

Location: 200-E-127-PL-A is located east and north of the 200 East Area. This segment extends northward from Manhole 5 to the 216-A-25 (Gable Mountain Pond).

Process Description: This portion of pipeline conveyed PUREX and B Plant effluent to the (216-A-25) Gable Pond. The effluent stream could be directed to Gable Mountain Pond or B Pond via Diverter Station #3. From Diverter Station # 3 northward to the 216-A-25 Pond, the pipeline is constructed of 107 centimeter (42 inch) diameter corrugated metal pipe.

Code: 2607-E1**Classification:** Accepted**Names:** 2607-E1; Septic Tank and Tile Field**Reclassification:** Closed Out (11/9/2004)**Type:** Septic Tank**Start Date:** 1/1/1948**Status:** Inactive**End Date:** 1/1/1997

Description: This septic tank is constructed of reinforced concrete with walls and floors. The associated drain field is 778 square meters (8,376 square feet).

Location: This septic tank is located north of 4th Street and east of Baltimore Avenue. The tile field is north of the tank.

Process Description: The 2607-E1 Septic Tank and associated drain field were designed to accept and treat sanitary sewer effluent from facilities in central 200 East Area.

Related Sites/ Structures: The 2607-E1 Septic Tank is associated with the 2607-E1 Tile Field, the 200 East shops and 282-E.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary wastewater and sewage at an estimate rate of 21,556 liters (5,695 gallons) per day. It service the 200 East Area shops and powerhouse.

Closure Info: The system was abandoned in 1997 in accordance with Washington Administrative Code 246-272-18501. This system was tied into 2607-E1-A.

Code: 216-N-8**Classification:** Accepted**Names:** 216-N-8; 216-N-8 Pond; Honeyhill Pond; Seepage Pond; West Lake; West Pond**Reclassification:** None

Type: Pond

Start Date:

Status: Inactive

End Date:

Description: The site is a pond of water surrounded by a white perimeter ring of dried alkali salt residue. The size and volume of the pond change with the seasons and groundwater levels.

Location: The site is located south of the western end of Gable Mountain and northwest of 216-A-25. It is east of Route 4 North. An unnamed dirt road leads to West Lake from Route 4 North.

Process Description: This unit did not receive effluent from any contaminated facilities, but may have received discharge from the 606 Central Mix cement plant (see drawing H-11-4327). This pipeline could also be part of the Export Water line (see HW-70186). Prior to construction of Gable Mountain Pond, it was an intermittent, seasonal pond, only appearing in the winter and spring when the water table was elevated. Early Hanford construction camps disposed of sanitary sewage sludge in this area. This practice is believed to have contributed to the high alkaline and phosphate levels and elevated pH levels in the pond. After Gable Mountain Pond (216-A-25) became active in 1958, West Lake enlarged as a result of the raised water table and became a permanent pond.

Related Sites/ Structures: The Gable Mountain Pond (216-A-25) and 600-262 are associated with the unit.

Waste Type: Water

Waste Description: Prior to the appearance of West Pond, this area was used as a disposal site for sewage sludge from the early Hanford construction camp. High alkaline and phosphate levels, as well as elevated pH values, may be attributed to this use of the pond area. Hanford drawing H-11-4327 shows a water line extending from the 606 Central Mix cement plant settling basins to Honeyhill. It implies the lake may have received water from the cement plant. However, this pipeline could also be part of the Export Water line (see HW-70186). Even though this unit never received direct discharges of contaminated effluents, it contains relatively high amounts of radionuclides (1,055 to 1,098 picocuries/liter in 1976), having the highest gross alpha (naturally occurring except for tritium) concentrations of all the 200 Area ponds. The actual source of existing activity is unknown. A possible main contributor is the leaching of naturally occurring radionuclides from the soil that has been concentrated by evaporation during the entire history of the unit.

Code: 216-S-10D

Classification: Accepted

Names: 216-S-10D; 216-S-10D Ditch; Chemical Sewer Trench; Open Ditch to the Chemical Sewer Trench; 202 Chemical Sump #1 and Ditch; 216-S-10 Ditch

Reclassification: None

Type: Ditch

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1991

Description: The portion of the ditch nearest the 200 West Area perimeter fence is an open, unlined open ditch. Two thirds of the original ditch has been backfilled. The covered portion is posted with Underground Radioactive Material signs. The open portion is marked, but not radiologically posted.

Location: The 216-S-10 Ditch begins southwest of the 202-S Building and extends south of the 200 West Area perimeter fence.

Release Description: See UPR-200-W-34.

Process The site started receiving waste from 202-S in August 1951. In February 1954, it became

Description: apparent that the 216-S-10 Chemical Sewer (200-W-157-PL) needed a larger leaching area. Thus four leaching ponds (fingers) were dug southwest of the 216-S-10 Ditch, adding approximately 3 acres of leaching surface. By May 1954, the area became swamped again. Two more leach trenches were added that became known as 216-S-11. The May 1954 REDOX Monthly Report indicated contamination levels in the trench to be a maximum of 500 to 800 mrads/hour in spots with lower levels of 80,000 counts per minute in a one acre overflow area that resulted from a break in the east trench (southeast 216-S-11 per Maxfield); see UPR-200-W-34. ANN solution was inadvertently dumped into the Chemical sewer in 1954 and seriously plugged the soil at the terminus of the chemical sewer.

Related Sites/ Structures: The ditch is associated with the REDOX facility, the REDOX chemical sewer 200-W-157-PL, 216-S-11 and the 216-S-10 Pond.

Waste Type: Process Effluent

Waste Description: In the past, 420 liters (110 gallons) of hazardous waste salts including sodium nitrite (NaNO₂) and sodium hydroxide (NaOH) were discharged to the unit. Until 1965, the site received chemical sewer waste from 202-S and overflow from the high water tower. Since October 1991, the site no longer acted as a ditch because the 216-S-10 Pond was stabilized. No dangerous wastes have been discharged to this unit since February 1987. NOTE: The 216-S-11 Pond was credited with all the liquid effluent inventory for the 216-S-10 Pond and Ditch system for many years.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-34

Names: UPR-200-W-34; Overflow of the 216-S-10 Ditch; UN-200-W-34

Code: 216-S-10P **Classification:** Accepted

Names: 216-S-10P; 216-S-10P Pond; Chemical Sewer Trench; 202-S Chemical Sump #1 and Ditch **Reclassification:** None

Type: Pond **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1984

Description: The pond was an irregular shape with four trenches known as fingers. The unit has been backfilled and stabilized and posted with Underground Radioactive Material signs.

Location: The unit is located outside the 200 West Area perimeter fence, southwest of the 202-S Building.

Release Description: The unit received one documented discharge of dangerous waste. This discharge consisted of simulated double-shell tank slurry which exhibited dangerous waste characteristics of ignitability, corrosivity, characteristic waste and toxic state-only waste. Approximately 450 kilograms (1,000 pounds) were discharged.

Process Description: In February 1954, it became apparent that the 216-S-10 Chemical Sewer need more leaching area, so four leaching ponds (fingers) were dug off the southwest end of the 216-S-10 Ditch. The fingers added approximately 3 acres of leaching surface. By May 1954, the area became swamped again. Two more leach trenches were added that became known as 216-S-11. The May 1954 REDOX Monthly Report indicated contamination levels in the trench to be a maximum of 500 to 800 mrads/hour in spots with lower levels of 80,000 counts per minute in a one acre overflow area that resulted from a break in the east trench (southeast 216-S-11 per Maxfield)

Related Sites/ Structures: The pond is associated with the REDOX facility, the 216-S-10 Ditch and UPR-200-W-34.

Waste Type: Process Effluent
Waste Description: Until 1965, the site received the chemical sewer waste from 202-S and overflow from the high water tower via the 216-S-10 Ditch. From 1960's, the site received the bearing cooling water from 202-S. RHO-CD-673 documents two releases of radioactive liquid into the S-10 Disposal System. NOTE: The 216-S-11 Pond was credited with all the liquid effluent inventory for the 216-S-10 Pond and Ditch system for many years.

Code: 216-S-11 **Classification:** Accepted

Names: 216-S-11; 216-S-11 Swamp; Chemical Sewer Trenches; 202-S Chemical Sump #2 **Reclassification:** None

Type: Pond **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1965

Description: A 1999 site visit found the area to be flat and covered with bunch grass. Neither of the 216-S-11 pond lobes are marked or posted.

Location: This unit is southwest of 202-S Building and just east of 216-S-10 Ponds.

Process Description: This site provided an additional leaching surface for the disposal of water from the 216-S-10 Ditch. The site consisted of two connecting pond lobes. The south lobe was backfilled in 1975, but there is no documentation of when the north lobe was backfilled.

Related Sites/Structures: The site is associated with the 216-S-10 Ditch, UPR-200-W-34 and the 202-S Building.

Waste Type: Process Effluent

Waste Description: The site received the waste from air conditioning and drains in 202-S Building and the chemical sewer waste from the 202-S Building. NOTE: The 216-S-11 Pond was credited with all the liquid effluent inventory for the 216-S-10 Pond and Ditch system for many years.

Code: 216-S-16D **Classification:** Accepted

Names: 216-S-16D; 216-S-24 Ditch; REDOX Pond #2; 202-S Swamp #1; 202-S Swamp (New) and Ditch **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1975

Description: The site is a ditch that connected the 202-S Building to the 216-S-16 Pond. The side slope of the open ditch was 2:1. The ditch has been backfilled and surface stabilized. It is posted with Underground Radioactive Material signs.

Location: The open ditch began 835 meters (2736 feet) southwest of the southwest corner of the 200 West Area perimeter fence, terminating at the eastern edge of the 216-S-16 Pond.

Process Description: The ditch received effluent from the REDOX facility. Prior to reaching the open ditch, the effluent was transported via an underground, 60 centimeter (24 inch) vitrified clay pipeline.

Related Sites/Structures: The site is associate with the REDOX facility, the 216-S-16 Pond, and the 216-U-9 Ditch. The pipeline to the 216-S-16 ditch is discussed in sitecode 200-W-155-PL.

Waste Type: Process Effluent

Waste Description: January 1957 is considered the most accurate start date for this waste unit. The site received process cooling water and steam condensate from 202-S Building until June 1967. After the

202-S Building (REDOX) was put on standby in July 1967, the site received condenser and vessel cooling water from concentrator boil-down operations in the 202-S Building. In 1973, the 216-U-9 ditch was connected to the 216-S-16 ditch to allow the 216-U-10 pond overflow to reach the 216-S-16 pond.

Code:	216-S-19	Classification:	Accepted
Names:	216-S-19; 216-S-19 Pond; 216-SL-1; 222-S Lab Swamp; REDOX Lab Swamp	Reclassification:	Interim Closed Out (9/21/2011)
Type:	Pond	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1984
Description:	This waste site has been remediated. The pond is no longer marked or posted. The radiological postings were removed in August 2011.		
Location:	This unit was located south of the 200 West Area perimeter fence, southeast of the 216-S-14 Trench and the 2607-W7 Tile Field.		
Release Description:	Document HW-60807 states "The 222-S Swamp, located outside 200 West Area, about 1000 yards south of the 222-S laboratory, is used for disposal of drainage from lab sinks and wall drains. In December 1953, contamination up to 200 millirad per hour at the ground surface was discovered over an area measuring approximately 300 feet long and 3 feet wide." Reference 9 on sketch G of this document indicates the location to be the 216-S-19 pond.		
Process Description:	The pond was opened in February 1952 and closed in October 1984. Until December 1954, the site received effluent from the 222-S/SA Laboratory ventilation cooling water and miscellaneous wastes from laboratory hoods and decontamination sinks via the 207-SL Retention Basin. From December 1954 to October 1955, the site was inactive because the radionuclide concentration in the 207-SL Retention Basin liquid waste was above the prescribed disposal guidelines, and building effluents were rerouted to the 216-S-20 Crib. From October 1955 to October 1984, the site received ventilation cooling water and miscellaneous wastes from laboratory hoods and decontamination sinks in the 222-S Laboratory Building via the 207-SL Retention Basin.		
Related Sites/ Structures:	The associated structures are the 222-S Building, 207-SL Retention Basin, 216-S-26 crib and pipeline sitecode 200-W-147-PL .		
Waste Type:	Process Effluent		
Waste Description:	The site received ventilation cooling water, lab hood waste, and decontamination sink waste.		
Closure Info:	Twelve focused confirmatory samples were collected from the north end of the pond, near the discharge pipe. The results of initial sampling indicated concentrations of uranium U-233/234, and U-238 in excess of their respective Removal Action Levels thus initiating RTD. Removal of impacted soils at the 216-S-19 was excavated to a depth of approximately 0.31 to 0.61 meters (1 to 2 ft) below the floor of the pond, at Focused Sample 6, in an attempt to spot clean the area of contamination. The area of excavation was later expanded laterally to encompass the entire floor of the pond. The vertical extent of excavation was refined by in process sampling, conducted during RTD activities. The depth of excavation ranged from approximately 3 to 4 meters (10 to 13 ft) below original grade.		

Code:	216-S-26	Classification:	Accepted
Names:	216-S-26; 216-S-26 Crib; 216-S-19 Replacement Facility	Reclassification:	Interim Closed Out (9/21/2011)

Type: Crib	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1995
Description:	This crib has been remediated. The crib is no longer marked or posted. The crib had been surrounded with metal posts and chain and was posted with Underground Radioactive Material signs. A 15 centimeter (6 inch) vitrified clay, perforated distribution pipe runs the length of the unit, 46 centimeters (18 inches) above the bottom of the crib. Eight centimeters (4 inches) of gravel covered a membrane barrier. The crib had been filled with 2.9 meters (9.5 feet) of soil. One gage well with a liquid level indicator was located 30 meters (100 ft) from the west end, and a vent riser was located at the east end.
Location:	The crib was located southeast of 222-S Building, outside the 200 West Area perimeter fence.
Release Description:	During the week of 10/20/84, a spill occurred at the 222-S Lab resulting in the release of water contaminated with Sr-90 to the 207-SL Retention Basin. Concentrations averaged 2 to 3 times the Sr-90 guide but did not exceed RHO-MA-139 standards. The water was released to the new 216-S-26 Crib.
Process Description:	The crib received waste from the 222-S laboratory via the 207-SL retention basin. In 1988, crib infiltration rate problems were noted due to caustic flush water being periodically disposed to the 207-SL basin.
Related Sites/ Structures:	The pipeline associated with this crib is WIDS pipeline sitecode 200-W-148-PL.
Waste Type:	Steam Condensate
Waste Description:	The site received steam condensate and sink wastes, which are byproduct radioactive wastes, from the 222-S Laboratory via the 207-SL Retention Basin. The wastes contain a variety of chemicals, including acetone, nitric acid, and lesser amounts of sulfuric and hydrofluoric acids.
Closure Info:	Implementation of the selected Remove, Treat, Dispose (RTD) alternative was performed. Soil and piping were removed from the two waste sites. Direct visual inspection of the site surface was performed as a guide for visual cues such as staining, discoloration, absence of vegetation, presence of debris, and other anomalies. Radiological field screening was performed at the excavation surface of the waste site to provide an indication of the extent of radiological contaminants. Soil was removed to a depth of approximately 4.6 meters (15 ft) below ground surface. Characterization sampling was performed at depths of 4.6, 4.9, 5.5, and 6.1 meters (15, 16, 18, and 20 ft) and the analytical results evaluated to demonstrate achievement of Removal Action Objectives.

Code: 216-T-1	Classification: Accepted
Names: 216-T-1; 216-T-1 Trench; 221-T Ditch; 221-T Trench	Reclassification: None
Type: Ditch	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1995
Description:	The ditch has been backfilled. It is currently marked and posted with Underground Radioactive Material signs.
Location:	The ditch is located on the north side of 221-T Building, west of Beloit Avenue.
Process Description:	The ditch received cooling water and steam condensate discharge from 221-T and 271-T.
Related Sites/	The ditch was associated with the 221-T facility operations. The pipeline associated with the

Structures: ditch is 200-W-180-PL.

Waste Type: Steam Condensate

Waste Description: From 1944 until 6/56, the site received miscellaneous waste from pilot plant experimental work, intermittent decontamination waste, and waste from the head end of the 221-T Building. From 6/56 to 1/64 the ditch was inactive due to the production operations at T Plant being shut down. From 1/64 to 6/70, the site received cooling water from the blowdown vessel in the 271-T Building and miscellaneous waste from PNL head end operations in the 221-T Building. After 6/70, the site received condensate from steam-heated radiators at the head end of 221-T Building. During standdown of PNL operations, the discharge of 271-T and other 221-T head end waste was discontinued. The site also received sodium hydroxide wash water waste solution (less than 1,000 gal/month [3,800 L/month]) from the Sodium-Air-Water Reaction Emergency Air Cleaning Development-HEDL. This waste water was nonradioactive and generally wet only the bottom of the unit to approximately 150 ft (46 m) from the outfall.

Code: 200-W ADB

Classification: Accepted

Names: 200-W ADB; 200-W Ash Disposal Basin

Reclassification: None

Type: Coal Ash Pit

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/2000

Description: The site is an area of dark soil with cheatgrass growing on the surface. A small depression can be seen in the middle of the site.

Location: The site is located inside 200 West Area, northeast of the 221-U Facility. It is on the east side of Beloit Ave. south of 20th Street.

Process Description: The Ash Disposal Basin received coal ash slurry and ash from the operation of the coal fired 284-W Powerhouse. A 1954 drawing shows an underground ash slurry pipeline extending from the northeast corner of the 284-W Powerhouse to the northwest corner of the Ash Disposal Basin. Later, the site received trucked material, dredged from the 200 West Powerhouse Ash Pit, located south of the powerhouse, on the west side of Beloit Ave.

Related Sites/Structures: The site is associated with the 284-W Powerhouse operation the 200-W Ash Pit. The open pit adjacent to the south side of the 200-W ADB is known as the 200-W Burn Pit (200-W BP).

Waste Type: Ash

Waste Description: The site mainly received coal ash from the 200 West Area Powerhouse operation. However, the open pit was sometimes used for other purposes. The open ash disposal basin was sometimes used as a location for burning tumbleweeds that had collected along area fences during the 1980's. A Tiger Team finding for disposing of steam plant ash without a permit prompted sampling of wet flyash and bottom ash from the 200 Area power houses. Sample results determined the ash to be non-dangerous and non-corrosive and not regulated under Washington Administrative Codes.

Code: 200-W BP

Classification: Accepted

Names: 200-W BP; 200-W Burning Pit; Gravel Pit 34; Pit 34

Reclassification: None

Type: Burn Pit

Start Date: 1/1/1950

Status: Active

End Date:

Description: The site is a large open pit.

Location: The site is located within the 200 West Area Ash Disposal Basin, southeast of the 284-W

Powerhouse, on the east side of Beloit Ave.

Release Description: UPR-200-W-37 and UPR-200-W-70 have been associated with the 200 West Burn Pit in some documents. It is possible that an early burn pit, located southeast of U Plant, was actually the site of these releases. See 200-W-71.

Process Description: 200 Area office waste and non-radioactive construction debris and tumbleweeds have been brought to this site and burned. According to Dave Phipps in April 2002, this site is used as a staging area for uncontaminated tumbleweeds from the 200 Area fences. They are burned semiannually in the spring and the fall. The area is also used as a source of clean backfill (gravel) material. In 1984, a one time chemical demolition event occurred inside the northern portion of the current 200-W Burn Pit. However, the title of the closure document is the 200 West Area Ashpit Demolition Site Closure Plan (DOE/RL-92-54). A review of this document confirms the location of the chemical demolition was inside the 200-W Burn Pit. Drawing H-2-1495 and historical photograph #3755 show another disposal pit/burn pit, located south of 16th Street, east of Beloit Ave. Early references to the 200 West Burn Pit could be referring to this location.

Related Sites/ Structures: The burn pit is associated with the 200-W Ash Disposal Basin (200-W ADB), 200-W ADS and 200-W-71.

Waste Type: Demolition and Inert Waste

Waste Description: The unit is used to burn nonradioactive material and tumbleweeds PNL-6456 states the site received construction and office waste (15,000 cubic meters [19,600 cubic yards]), paint waste, and chemical solvents (1,000 liters [260 gallons]).

Code: 200-W-3 **Classification:** Accepted

Names: 200-W-3; 220-W-1; 2713-W North Parking Lot **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is the gravel parking lot, containing an area where discolored soil was identified in an excavation between 10 to 15 centimeters (4 to 6 inches) below the surface.

Location: The waste site is located east of Beloit Ave. and north of 20th Street. It is north of where the 2713-W garage had been located before it was demolished.

Process Description: The 2713-W building had been a gas station and also contained an oil changing pit for government vehicle maintenance. Oil was often used on gravel areas for dust abatement.

Related Sites/ Structures: Building 2713-W and a waste oil storage tank are associated with this unit.

Waste Type: Oil

Waste Description: The waste at the unit includes waste oil that was used for dust abatement. Two soil samples taken at the unit indicate that PCBs (maximum 3 parts per million), lead (maximum 2.1 milligrams per liter EP-TOX), xylene (maximum 1640 parts per billion), and total petroleum hydrocarbons (maximum 620 milligrams per kilograms) were present.

Code: 200-W-33 **Classification:** Accepted

Names: 200-W-33; Debris Near 609 Gate; Solid Waste Dumping Area **Reclassification:** Interim Closed Out (6/3/2011)

Street.

Process Description: WHC-EP-0342 states the 2724-W building was built in 1952 and expanded several times. ARH-2155, however, indicates that the new laundry facility (2724-W) began discharging effluent in 1950. This building (2724-W) replaced the 2723-W "Old Laundry" facility which was then used as the mask washing facility. The laundry effluent was discharged via an underground pipeline (200-W-102) to the 216-U-14 Ditch, until it was diverted to the new Laundry Waste Crib (216-W-LWC) in 1981. By 1981, the Laundry Complex included the 2724-W, 2724-WA, 2724-WB and MO-406. MO-412 was placed adjacent to the Laundry Complex in 1984 and housed the Mask Cleaning and Maintenance Facility. Soiled protective work clothing (coveralls, gloves, hoods, canvas boots and rubber shoe covers) were sent to the laundry facility from all the Hanford work areas. Two thirds of the laundry received was radioactively contaminated. One third consisted of "blue" (non contaminated) coveralls and towels. The non-contaminated laundry was washed separately from the contaminated laundry. By 1981, approximately three million pounds of laundry was processed per year in 600 pound capacity washing machines and 400 pound capacity dryers. An average of 26,250,000 liters (691,000 gallons) of waste water was discharged to the 216-W-LWC crib each month.

Related Sites/ Structures: The site is associated with the demolished contaminated laundry facility complex which included 2724-WA, 2724 WB Laundry facilities, and the MO-412 Mask Cleaning facility. It replaced the 2723 -W (Old Laundry" Facility and mask cleaning station) which was located northeast of the 2724-W facility. Effluent was discharged via 200-W-102 to the U-14 Ditch until 1981 when it was diverted to the 216-W-LWC (Laundry Waste Crib).

Waste Type: Construction Debris
Waste Description: The site is the cement foundation of the contaminated laundry facility.

Code: 200-W-102-PL	Classification: Accepted
Names: 200-W-102-PL; Pipeline from Laundry, Powerhouse and Shops to 216-U-14 Ditch; 200-W-102	Reclassification: None
Type: Radioactive Process Sewer	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1981

Description: The waste site is various diameters of vitrified clay and concrete pipes that transferred waste to the 216-U-14 ditch. The underground pipeline is not separately marked or posted. Several manholes are visible along the line that have Confined Space and Radiation Area postings.

Location: The pipeline is located in 200 West area, on the north and south sides of 20th Street. It extends westward on the north side of 20th Street until it terminates at the head end of the 216-U-14 Ditch.

Process Description: The pipeline transported radioactive contaminated laundry and mask cleaning effluent to the 216-U-14 Ditch along with non-radioactive effluent from the powerhouse and shops . The waste originated from the 2723-W (Old Laundry) and 2724-W (New Laundry). 2724-W waste was rerouted to 216-W-LWC (laundry crib) in 1981. After 1984, water from the other buildings continued to use this pipeline, but the waste was collected in the Powerhouse Pond that was built on top of the head end of the 216-U-14 Ditch. Soiled protective work clothing (coveralls, gloves, hoods, canvas boots and rubber shoe covers) were sent to the laundry facility from all the Hanford work areas. Two thirds of the laundry received was radioactively contaminated. One third consisted of non contaminated blue coveralls and towels. The non-contaminated laundry was washed separately from the contaminated laundry. The masks were

radiologically decontaminated at 2706-T prior to being washed and sanitized at the 2723-W mask cleaning station. Therefore, the radiological contamination in the 2723-W floor drains and pipeline should be minimal. By 1981, when the effluent was re routed to 216-W-LWC, approximately three million pounds of laundry was processed per year in 600 pound capacity washing machines and 400 pound capacity dryers. The combined average of 26,250,000 liters (691,000 gallons) of waste water was being discharged from the 2723-W and 2724-W facilities in 1981. It should be noted that portions of the existing pipeline were used to reroute effluent to the 216-W-LWC (see sitecode 200-W-221-PL).

Related Sites/ Structures: This pipeline discharged effluent from 2723-W (old laundry/mask cleaning), 2724-W Laundry and the 284-W Powerhouse. Additional pipelines from the 282-W water reservoir, 283-W filter plant and the 277-W fabrication shop also connect to the main pipeline. Portions of this pipeline are associated with the 2724-W building foundation (WIDS sitecode 200-W-64). This pipeline is also associated with 200-W-221-PL (Laundry Waste Crib Pipeline).

Waste Type: Process Effluent

Waste Description: Detergents and radioactive contamination from laundry worn in radiation areas are included in the laundry effluent discharge. A 1945 letter indicates the detergent used at the original laundry facility was named Igepal CA. 3% acetic acid was added to remove beta contamination and 3% citric acid was added to remove alpha contamination. Non-radioactive effluent from the 277-W fabrication shop, the powerhouse and the 283-W filter building.

Code: 200-W-148-PL	Classification: Accepted
Names: 200-W-148-PL; 216-S-26 Crib Pipeline	Reclassification: Interim Closed Out (9/21/2011)
Type: Radioactive Process Sewer	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1995

Description: The pipeline has been remediated. The site had been a 15.2 centimeter (6 inch) diameter vitrified clay pipe that connects the west end of the 216-S-26 crib to pipeline 200-W-147-PL (the original 20 centimeter (8 inch) diameter vitrified clay pipe that extends from the 207-SL Retention Basin to 216-S-19 Pond). The 216-S-26 crib was built to replace the 216-S-19 Pond.

Location: The 216-S-26 crib and associated piping was located south of the 200 West Area perimeter fence, southeast of the 222-S building.

Related Sites/ Structures: This site is associated with the 216-S-26 crib and the 200-W-147-PL pipeline.

Closure Info: Implementation of the selected Remove, Treat, Dispose (RTD) alternative was performed. Soil and piping were removed from the two waste sites. Direct visual inspection of the site surface was performed as a guide for visual cues such as staining, discoloration, absence of vegetation, presence of debris, and other anomalies. Radiological field screening was performed at the excavation surface of the waste site to provide an indication of the extent of radiological contaminants. Soil was removed to a depth of approximately 4.6 meters (15 ft) below ground surface. Characterization sampling was performed at depths of 4.6, 4.9, 5.5, and 6.1 meters (15, 16, 18, and 20 ft) and the analytical results evaluated to demonstrate achievement of Removal Action Objectives.

Code: 200-W-147-PL-A	Classification: Accepted
Names: 200-W-147-PL-A; Portion of 200-W-147-PL Pipeline in the Central Plateau Outer Area	Reclassification: Interim Closed Out (8/11/2011)
Type: Radioactive Process Sewer	Start Date:

Status: Inactive

End Date:

Description: This pipeline has been remediated. Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original site (200-W-147-PL) has been split into separate WIDS sites. It was an underground 20 centimeter (8 inch) diameter vitrified clay pipe, extending from the 207-SL retention basin to the 216-S-19 pond. 200-W-147-PL-A is the portion of pipeline that extends south of the manhole, south of 200 West Area in the Outer Area, terminating at the 216-S-19 pond. Subsites were created for the portions of pipeline to the north and to the south of the remediation haul road. Both sections were remediated.

Location: This portion of the pipeline was located in the 600 Area, south of 200 West Area and the 222-S facility. It extends from the manhole located in the Outer Area boundary to the 216-S-19 Pond.

Process Description: The pipeline carried waste from the 222-S and 202-S facilities to the 216-S-19 Pond via the 207-SL Retention Basin. In 1984, the 216-S-19 Pond was replaced with the 216-S-26 crib. The pipeline to the crib was connected to the 216-S-19 Pond pipeline at manhole #3 (see 200-W-148-PL). The portion of the pipeline from 207-SL to Manhole #3 continued to be used to feed the 216-S-26 crib until 1995. The portion of pipeline southward from Manhole #3 to the 216-S-19 Pond was abandoned in 1984.

Related Sites/Structures: This portion of pipeline is associated with the 222-S laboratory waste, the 216-S-19 pond and 200-W-147-PL-B portion of the pipeline that remains in the 200 West Inner Area. It is also associated with subsites 200-W-147-PL-A:1 and 200-W-147-PL-A:2.

Closure Info: The removal action at the 200-W-147-PL-A waste site was conducted from November 2010 through June 2011. The activities included the removal of overburden soil, and the pipeline itself, followed by collection of soil samples from locations within the excavation trench, as prescribed in the SAP (DOE/RL-2009-60). During RTD activities, a portion of the 200-W-147-PL-A pipeline beneath an access road to sites 216-S-19 and 216-S-26, could not be excavated without compromising the integrity of the access road. As a result, the pipeline was split into two subsites in WIDS: 200-W-147-PL-A:1 and 200-W-147-PL-A:2. Both segments were eventually properly remediated. Direct visual inspection of the site surface was performed, using available site information as a guide for visual cues such as staining, discoloration, absence of vegetation, presence of debris, and other anomalies. Radiological field screening was performed at the surface of the waste site to provide an indication of the presence of radiological COPCs.

The removal of the 200-W-147-PL-A:1 and 200-W-147-PL-A:2 subsites of the pipeline, and adjacent soils, was completed using radiological field screening and visual indicators to determine the extent of excavation. Where radiological dose rates greater than background were found, excavation continued in the area. The vertical extent of excavation ranged from 3 to 4.6 m (10 to 15 ft) below ground surface. The lateral extent of excavation at the waste site was determined utilizing visual and radiological indicators.

The waste site was backfilled in July 2011.

This Site has the Following SubSites:

Code: 200-W-147-PL-A:1

Names: 200-W-147-PL-A:1; Southern Portion of the 200-W-147-PL-A Pipeline

Code: 200-W-147-PL-A:2

Names: 200-W-147-PL-A:2; Northern Portion of 200-W-147-PL-A

Code: 200-W-147-PL-A:1

Classification: Accepted

Names: 200-W-147-PL-A:1; Southern Portion of the 200-W-147-PL-A Pipeline

Reclassification: Interim Closed Out (8/11/2011)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: 200-W-147-PL-A:1 is the portion of the pipeline extending from the 216-S-19 pond to a point south of the remediation haul road. 200-W-147-PL-A:1 is approximately 460 meters (1513 feet) long. In April 2011, the open excavation and soil pile created while removing segments of pipeline was removed from radiological control.

Closure Info: The removal action at the 200-W-147-PL-A waste site was conducted from November 2010 through June 2011. The activities included the removal of overburden soil, and the pipeline itself, followed by collection of soil samples from locations within the excavation trench, as prescribed in the SAP (DOE/RL-2009-60). During RTD activities, a portion of the 200-W-147-PL-A pipeline beneath an access road to sites 216-S-19 and 216-S-26, could not be excavated without compromising the integrity of the access road. As a result, the pipeline was split into two subsites in WIDS: 200-W-147-PL-A:1 and 200-W-147-PL-A:2. Both segments were eventually properly remediated. Direct visual inspection of the site surface was performed, using available site information as a guide for visual cues such as staining, discoloration, absence of vegetation, presence of debris, and other anomalies. Radiological field screening was performed at the surface of the waste site to provide an indication of the presence of radiological COPCs.

The removal of the 200-W-147-PL-A:1 and 200-W-147-PL-A:2 subsites of the pipeline, and adjacent soils, was completed using radiological field screening and visual indicators to determine the extent of excavation. Where radiological dose rates greater than background were found, excavation continued in the area. The vertical extent of excavation ranged from 3 to 4.6 m (10 to 15 ft) below ground surface. The lateral extent of excavation at the waste site was determined utilizing visual and radiological indicators.

The waste site was backfilled in July 2011.

The SubSite is Part Of:

Code: 200-W-147-PL-A

Names: 200-W-147-PL-A; Portion of 200-W-147-PL Pipeline in the Central Plateau Outer Area

Code: 200-W-147-PL-A:2

Classification: Accepted

Names: 200-W-147-PL-A:2; Northern Portion of 200-W-147-PL-A

Reclassification: Interim Closed Out (8/11/2011)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: 200-W-147-PL-A:2 is the northern portion of this pipeline subsite. It is the portion extending (south) from the manhole to a point south of the remediation haul road, but is the north end of the majority of 200-W-147-PL-A. 200-W-147-PL-A:2 is approximately 26.4 meters (87 feet) long. In July 2011, the open excavation and soil pile created while removing segments of pipeline was removed from radiological control.

Closure Info: The removal action at the 200-W-147-PL-A waste site was conducted from November 2010 through June 2011. The activities included the removal of overburden soil, and the pipeline itself, followed by collection of soil samples from locations within the excavation trench, as prescribed in the SAP (DOE/RL-2009-60). During RTD activities, a portion of the 200-W-147-PL-A pipeline beneath an access road to sites 216-S-19 and 216-S-26, could not be excavated

without compromising the integrity of the access road. As a result, the pipeline was split into two subsites in WIDS: 200-W-147-PL-A:1 and 200-W-147-PL-A:2. Both segments were eventually properly remediated. Direct visual inspection of the site surface was performed, using available site information as a guide for visual cues such as staining, discoloration, absence of vegetation, presence of debris, and other anomalies. Radiological field screening was performed at the surface of the waste site to provide an indication of the presence of radiological COPCs.

The removal of the 200-W-147-PL-A:1 and 200-W-147-PL-A:2 subsites of the pipeline, and adjacent soils, was completed using radiological field screening and visual indicators to determine the extent of excavation. Where radiological dose rates greater than background were found, excavation continued in the area. The vertical extent of excavation ranged from 3 to 4.6 m (10 to 15 ft) below ground surface. The lateral extent of excavation at the waste site was determined utilizing visual and radiological indicators.

The waste site was backfilled in July 2011.

The SubSite is Part Of:

Code: 200-W-147-PL-A

Names: 200-W-147-PL-A; Portion of 200-W-147-PL Pipeline in the Central Plateau Outer Area

Code: 216-W-LWC **Classification:** Accepted

Names: 216-W-LWC; 216-W-LWC Crib; Laundry Waste Crib; 216-W-1; 216-W-LC **Reclassification:** None

Type: Crib **Start Date:** 1/1/1981

Status: Inactive **End Date:** 1/1/1994

Description: The crib is marked and posted with Underground Radioactive Material signs. The unit consists of two independent crib structures (drain fields) and associated underground pipelines connecting to the 200-W-64 laundry facilities. Each crib bottom dimension is 150 ft (47 meters) by 133 ft (40.5 meters). Each structure consists of an 8-in (20 centimeters) P.V.C. central distribution pipe running east-west, 14 ft (4.3 m) below grade, from which six 4-in (10 cm) P.V.C. perforated drain lines extend the length of the unit of both sides (150 ft [47 m]). The drain lines run parallel to each other, 23 ft (7.0 m) apart. Beneath each lies a 5-ft (1.5 m) deep rock-filled trench, giving the bottom a serrated appearance. A 7-ft (2.1 m) layer of gravel fill (5,546 yd³ [4,243 m³]) was backfilled over to grade. The side slope is 1.5:1.

Location: The site is located east of Beloit Ave., south of 20th Street.

Process Description: The site is constructed of two cribs, surrounded by a single Underground Material posted area. The Laundry Waste Crib began receiving effluent in 1981 from the Laundry Complex which included the 2724-W, 2724-WA, 2724-WB, MO-406 and 2723-W (Old Laundry). In 1984 mask washing was moved from 2723-W to MO-412 which was placed adjacent to the 2724-W Laundry Complex and became the Mask Cleaning and Maintenance Facility. Soiled protective work clothing (coveralls, gloves, hoods, canvas boots and rubber shoe covers) were sent to the laundry facility from all the Hanford work areas. Two thirds of the laundry received was radioactively contaminated. One third consisted of blue (non contaminated) coveralls and towels. The non-contaminated laundry was washed separately from the contaminated laundry. By 1981, approximately three million pounds of laundry was processed per year in 600 pound capacity washing machines and 400 pound capacity dryers. An average of 2,615,435 liters (691,000 gallons) of waste water was discharged to the new crib each month.

Related Sites/ Structures: The crib received effluent from the 2724-W, 2724-WA, 2724-WB Laundry facilities, MO-412 Mask Cleaning facility and the 2723-W Old Laundry. The pipeline to the Laundry Waste Crib is sitecode 200-W-221-PL.

Waste Type: Water

Waste Description: The site received all the process wastewater (averaging 2,615,435 liters per month) from the contaminated laundry facility (2724-W/WA) and mask cleaning station (MO-412). The waste included radioactive residue from the contaminated laundry and detergents. Bleach and flame retardant chemicals were added to some of the wash and rinse cycles. From 1981 to 1983, some waste oils, from a nearby fabrication shop, entered the waste stream through manhole B. The site became inactive in January 1994 when operations were initiated at an offsite contracted laundry facility. TPA M-17-34 required elimination of all discharge to the Crib by January 1995.

Code: 2607-W1

Classification: Accepted

Names: 2607-W1

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1944

Status: Active

End Date:

Description: The 2607-W1 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. There is a drain field associated with the system. This system was reconstructed in 1994.

Location: This unit lies southeast and across Bridgeport Avenue from the associated drain field, and northeast of the 2713-WB Building.

Process Description: The 2607-W1 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from connected facilities. In 1999, PFP waste was diverted to 2607-W1 when 2607-Z1 shut down. The additional volume was more than 2607-W1 could handle. A new septic system, 2607-W16, was built in 2001 to receive the PFP waste.

Related Sites/Structures: The 2607-W1 Septic Tank is associated with the 2607-W1 drain field, 2707-W, 2713-W, 283-W, 277-W, 275-W, 274-W, 284-W, 2723-W, 2704-W, 2719-WB, 272-W, MO-278, MO-279, MO-235, MO-406, MO-412, MO-215, MO-056, MO-204, MO-240, and MO-287.

Waste Type: Sanitary Sewage

Waste Description: The 2607-W1 septic system received sanitary sewer effluent at an estimated rate of 646 cubic feet (18.3 cubic meters) per day in 1987.

Code: 2607-WL

Classification: Accepted

Names: 2607-WL; 2607-WL Septic System

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1962

Status: Inactive

End Date: 1/1/1999

Description: The 2607-WL Septic System is constructed of reinforced concrete. The septic system includes a trench-type drainfield. The septic tank and drainfield are surrounded by a chain barricade with a sign stating "Septic Tank" posted.

Location: This unit lies north of the 272-WA Building and west of the 2401-W Building.

Process Description: The 2607-WL Septic Tank was designed to accept and treat sanitary sewer effluent from the associated facility, and discharge the effluent to the 2607-WL Drain Field. This drain field in turn, discharges the effluent into the ground.

Related Sites/Structures: The 2607-WL-Septic Tank is associated with a drain field and the 272-WA Building. Site 200-W-34 was a duplicate of this site, and has been proposed for rejection because of that. Site 2607-WWA may also be a duplicate of this site.

Waste Type: Sanitary Sewage
Waste Description: The current flow rates for the 2607-WL septic system indicate that the drain field is substantially overloaded. In 1995, this unit received effluent from the associated structure at an estimated rate of 2,760 gallons (10,450 liters) per day. The drain field has a capacity of 628 gallons (2,380 liters) per day.

Code: 600 OCL **Classification:** Accepted

Names: 600 OCL; Original CLF; 600 Area Original Central Landfill **Reclassification:** None

Type: Sanitary Landfill **Start Date:** 1/1/1973

Status: Inactive **End Date:** 1/1/1973

Description: This site is a backfilled trench that is posted "Underground Radioactive Material".

Location: This site is located 2.4 kilometers (1.5 miles) southeast of Army Loop Road and 30.5 meters (100 feet) north of Highway 4 South.

Process Description: The site received miscellaneous trash and debris from the Hanford Site.

Waste Type: Misc. Trash and Debris

Waste Description: This site contains general office wastes, some glass, electrical wastes, and minimal metal wastes. Radioactive contamination was found at this site in 1988 during investigative (test pit) activities.

Code: 600-36 **Classification:** Accepted

Names: 600-36; Ethel Railroad Siding (Burn Pit) **Reclassification:** Interim Closed Out (5/20/2011)

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: This waste site has been remediated. The site had been an area of scattered debris and some evidence of burning, adjacent to the Ethel railroad siding. Metal and wood debris were observed during the pre-remediation visual inspection performed in August 2009. The previously documented batteries and burn pit were also observed. Visual indicators of the burn pit included a circular area approximately 9.1 meters (30 ft) in diameter. Several discrete areas of surface discoloration and devegetation were observed in the eastern portion of the waste site. Historical information suggests the discolored areas may have been caused by a release of oil into the ground surface. Tar like deposits not previously identified were also encountered towards the western portion of the waste site.

Location: The site is approximately 1 mile (1.6 kilometers) northeast of the 200 West Area. It is located northwest of the 251 Electrical Substation, north of Route 11A.

Waste Type: Demolition and Inert Waste

Waste Description: The waste at the unit appears to be from burning activities. The current form of all waste material is solid. No evidence exists (historical or present) that chemical or radiological processes involving sustained releases of materials are associated with this waste site.

Waste Type: Oil

Waste Description: There is evidence of oil spills.

Description:

Closure Info: The removal action at the 600-36 waste site was conducted between September 2009 and

September 2010 and included the collection of focused and random samples from locations within the waste site. Radiological field screening was performed at the surface of the waste site to provide an indication of the presence of radiological COPCs. No radiological readings were greater than the measured background and no radiological contamination was found. The selected alternative for the 600-36 waste site was Confirmatory Sampling/No Further Action (CS/NFA). The results of the initial sampling indicated COPC concentrations greater than the RALs in the six sampled areas. The removal action activities progressed to implementation of the RTD alternative for those areas. As a result of analytical results exceeding the Remedial Action Limits, excavation of soil was done in zones of potential contamination (ZPCs) 2 (battery area) and 4 (burn pit), and focused sample (FS) locations FS 1, FS 2, FS 3 (stained and devegetated areas) and FS 5 (tar deposits). Excavation of soil at FS 4, which was considered analogous to FS 1, FS 2, and FS 3 based on visual indicators.

Code: 600-37	Classification: Accepted
Names: 600-37; Browns Wells; Johnson's Wells	Reclassification: Interim Closed Out (3/2/2011)
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date:

Description: The 600-37 waste site was reclassified as interim closed out following sampling of the dry wells per SAP DOE/RL-2009-60. Analytical results were less than RALs thus no action was required. The dry wells and above ground tanks at waste site 600-37 were left in place. The dry wells were not backfilled.

The waste site consists of four steel tanks and dry wells. The tanks had been resting on railroad ties approximately 1.2 meters (4 feet) above ground. A range fire burned through the area in June 2000. The southern-most tank was untouched by the fire and the tank supports remain intact. The wooden support structures under the other three tanks were burned and the tanks are now sitting on the ground. The dry wells are double encased with pipe used to center the inner casing within the outer casing. Three of the dry wells have a inside diameter of 38 centimeters (15 inches) and are approximately 4.9 meters (16 feet) deep. The fourth dry well has a much larger diameter, differs from the others with an outside diameter of 2.18 meters (7 ft). It contains an internal substructure in the form of a separate pipe oriented the same as the outer casing. The upper ends of the outer and inner structures terminate at the outer French drain cover. The dry wells were unaffected by the fire in June 2000. There is a dirt road that runs through the unit that appears to be surfaced with used oil.

Location: The site is located southeast of 200 West at the southern boundary of the Environmental Restoration Disposal Facility (ERDF) land easement.

Process Description: The four steel tanks appear to be of military origin. The configuration of the wells and tanks appear appropriate for an infiltration test. Raw water was assumed to have been disposed of in the wells, however sample testing should be conducted in the unit.

Waste Type: Water

Waste Description: Raw water was assumed to have been disposed of in the dry wells, however sample testing is needed to confirm this theory.

Closure Info: The 600-37 waste site was reclassified as interim closed out following sampling of the dry wells per SAP DOE/RL-2009-60. Analytical results were less than Removal Action Limits, thus no action was required. The dry wells and above ground tanks at waste site 600-37 were left in place and the dry wells not backfilled.

Soil sampling was conducted between May 18 and 26, 2010, during which soil samples were collected from inside the four French drains at the bottom surfaces of the drains, which were

approximated at 4.9 meters (16 ft) below ground surface. The soil media was a fine soil type collected from beneath the gravel layer in each French drain. One sample was collected from French drain 1, one sample was collected from French drain 2, and one sample was collected from French drain 4. Two samples were collected from the large diameter French drain, known as French drain 3. One sample was taken from the inside the inner structure and one from the annular space between the inner and outer structure.

No radiological postings were present at the waste site. Of the radiological surveys performed during removal action activities, all radiological dose readings were at or below the measured background and no radiological contamination was found.

Code: 600-38	Classification: Accepted
Names: 600-38; Railroad Siding Susie; Susie Junction; 600-25	Reclassification: Interim Closed Out (2/25/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The waste site has been remediated. The waste site was at the "Susie" railroad junction. The northeast corner of the junction had an excavated area that may have contained a siding for decontamination of railroad cars.	
In 1996, an employee interview stated that debris had been "picked up" by unknown parties, but most of the railroad maintenance equipment was left at the site.	
Location: The waste site was located at the southeast quarter of the southeast quarter of the southeast quarter of Section 24, Township 13 North, Range 25 East. "Susie" junction is southwest of Gable Butte. It is north of Route 11A and east of Route 6.	
Related Sites/ Structures: The waste site is at the junction of two railroad tracks, known as Susie Junction.	
Waste Type: Asbestos (friable)	
Waste Description:	The site waste potentially included asbestos.
Waste Type: Barrels/Drums/Buckets/Cans	
Waste Description:	The site waste included drums.
Waste Type: Equipment	
Waste Description:	The site contains railroad maintenance equipment.
Waste Type: Misc. Trash and Debris	
Waste Description:	The site contained miscellaneous trash.
Closure Info: Waste Site 600-38 was investigated between December 2009 and March 2010 through field observations and sampling to determine the nature and extent of contaminants of potential concern (COPCs) present in the waste site soils as part of the selected removal action alternative of CS/NFA prescribed in the Action Memorandum. This investigation was performed in accordance with DOE/RL-2009-60, Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites and DOE/RL-2009-53, Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit (RAWP). Through the investigation summarized in this report, it was found that analytical results from confirmatory sampling demonstrated that soil	

conditions at the waste site did not meet removal action levels (RALs). Therefore, in accordance with the methodology prescribed in the Action Memorandum, the alternative was changed to removal, treatment, and disposal (RTD).

Direct visual inspection of the site surface was performed, using available site information as a guide for visual cues such as staining, discoloration, absence of vegetation and other anomalies. Observations made during the site walk down included areas of devegetation, areas of darkened soil, and scattered debris consisting of rusted 18.9 liter (5 gallon) containers, metal, wood pallets, and refuse. Based on these observations, 16 individual zones of potential concern (ZPCs) were established at the 600-38 waste site to facilitate an organized removal action approach.

Radiological field screening was performed at the surface of the waste site to provide an indication of the presence of radiological COPCs. No radiological postings were present at the waste site. Of the radiological surveys performed during removal action activities, all radiological readings were at or below measured background, and no radiological contamination was found.

The Following Sites Were Consolidated With This Site:

Code: 600-25

Names: 600-25; Susie Junction

Code: 600-40

Classification: Accepted

Names: 600-40; West of West Lake Dumping Area

Reclassification: Interim Closed Out (7/21/2011)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This waste site has been remediated. The site had been an old dumping area. The debris was mostly consolidated in one of two locations, either along the road or on the hillside. The waste site included concrete rubble, wood, roofing materials, and miscellaneous metal debris and containers. The area along the road was approximately 364 square meters (3918 square feet). The portion on the hillside was 123 square meters (1324 square feet) in area. The area listed in the dimensions field represents the total area of both dumping areas. Additionally, a few pieces of scattered debris was found on the hillside. The debris at 600-40 was removed and sent to ERDF.

Location: The site was located in the 600 Area, east of route 4 North and 105 meters (345 feet) west of West Lake. The debris was located on a dirt road at the T-intersection from 4 North to West Lake. Additional debris was found on the hillside that slopes down to West Lake.

Process Description: This area is a former waste dump site.

Waste Type: Misc. Trash and Debris

Waste Description: The waste along the dirt road includes chunks and slabs of concrete, lumber, miscellaneous metal debris, rusted cans approximately 30.5 centimeters in diameter and 40.6 centimeters tall (12 inches in diameter and 16 inches tall), and what appears to be roofing (black, tarry sheets with gravel) materials. On the hillside are 2 small wooden structures approximately 1.8 meters by 1.8 meters by 1.2 meters (6 feet by 6 feet by 4 feet), a pile of wooden posts with each post approximately 20.3 centimeters in diameter and 1.8 meters long (8 inches in diameter and 6 feet long), other wood debris, what appears to be a wheelbarrow, and 2 large rusted metal cans approximately 20.3 centimeters by 20.3 centimeters by 35.6 centimeters tall (8 inches by 8 inches by 14 inches tall) and 30.5 centimeters in diameter by 35.6 centimeters tall (12 inches in diameter by 14 inches tall).

Closure Info: gravel access road, at the T of the access road intersection, known as Zone of Potential Contamination (ZPC 1). The second area was located on the hillside that slopes down toward West Lake (known as ZPCs 2, 3a, and 3b). Initial sampling and analysis indicated that soil concentrations of COPCs were greater than the RALs, thus confirming the implementation of the RTD alternative. Activities involved in the RTD action including soil excavation and verification sampling to demonstrated that the remaining in situ COPC concentrations in soil are less than or equal to the established RALs, and that no additional removal action is required. No radiological dose readings were greater than the measured background, and no radiological contamination was found. Excavation at the four ZPCs commenced in March 2010. Soil removal occurred to a total depth of approximately 0.6 meters (2 ft) and was laterally bound by the areas of wood debris and areas void of surface vegetation. Additionally, three test pits, each evaluated to a total depth of approximately 4.7 meters (15 ft) below ground surface, were dug east of ZPC 1 to verify that the extent of the 600-40 waste site was limited to the area of excavation. Backfill of the 600-40 waste site was completed on May 26, 2011.

Code: 600-49	Classification: Accepted
Names: 600-49; H-42 Gun Site Building Foundations, Ammunition Storage and Small Arms Firing Range	Reclassification: Interim Closed Out (8/11/2011)
Type: Foundation	Start Date:
Status: Inactive	End Date: 1/1/1958

Description: The site has been remediated. It consisted of six concrete foundations, concrete footings and miscellaneous concrete and gravel walkways. Four circular ammunition storage berms, each measuring about 25 meters (80 feet) in diameter, were located in the eastern portion of the site. The wood and part of the sandbags were consumed in the July 2000 fire. The concrete building foundations measured:

- #1. kitchen/mess hall with four floor drains, 12.4 meters by 10 meters (40.5 feet by 32.5 feet)
- #2. toilet/showers with five floor drains, ten toilet drains, 15.4 meters by 6.3 meters (50.5 feet by 20.5 feet)
- #3. concrete pad, 6.6 meters by 15.4 meters (21.5 feet by 50.5 feet)
- #4. concrete pad, 4 meters by 6 meters (13 feet by 20 feet)
- #5. concrete pad, 2.4 meters by 2.4 meters (8 feet by 8 feet)
- #6. concrete pad, 6 meters by 7.3 meters (20 feet by 24 feet).

A small arms firing range is located southeast of the revetment.

Location: The site was located 6.4 kilometers (4 miles) south of 200 East Area, on the south side of Army Loop Road and east of the powerline road to Rattlesnake Mountain.

Process Description: This is the location of a former U. S. Army anti-aircraft gun site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ WIDS site 6607-2, Gun Site H-42 Septic Tank, received waste from the kitchen sinks, floor

Structures: drains and the toilet/shower house. Site 600-226 is the dumping area for this base.

Waste Type: Demolition and Inert Waste

Waste Description: Concrete building foundations, pads and walkways, pipe, sandbags and sheetmetal remain.

Closure Info: The removal action at the 600-49 waste site was conducted between May and June 2011. Activities included direct visual inspection of the site surface using available site information as a guide for visual cues such as staining, discoloration, absence of vegetation and other anomalies; the collection of random verification samples from locations within the shooting range backstop of the waste site and excavation of soil under the RTD alternative from shooting range backstop to eliminate a source of contamination from lead slugs remaining in the soil. Observations made during previous site evaluations indicated the presence of six concrete foundations and footings, walkways, four artillery emplacements marked by revetments, and some sheet metal and pipe. Radiological field screening performed at the surface of the waste site to provide an indication of the presence of radiological COPCs. No chemical or radiological processes involving sustained releases of material are associated with this site. No radiological contamination was found. The available 600-49 waste site historical information and process knowledge was sufficient to proceed directly to implementation of the RTD alternative without requiring additional field observations or sampling to determine the nature and extent of contaminants of potential concern (COPCs) present in the waste site soil. The shooting range backstop consisted of soil mounded elevated greater than the general surface grade of the area. The mound was removed. No depression was created in the ground surface RTD activities, so backfilling was not required.

Code: 600-51 **Classification:** Accepted

Names: 600-51; Chemical Dump; Pile of White Powder **Reclassification:** Interim Closed Out (2/9/2011)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is an elliptical area with little or no vegetation.

Location: This site is located west of Route 4 North, between Route 1 and Route 11A. It is between the 1901-Z Building and well 699-64-62, just west of the export water line.

Waste Type: Chemicals

Waste Description: A sample of this material was analyzed with the HAZCAT field analysis kit. The bulk of this material appears to be a sodium compound.

Closure Info: The waste site was first identified in 1994. Shortly after being discovered, a HAZCAT field sampling kit was used to determine to powder was a sodium substance. A site visit in October 1999 found the pile of material was no longer present. The 600-51 waste site was investigated again in October 2009 through field observations. The original alternative for 600-51 was anticipated to be Remove, Treat and Dispose (RTD). Historical photographs of the pile of white powder (when it was present on the site) defined conservative northern and southern boundaries of the piles footprint. The silty, sandy, and rocky soil matrix showed no signs of discoloration. Confirmatory sampling was done to determine the nature and extent of contaminants of potential concern (COPCs) present in the waste site soils. It was determined that site conditions met removal action levels (RALs) and removal action objectives (RAOs) without further removal action. In accordance with the methodology prescribed in the Action Memorandum, the alternative was changed from RTD to confirmatory sampling/no further action (CS/NFA).

Code: 600-65 **Classification:** Accepted

Names: 600-65; 607 Batch Plant Drum Site **Reclassification:** Interim Closed Out (4/12/2011)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This waste site has been reclassified to Interim Closed Out. In 1995, two crushed and flattened 55-gal drums, one oil filter housing (approximately 2 quarts [1.9 liters]), a metal cable, one large concrete block (0.5 cubic yards [0.4 cubic meters]), and indications of possible petroleum disposal were identified. In 2001, the items noted above could not be located, and the area is possibly being used for fill material. Further investigations were conducted between June 2010 and February 2011 through field observations and sampling to determine the nature and extent of contaminants of potential concern.

Location: The debris was located approximately 0.5 miles east of the 200 Area Fire Station. It is west of 200 East Area on the north side of Route 3, near Gravel Pit 30.

Related Sites/ Structures: 607 Batch Plant Gravel Pit

Waste Type: Oil

Waste Description: Two crushed and flattened 55-gal drums, one oil filter housing, one large concrete block, and indications of possible petroleum disposal. Reported Date: April 17, 1995.

In October 2001 these items were not located at the site.

Closure Info: The original selected alternative for the subject waste site was Remove Treat and Dispose (RTD). This alternative was selected because, based on the types of debris present, concentrations of contaminants of potential concern (COPCs) had the potential to exceed the Removal Action Levels (RAL). Investigative sampling and analysis demonstrated that soil concentrations of contaminants were less than or equal to the Remedial Action Levels without the need for further action. As a result, in accordance with the Action Memorandum, the alternative was changed to Confirmatory Sampling/ No Further Action (CS/NFA). Field activities included ground penetrating radar (GPR) scanning, radiological surveys and soil sampling. The GPR scan and metal detector survey performed at the last known location of the drums and oil filter identified one anomaly within the WIDS boundary of the 600-65 waste site approximately 1 m (3 ft) below ground surface and a second anomaly within a mound of overburden. No radiological readings were greater than the measured background, and no radiological contamination were found. Analytical results from the investigative sampling evolution at the 600-65 waste site showed that concentrations of COPCs were less than or equal to RALs, thereby demonstrating compliance with the established RAOs. Sample results determined excavation was not required at the 600-65 waste site. These results also support reclassification to Interim Closed Out status.

Code: 600-66 **Classification:** Accepted

Names: 600-66; 607 Batch Plant Orphan Drums **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of one rusted 55-gallon (208 L) drum laying on the ground surface on its side. No label or hazardous substance are evident.

Location: The drum is located north of Route 3, approximately 400 meters (1300 feet) east of the 607 Batch Plant.

Related Sites/ Structures: The abandoned drum may be associated with the Batch Plant.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Two rusted drums, contents unknown.
 Reported Date: August 1, 1995

Code: 600-71 **Classification:** Accepted
Names: 600-71; 607 Batch Plant Burn Pit **Reclassification:** None
Type: Burn Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of an area of charred ground, a piece of rusted sheet metal and small pieces of debris. In June 2004, the expansion of Gravel Pit 30 pushed soil over the northern portion of the 600-71 Burn Pit.
Location: The site is located west of route 4, north of route 3. Precisely, on the batch plant entrance road turn east on the first dirt road; follow road for about 350 meters (1150 ft); walk north about 70 feet (23 meters) to the site.
Process Description: Although the Burn Pit is located adjacent to the Batch Plant, it does not seem to be associated with the Batch Plant operation.

Related Sites/ Structures: The 607 Batch Plant is adjacent to the Burn Pit.

Waste Type: Misc. Trash and Debris
Waste Description: Metal, wood, glass, and rubber debris. Charred remains of burned material.
 Reported Date: August 1, 1995. This material was still present on the 2002 site visit.

Code: 600-218 **Classification:** Accepted
Names: 600-218; H-61-H Anti-Aircraft Artillery Site Dumping Area **Reclassification:** Interim Closed Out (7/21/2011)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The dumping area has been remediated. It consisted of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The dumping area was irregularly shaped and was comprised of two distinct areas. The larger area measured 20 meters by 74 meters (67 feet by 243 feet). The smaller area was approximately 48 meters (157 ft) northeast of the larger portion, and was rectangular in shape, measuring approximately 1.5 meters (5 ft) by 1.8 meters (6 ft).
Location: This site was located just southwest of the intersection of Route 11 and Route 6. It is 0.4 miles south of Route 11 and just west of Army Loop Road. The site is in the east half of the northeast quarter of Section 34, Township 13 north, Range 25 east. The dumping area is located in the SW portion of the site.

Related Sites/ Structures: This dumping area is related to the Anti-Aircraft site 600-216.

Waste Type: Demolition and Inert Waste
Waste Description: Wood waste from former buildings, concrete footings, pipe, sheet metal, barbed wire, steel fence posts.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Empty oil cans, paint cans with dried paint.

Closure Info: The dumping area was irregularly shaped and was comprised of two distinct areas. The larger area measured 20 meters by 74 meters (67 feet by 243 feet). The smaller area was approximately 48 meters (157 ft) northeast of the larger portion, and was rectangular in shape, measuring approximately 1.5 meters (5 ft) by 1.8 meters (6 ft). It consisted of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The analytical results from initial sampling demonstrated that soil conditions at the waste site did not comply with established removal action levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD). The removal action at the 600-218 waste site was conducted between August 2009 and May 2011, and included the collection of statistically based random and focused samples from locations within the boundaries of the waste site. Nineteen random locations were selected. Locations R4, R9, R11 and R17 were sampled at depths of 4 feet and 8 feet. Soil excavation was required at location R3 and R14. Samples were collected from the excavated areas for remedial verification.

Radiological surveys performed for the 600-218 waste site resulted in no radiological dose readings greater than the measured background, and no radiological contamination was found.

Since RTD activities were limited in depth to less than 0.6 meters (2 ft) (i.e., surface debris removal at the waste site), backfill was not required at the 600-218 waste site.

Code: 600-220	Classification: Accepted
Names: 600-220; H-51 Anti-Aircraft Artillery Site Dumping Area	Reclassification: Interim Closed Out (8/11/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date: 1/1/1958

Description: The site has been remediated. It consisted of three dumping areas. One area was surrounded with T-posts. Observations made during the 2010 site evaluation included an area covered with a white, granular material, an area containing burned material and other debris, a small area containing what appeared to be a tar-like substance, an area of visible debris such as partially buried containers, and a mound containing a wide variety of debris such as heavily corroded metal cans and containers, glass, and batteries. In addition, two mounds were observed that might have been used as a firing range containment berm. The debris at 600-220 was determined to be culturally significant and was not removed.

Location: The site was on Army Loop Road, approximately 2 miles southwest of 200 West Area and extends to the southwest near SR 240. This site is located in the southeast quarter of Section 15, Township 12 North, Range 25 East.

Process Description: The dumps are located in three general areas. The July 2000 fire burned off all flammable material, such as wood, that had remained at the site. The dump area with the T-posts around it contains metal, transite, fluorescent light bulbs, metal ducting, fiberglass insulation, an unknown white granular substance, pipe, and wire. The second area is mostly wood, little remains now. The third area is a relatively large area consisting of empty cans and empty food, oil, paint and bleach bottles. Several wooden ammunition boxes and cardboard canisters were observed before 2000, but are now gone. The area appears to have been scraped with a bulldozer. Several waste materials are partially buried. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: This site is associated with 600-53, the site building foundations, and 6607-3, the site's septic system.

Waste Type: Misc. Trash and Debris

Waste Description: Wood, metal, transite, fiberglass, piping, glass, fluorescent light tubes, a white granular substance, empty cans, buckets, and bottles, fence posts, barbed wire, and concrete

Waste Type: Asbestos (non-friable)

Waste Description: Transite siding

Closure Info: The analytical results from confirmatory sampling demonstrated that soil conditions at the waste site did not meet removal action levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD). Radiological surveys performed during sampling activities indicated no radiological readings greater than the measured background, and no radiological contamination was found.

Seven Zones of Potential Concern (ZPC) and three biased locations were established during site evaluation. Focused samples were collected from ZPCs 1 through 4 and biased samples at BS 1 through 3 based on historical and process knowledge and visual indicators from the surface, which is generally defined as 0 to 0.3 m (0 to 1 ft) below ground surface. Random samples were collected from ZPC 5 through 7 (using Visual Sample Plan (VSP) software as direct visual indicators were absent for these ZPCs). Analytical results from the initial sampling evolution indicated contaminants of potential concern (COPC) concentrations exceeded Removal Action Levels in three areas; ZPC 1 (white granular material), ZPC 2 and BS 1 (debris areas) and BS 1 (battery area) thus initiating RTD in those areas. The areas comprising ZPC 1, ZPC 2, and BS 1 were excavated to a vertical depth of approximately 0.9 to 1.2 meters (3 to 4 ft) below ground surface. In addition to the removal of the impacted soil from ZPC 1, ZPC 2, and BS 1, miscellaneous scattered debris, along with approximately 0.9 to 1.2 meters (3 to 4 ft) of underlying soil, was removed, thus enlarging the area of excavation beyond the three areas of impact identified during initial and in process sampling.

Code: 600-222

Classification: Accepted

Names: 600-222; H-60 Gun Site

Reclassification: Interim Closed Out (2/25/2011)

Type: Military Compound

Start Date:

Status: Inactive

End Date:

Description: The waste site has been remediated. There was very little evidence of the former military gun site. A few trees, walkways, roads and an old "Underground Telephone -Contact Signal Officer before excavating" warning sign is present (a second "underground telephone" sign burned in the July 2000 fire).

After the July 2000 fire, other material left at the site has become visible, including pieces of ceramic pipe, a dumpsite with two oil filters, coat hangers, and a few small pieces of transite siding. South of the access road are several small piles of decayed batteries or fuses.

Location: The H-60 Gun site was located approximately 1.2 miles west of 200 West Area and is just east of SR240.

Waste Type: Batteries

Waste Description: South of the main area and access road are several small piles of decayed batteries or fuses. In another pile are two oil filters, one whole and the other in parts.

Closure Info: The 600-222 Waste Site was investigated between January and December 2010 through field

observations and sampling to determine the nature and extent of contaminants of potential concern (COPCs) present in the waste site soils as part of the selected removal action alternative of CS/NFA prescribed in the Action Memorandum. This investigation was performed in accordance with DOE/RL-2009-53, Removal Action Work Plan for 48 Waste Sites in the 200-MG-1 Operable Unit (RAWP) and DOE/RL-2009-60, Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites. Through the investigation in accordance with the methodology prescribed in the Action Memorandum, the alternative summarized in this report, it was found that analytical results from confirmatory sampling demonstrated that soil conditions at the waste site did not meet removal action levels (RALs). Therefore, was changed to removal, treatment, and disposal (RTD). The removal action at the 600-222 Waste Site included the collection of focused samples per the methodologies prescribed in the SAP.

The key activities pertinent to the removal action at the 600-222 Waste Site included the collection of judgmental soil samples based on visual indicators, excavation of soil, under the Remove, Treat, Dispose (RTD) alternative, in the zone of potential contamination (ZPC) 3, and areas identified by focused sample locations FS 1, FS 2, FS 2b, and FS 4 as a result of analytical results exceeding the RALs and the removal of debris and underlying soil at FS 3 as a result of visual indicators. According to observations made during a site walkdown in 1997, little evidence remained of the former artillery site. Features observed included roadways, a few trees, and a sign marking an underground telephone line. Miscellaneous debris comprised of various metal items, small batteries or fuses, ceramic piping, oil filters, and transite siding were also observed at the 600-222 Waste Site. Batteries, oil filters, and miscellaneous debris were physically located outside the previously established waste site boundary designated in Waste Identification Data System (WIDS). However, these items are included in the WIDS historical site description. As a result, the observed debris was considered part of the 600-222 Waste Site, and was included within the scope of this removal action.

Excavation at the 600-222 Waste Site commenced on October 14, 2010. The extent of excavation at the areas impacted was initially determined from the sampling data, using visual indicators to guide excavation depth during RTD. The initial depth of excavation in the impacted areas was determined to be approximately 0.6 m (2 ft) bgs. In process sampling and chemical field screening were conducted during RTD activities in the areas of excavation at the 600-222 Waste Site. Analytical results of the in-process sampling indicated concentrations of lead (FS 2 only) and total petroleum hydrocarbon (TPH) diesel (FS 1 only) were still present at concentrations greater than the RALs. As a result, in conjunction with the chemical field screening, the excavation depth was further refined to approximately 1.5 m (5 ft) bgs at FS 1 and FS 2b, and 0.9 m (3 ft) at FS 2. Although analytical results indicated COPC concentrations were less than the RALs at FS 3, debris in that area was removed during RTD activities, along with underlying soil to a depth of approximately 0.6 m (2 ft).

The backfill concurrence form was approved by the regulatory agency(ies) on February 3, 2011. Backfill at the 600-222 Waste Site was completed on February 9, 2011. In accordance with the ecological compliance review conducted for the 600-222 Waste Site, this area does not meet the requirements of a Level III or Level IV designation as described in DOE/RL-96-32, Hanford Site Biological Resources Management Plan; therefore, revegetation at the 600-222 Waste Site is not required. DOE may elect to revegetate the 600-222 Waste Site at a future date for aesthetic purposes.

Code: 600-226	Classification: Accepted
Names: 600-226; Gun Site H-42 Dumping Area	Reclassification: Interim Closed Out (5/20/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date: 1/1/1958
Description: This waste site has been remediated. The site was an old dumping area for an anti-aircraft site.	

The surface of the site has scattered and decaying debris including pipe, glass, empty buckets, slightly rusted (not corroded) 55-gallon drum, dried paint, cans, transite, broken concrete, and dry cell batteries. Wood had formerly been present, but was burned in the June 2000 fire (see sitecode 600-281). The range fire in June 2000 exposed several additional areas of debris. This debris included material suspected to be asbestos, glass, metal pipes, gauges, military issue dishes, and other sundry items. Even though the additional exposed debris was presumed to be associated with the H-42 Gun Site (based on the type of debris) and was in close proximity to the 600-226 waste site, these areas were incorporated into the 600-281 waste site.

Location: The site is located 4 miles south of 200 East Area, on the south side of Army Loop Road and on both the east and west sides of the powerline road to Rattlesnake Mountain.

Process Description: Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed.

The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: This is a dumping area for 600-49, the H-42 Gun Site Building Foundation and Ammunition Storage location. The septic system is site 6607-2. More debris is documented in sitecode 600-281.

Closure Info: The Remove, Treat, Dispose (RTD) alternative was selected for 600-226 as the preferred alternative as documented in the Action Memorandum. The RTD action included excavation of contaminated soil and other materials. Direct visual inspection of the surface of the 600-226 waste site was conducted, using available information as a guide for visual cues such as staining, discoloration, absence of vegetation, and other anomalies. The visual inspection incorporated observational indicators and historical information to identify areas of concern, which included several rusted metal containers of various capacities (18.9 liters [5 gallon], 3.78 liters [1 gallon], and 0.94 liters [0.25 gallon]) scattered over an area approximately 3.71 square meters (40 square feet) in size. Radiological field screening was conducted at the surface of the waste site to provide an indication of the presence of radiological contaminants. Surface geophysical surveying (using ground penetrating radar) was conducted to identify subsurface features. Chemical field screening performed during RTD activities was used to verify the extent of contamination or, in conjunction with visual indicators, to identify areas of potential contamination that would require RTD. During RTD activities, a section of metal bar stock was observed projecting above the ground surface near the 600-226 waste site. As a result of operational safety concerns, the metal bar stock was removed, which led to the discovery of additional assorted metal debris. The unearthed metal was collected for disposal. Revegetation at the 600-226 waste site is not required, however, the 600-226 waste site has been reseeded.

Code: 600-227	Classification: Accepted
Names: 600-227; H-40 Gun Site Building Foundations	Reclassification: None
Type: Foundation	Start Date:
Status: Inactive	End Date: 1/1/1958

Description: The site has eight building foundations, four ammunition storage structures and a valve pit

remaining. The foundations are: #1. Kitchen/mess hall foundation with four floor drains: 12.4 meters by 9.8 meters (40.5 feet by 32 feet) #2. Shower/toilet foundation with five floor drains and ten toilet drains: 6 meters by 16.5 meters (20 feet by 54 feet) #3. Concrete pad: 4 meters by 3.2 meters (13.5 feet by 10.5 feet) #4. Concrete pad: 15 meters by 7.3 meters (49.5 feet by 24 feet) #5. Concrete pad: 3.7 meters by 5.5 meters (12 feet by 18 feet) #6. Concrete pad: 1.8 meters by 2.4 meters (6 feet by 8 feet) #7. Concrete pad: 5.5 meters by 6.7 meters (18 feet by 22 feet) #8. Concrete pad: 3.7 meters by 6.4 meters (12 feet by 21 feet). The valve pit is a vertical steel culvert, 1.2 meters (4 feet) in diameter by 1.5 meters (5 feet) deep. The water main to the site is visible in the bottom of the pit, with a valve and pipes branching off toward to individual buildings. The four ammunition storage structures on top of the hill are constructed of rock, soil, sandbags, wood, metal and tar paper. The ammunition storage bunkers are approximately 23 meters (75 feet) in diameter. On the south side of the site is a concrete-transite pipe 35 centimeters (14 inches) high, and 10 centimeters (5 inches) in outside diameter. At the base of the pipe are pebbles averaging 4 centimeters (1.5 inches) in diameter. Neither the pipe nor the pebbles are stained. An area surrounding the pebbles is evidence of boards that have burned away, about 1.8 meters (72 inches) by 2 meters.

Location: This site is located southeast of the 200 East Area, on the south side of Route 4 South. Trees viewed from Route 4 South aid in locating the site.

Process Description: Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each gun site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: The septic system for this area is 6607-1 and 600-228 is the associated dumping areas.

Waste Type: Demolition and Inert Waste
Waste Description: Concrete foundations, pipe, wood and sandbags remain at the site.

Code: 600-228	Classification: Accepted
Names: 600-228; H-40 Gun Site Dumping Area	Reclassification: Interim Closed Out (9/21/2011)
Type: Dumping Area	Start Date:
Status: Inactive	End Date: 1/1/1958

Description: Remediation activities have occurred at this waste site. The site included four dumping areas, located in pits in the southern portion of the H-40 area. The pit located west of the main site measured about 12 meters (40 feet) in diameter and contains sheetrock, metal, transite, glass and empty paint cans. Two small pits, located south of the main site, were each about 4 meters (15 feet) in diameter. One pit was empty and the other contains steel fence posts and barbed wire. The largest pit was to the south-southeast, and on the topographic slope facing to the south. It contained a large quantity of metal objects, as well as some transite and glass. The July 2000 fire burned much of the wood debris in this pit and the western pit.

Location: This site is located southeast of the 200 East Area, on the south side of Route 4 South. Trees viewed from Route 4 South aid in locating the site. The dumping areas are located to the

southeast and west of the H-40 Gun Site.

Process Description: These pits received debris from several years of military operation of the anti-aircraft site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: This site is related to 600-227 (the building foundations), and 6607-1 (the septic tank).

Closure Info: The analytical results from confirmatory sampling demonstrated that soil conditions at the waste site did not meet removal action levels Removal Action Levels (RALs). Therefore, the alternative was changed to removal, treatment, and disposal (RTD).

Direct visual inspection of the site surface was performed for visual cues such as staining, discoloration, absence of vegetation, presence of debris and other anomalies. Due to the presence of empty paint cans and material that appears to be dried paint, the site is listed as having had a potential for liquid release. Radiological surveys were performed. No radiological dose readings above background nor radiological contamination was found.

Each of the four pits were considered zones of potential contamination (ZPCs). Random, focused soil samples were collected during the initial sampling, based on historical and process knowledge of the waste site as a dumping area, and visual indicators from ZPC 1, ZPC 2, ZPC 3 and ZPC 4. Analytical results of samples collected from ZPC 2 and ZPC 3 did not indicate any contaminant concentrations greater than RALs. Areas of scattered debris observed at ZPCs 2 and 3 were removed during the RTD activities at the 600-228 waste site. Initial samples collected from ZPC 1 and ZPC 4 indicated concentrations of antimony and lead were greater than the RALs, thus indicating RTD for those areas. The area comprising ZPC 1 was excavated to depths ranging from approximately 0.91 meters (3 ft) below original ground surface in the southeast corner to approximately 2.4 meters (8 ft) in the northwest corner. The area comprising ZPC 4 was excavated to a depth of approximately 0.61 meters (2 ft) below original ground surface.

Code: 600-262	Classification: Accepted
Names: 600-262; Lysimeter Test Site; West Lake Test Crib	Reclassification: Interim Closed Out (3/21/2011)
Type: Crib	Start Date: 1/1/1959
Status: Inactive	End Date: 1/1/1962
Description: This site was investigated and sampled in 2010. Sample results were below regulatory concerns, so no excavation was required. The radiological posting was removed in April 2010. The site includes a test crib and twenty one monitoring wells, that were grouted in 2007. The entire test site area is surrounded by metal fence posts. In 1999, no warning signs or postings are visible at the site. The ground surface is gently rolling. Northeast of the test crib is a depressed area approximately the same size as the crib. The soil is sandy and no discoloration is apparent. Vegetation at the site is composed primarily of grasses but includes a few small shrubs.	

Location:

Process Description: A model test crib was built in 1959 for a field experiment for predicting crib capacity and crib waste retention. The field experiment was designed to check the validity of laboratory results and allow the scientists to observe the behavior of solutions put into the ground in a field setting. The location near West Lake was chosen because the depth to groundwater was only 3.7 meters (12 feet).

In May 1959, 34,200 liters (9,000 gallons) of calcium nitrate solution spiked with strontium-85 was placed into the 0.36 square meter (4 square foot) crib. According to HW-61476, seven 5 centimeter (2 inch) diameter wells were placed around the crib to monitor the infiltration of the solution through the soil. HW-61476 refers to them as wells "A" through "G." All the wells were drilled vertically except for well "F", located 1.2 meters (4 feet) east of the crib. Well "F" was drilled at an angle that intersected the water table below the center of the crib.

For the first week of the experiment, samples were collected from the wells every four hours. Nitrate was detected after 4256 liters (1120 gallons) of solution had been added to the crib. Well "F" detected strontium-85 after 16,900 liters (4450 gallons) of solution had been added to the crib. Well "E", located (4 feet) northeast of the crib, detected strontium-85 after 21,660 liters (5700 gallons) of solution had been added to the crib. The total infiltration of strontium-85 had not reached completion by the time the experiment was terminated.

HW-71573, written in 1962, describes the test crib being used again for a similar experiment. Fifteen additional monitoring wells were placed in the area. The infiltrate solution was also calcium nitrate spiked with Strontium-85.

Waste Type: Water

Waste Description: A concentrated solution of calcium nitrate and strontium-85 was prepared in the laboratory. 900 milliliters of the concentrated solution was added to a 55 gallon drum containing sanitary water. The resulting solution contained 600 parts per million of calcium and 0.00013 microcuries per milliliter. During the month of May, 1959, 34,200 liters (9000 gallons) of this solution was discharged to the ground through the wooden crib box. In 1961, another test was done at this site. A total of 61,560 liters (16,200 gallons) of water spiked with calcium nitrate and strontium-85 was injected into the crib.

Closure Info: The 600-262 Waste Site achieved the established Removal Action Objectives without implementation of the Remove,Treat,Dispose alternative. No excavation was done and no backfill and/or contouring activities were required at this waste site.

Sampling activities at the 600-262 waste site was conducted on February 2, 2010, and included the collection of focused samples from locations within the boundaries of the waste site. A total of six soil samples were collected from two locations. The upper layer of soil (surface depth of approximately 0.5 m [1.6 ft.]) found inside the test crib structure during site evaluation consisted of blown in sand. It was not involved in the experimentation, and was not targeted for sampling. Based on 1959 site historical documentation, an increase of radioactivity was found to be present at about 1 meter (3.3 ft.) below the bottom of the test crib. Therefore, the sampling depth at Sample Location 1 was set at 1.5 meters (5 ft.) below ground surface to target that area. Three samples were collected from Sample Location 1, at 0.5 m (1.6 ft.) below the original soil surface (the bottom of the crib), 1.5 m (5 ft.) below ground surface and at 2.4 m (8 ft.) below ground surface. Sample Location 2 was downgradient, approximately 2.9 meters (9.5 ft) from the test crib box in a northeast direction between capped Wells G and 8. Three samples were taken at this location at 0.3 meters (1 ft), 1.5 meters (5 ft.), and 2.4 meters (8 ft.) below ground surface.

Code: 600-275**Classification:** Accepted

Names: 600-275; Army Ammo Site; Igloo Site; Regulated Storage Area; 218-W-14 **Reclassification:** Interim Closed Out (5/20/2011)

Type: Foundation **Start Date:** 1/1/1964

Status: Inactive **End Date:**

Description: This site has been remediated. The original bunkers and guard house have been removed. The site is well defined by a perimeter fence. The access roads are visible bladed areas where the seven bunkers had been located. Rectangular mounds of soil, each approximately one meter (3 feet) high where the igloo structures had been located, were also removed.

Location: The site was located approximately one mile west of the 200 West Area, south of Route 11A.

Process Description: The seven army igloos were originally used for ammunition storage and Nike missile parts. Drilling equipment for the Basalt Waste Isolation Project was also stored in the igloos. Later, radioactive material (plutonium scrap waste) was stored in the igloos.

Drawing H-6-354 is the design plan for the storage units. It is dated 12/14/64. This is believed to be the approximate construction date.

Closure Info: A successful completion of the removal action was conducted at the 600-275 waste site, also known as the former Igloo Army Ammo Storage Site. The alternative proposed in DOE/RL-2008-44, Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites (EE/CA) and selected in DOE/RL-2009-48, Action Memorandum for Non-Time Critical Removal Action for 11 Waste Sites in 200-MG-1 Operable Unit (Action Memorandum) was removal, treatment, and disposal (RTD). The 600-275 waste site was investigated in December 2009 through field observations and sampling to determine the nature and extent of contaminants of potential concern (COPCs) present in the waste site soils as part of the selected removal action alternative. In September 2010, the igloo foundations were removed from the 600-275 waste site; visual inspections of the foundations and underlying soil were conducted, and soil samples were collected between September 2010 and February 2011. Analytical results from initial sampling demonstrated that soil conditions at the waste site did not comply with established removal action levels (RALs).

The removal action at the 600-275 waste site was conducted between December 2009 and February 2011. Activities included the collection of judgmental and random samples from locations within the boundaries of the waste site, removal of seven concrete igloo foundations, and approximately 0.3 meters (1 foot) of underlying soil. Collection of judgmental and random samples was based on historical and process knowledge, and visual indicators. Excavation of soil under the RTD alternative was done in zones of potential contamination (ZPCs) 1 and 2, identified as igloos T-101 and T-104, respectively. Random samples were collected from the excavated areas at ZPC 1 (T-101) and ZPC-2 (T-104) for verification purposes, laboratory analysis for COPCs, and evaluation of analytical results to demonstrate achievement of RALs.

In August 2010, the cover soil was removed from the igloo foundations. Visual inspections and radiological surveys were performed on all seven foundations, which were observed to be intact with only superficial hairline cracks, no visual indicators (i.e., staining or discoloration) were observed, and radiological screening did not indicate evidence of contamination or dose rates greater than background. Concrete patches were observed at the T-104 igloo, indicating that the foundation may have been altered after its original construction, suggesting a potential event may have occurred. All seven foundations were subsequently removed along with approximately 0.15 meters (0.5 feet) of underlying gravel. No soil discoloration was observed beneath the seven igloo foundations.

Excavation of impacted soils at ZPC 1 commenced in January 2011.

Code: 600-281 **Classification:** Accepted
Names: 600-281; Scattered Debris South of Army Loop Road **Reclassification:** Interim Closed Out (9/21/2011)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: This waste site has been remediated. After the range fire in June 2000, additional areas of debris were visible. Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers, 55 gallon drums and batteries.

Location: The waste site has been remediated. The areas of debris are located south of Army Loop Road, approximately 150 meters east of the H-42 Gun Site.

Related Sites/ Structures: The debris is associated with sitecode 600-49 and 600-226.

Waste Type: Demolition and Inert Waste
Waste Description: Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers. Three compressed gas cylinders were found adjacent to well 699-16-51.

Closure Info: Direct visual inspection of the site surface was performed for visual cues such as staining, discoloration, absence of vegetation, presence of debris and other anomalies. Radiological surveys were performed during sampling activities. No radiological readings greater than background, and no radiological contamination was found. The site was confirmed to be a nonradiological site.

Ten Zones of Potential Contamination (ZPC) were identified. Initial random samples were collected from each zone. The results of the initial, confirmatory sampling indicated contaminant concentrations greater than the Removal Action Levels (RAL) in five of the sampled areas (ZPC 1, ZPC 2, ZPC 5, ZPC 6 and ZPC 8), thus the Remove, Treat, Dispose (RTD) option was initiated in these areas. The excavation depths ranged from 2 to 7 feet below ground surface. Two areas of transite debris were identified during site evaluation and were removed during RTD activities at the 600-281 waste site. Additional focused samples were collected from these areas.

The excavated areas were contoured and backfilled in August 2011.

Code: 600-282 **Classification:** Accepted
Names: 600-282; Wood and Coal Debris Piles **Reclassification:** Interim Closed Out (8/11/2011)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site has been remediated. It consisted of an area of scattered wood debris and a pile of coal. The southern portion of the 600-282 waste site contained an area of debris that appears to have been a structure, an earthen ramp, small coal pile, a portion of a drainage ditch, and what appeared to be a square well supplied by underground piping. A surface veneer of coal ash was strewn in the area between the northern and southern areas. The debris was generally concentrated in several piles in the southern area, as well as sparsely scattered over areas adjacent to the waste site. The debris generally consisted of lumber, metal debris, and cans.

Location: The site was located east of Route 4N and west of West Lake. It is approximately 412 meters (1,351 feet) west and slightly north of the 600-40 dump site.

Waste Type: Misc. Trash and Debris

Waste Description: Coal and wood debris were identified on a site walkdown in 2004.

Closure Info: Sampling results from the confirmatory sampling demonstrated that the waste site did not achieve compliance with the removal action levels (RALs). Based on the analytical results, the alternative was changed to removal, treatment, and disposal (RTD).

The removal action at the 600-282 waste site was conducted from August 2010 through April 2011 and included the collection of focused and random soil samples. Based on the visual indicators and observations made during the site evaluation, eight Zones of Potential Contamination (ZPCs) were identified at the 600-282 waste site. Focused samples were collected from each ZPC, based on process knowledge and visual indicators for the initial sampling evolution. Visual indicators observed at ZPC 6 (which appeared to be a well with a rectangular wood frame) and ZPC 7 (an open drainage ditch) suggested a potential for contamination below the surface of the waste site in these areas. Therefore, in process sampling at a depth of approximately 1.2 meters (4 ft) below ground surface was conducted. The analytical results in those areas confirmed that they met the established RALs and did not require RTD.

Zone 2 (ZPC2) exceeded Removal Action Levels (RAL), resulting in the implementation of the RTD alternative. Removal of impacted soils in that area commenced on March 30, 2011, with the lateral extent of excavation at the ZPC determined utilizing visual indicators. Samples were collected at depths of 2.4 and 3.4 meters (8 and 11 ft) below ground surface to refine the vertical extent of excavation to a total depth of approximately 2.4 meters (8 ft). In addition to excavation at ZPC 2, scattered debris from locations throughout the 600-282 waste site was removed, along with underlying soil to a depth of approximately 1 meter (0.3 ft) during RTD activities. Backfill of the 600-282 waste site was completed on May 26, 2011.

No radiological dose readings were greater than background was identified and no radiological contamination was found.

Code: 616-WS-1	Classification: Accepted
Names: 616-WS-1; 616 NRDWSF French Drain	Reclassification: Closed Out (10/24/2001)
Type: French Drain	Start Date: 1/1/1986
Status: Inactive	End Date: 1/1/2001

Description: This site consists of a perforated concrete pipe set vertically into the ground. The ground surface is flush with the top of the pipe. The pipe has a layer of gravel at its bottom and a concrete cover over its top. The lid is 10.2 centimeters (4 inches) thick and 1.2 meters (3 feet 10 inches) in diameter. Two railroad ties lie on opposite sides of the lid.

Location: The site is located north of the northeast corner of the 616 Facility. The 616 Building is located on the north side of Route 3 between 200 East and 200 West Areas.

Process Description: This unit is designed to receive liquid collected from the east and north loading pads of the 616 Facility. This unit services both the north and the east loading dock trenches. The loading and unloading areas are provided with a sloped, curbed and plugged drainage trench. All liquid accumulations including precipitation are sampled: liquids with chemical concentrations above

Ecology guidelines for unconditional release to the environment are recovered, processed, and shipped as regulated waste; liquids with chemical concentrations below the Ecology guidelines are released to this unit.

- Related Sites/ Structures:** The site is associated with the loading pads at the 616 Nonradioactive Dangerous Waste Storage Facility (616 NRDWSF).
- Waste Type:** Stormwater Runoff
- Waste Description:** The unit received liquid from loading pad collection troughs. The water was sampled to ensure it met release criteria before being released to the drain.
- Closure Info:** 616 and 616-WS-1 were addressed as a group. The information below documents information for the group of sites.

Because operating records did not demonstrate that early operations within 616 met spill cleanup requirements, the unit was considered potentially contaminated and underwent decontamination. Equipment used for waste handling was removed. The storage cell floors, sumps, trenches, and outdoor loading pads were cleaned using nonregulated detergents. The rinsates were collected, analyzed, designated and disposed of as nondangerous waste. Some minor residual staining/discoloration of coated surfaces remained after decontamination. This was allowed in the closure plan.

Completion of closure plan requirements was certified by a Professional Engineer on 6/13/2001. The closure certification was transmitted to the Washington Department of Ecology on 9/5/2001. Ecology accepted the closure certification on 10/24/2001.

Sampling of the french drain was required as part of the closure plan for the 616 facility. The gravel within the french drain was removed and stored pending sampling results. A single soil sample was taken from the center of the drain. The sample was analyzed for pH, volatile organic compounds, semi-volatile organic compounds, RCRA (Resource Conservation and Recovery Act) metals, PCBs (polychlorinated biphenyls), herbicides, pesticides, phosphorous pesticides, cyanide, total organic halides, anions, phenols, and chrome VI. The sample met closure standards for all constituents.

-
- Code:** CTFN 2703-E **Classification:** Accepted
- Names:** CTFN 2703-E; 200-E Chemical Drain Field; Chemical Tile Field North of 2703-E **Reclassification:** None
- Type:** Drain/Tile Field **Start Date:**
- Status:** Inactive **End Date:**
- Description:** The waste site consists of a trench and seepage basin. As of 1994, this unit had no free standing liquids nor any sign of natural vegetative growth. The seepage basin is referred to as the 200-E Chemical Drain Field. It has not been backfilled or filled with any materials that would facilitate drainage.
- Location:** This unit lies west of the 2607-E1 septic system, north of the 2703-E Building and northwest of the intersection of Fourth Street and Baltimore Avenue, in the 200 East Area.
- Process Description:** The drain field was designed to receive non-hazardous liquid waste from the 272-E and 2703-E Buildings. Wastewater from the 272-E Building floor drain was discharged to a process sewer line which extends to the disposal site (see 200-E-287-PL). Wastewater from two floor sumps in the 2703-E Building was discharged to the same process sewer line and combined with the 272-E Building effluent before reaching the disposal site.
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Related Sites/ Structures: The CTFN of 2703-E is associated with the 272-E Building and the 2703-E Building. The pipeline associated with this tile field is sitecode 200-E-287-PL.

Waste Type: Process Effluent

Waste Description: The Chemical Tile Field North of 2703-E is currently inactive. The wastewater from the 272-E Building was hydrotesting wastewater which was not treated before being discharged to the floor drain. The wastewater discharged from the two sumps in the 2703-E Building included: floor wash, rinse water, cooling water, sinks, and steam condensate.

Code: OCSA

Classification: Accepted

Names: OCSA; Old Central Shop Area; Central Shop Area

Reclassification: None

Type: Foundation

Start Date: 1/1/1945

Status: Inactive

End Date:

Description: The site consists of building foundations and scattered debris. The central shops had been surrounded by over 1.3 miles (2.1 kilometers) of fencing. The structures in the shop complex included offices, storage huts, boiler houses, warehouse and storage facilities as well as multiple shop facilities (automotive repair, sheet metal welding, paint, etc). There were also bulk fuel storage and a septic system. A site visit on 12/4/97 observed pieces of lumber, corrugated metal, bricks, shingles, buckets, a barrel, office furniture, and wooden tables. There are two pits containing debris and nails.

Location: The site is located in the 600 Area approximately half way between 200 East and West areas, south of Route 11A and north of Route 4S.

Process Description: During Hanford construction the central shops were established as a staging area, repair shops, and specialized fabrications area. It was a central location for construction being conducted at 200 East, 200 West, 100-B, 100-D, and 100-F Areas. It included materials storage areas for construction materials and fuel storage. All facilities in the central shops area were considered temporary construction facilities and were identified as TC-29 Buildings. The sanitary sewer system consisted of a gravity feed septic tank system open trench and open settling ponds.

There were three fuel storage areas: One was associated with a gas station, and had kerosene as well as diesel and gasoline in 3,000-gallon storage tanks (also "white" in a 2,000 gallon tank). The second was a fuel storage yard, with six 25,000 gallon tanks and two 12,000 gallon tanks; the drawings show this as both "Gasoline storage area" on one side and "Fuel Oil storage" on the other. The third is one 100,000-gallon storage tank that was connected to a Boiler, which was likely the heat source for the area buildings.

Waste Type: Sanitary Sewage

Waste Description: The site contained a sanitary sewer system consisting of a tank(s), open trench, and settling ponds.

Waste Type: Demolition and Inert Waste

Waste Description: The site contains miscellaneous demolition debris and several foundations can be seen. There is also evidence of burning.

Code: UPR-200-E-11

Classification: Accepted

Names: UPR-200-E-11; Railroad Track Contamination Spread; UN-200-E-11

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have been covered with dirt and posted with Underground Radioactive Material signs.

Location: The unplanned release effected the railroad track extending from the PUREX tunnel to the 218-E-5 Burial Ground.

Release Description: In 1957, fission product contamination spots dripped along the railroad track extending from Plutonium Uranium Extraction (PUREX) to the 218-E-5 Burial Ground. Contaminated tracks sections included the track from the PUREX tunnel entrance to the west exclusion area fence, the spur into the 218-E-5 Burial Ground, and the "TC" spur. Specific release details are unknown.

Process Description: Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the solid waste burial ground.

Related Sites/Structures: The site is associated with UPR-200-E-11, UPR-200-E-88, UPR-200-E-95, 200-E-43 and 200-E-44.

Waste Type: Water

Waste Description: The release consisted of fission products dripping from a railroad car transporting material from PUREX to the burial ground.

Code: UPR-200-E-83

Classification: Accepted

Names: UPR-200-E-83; Zone A, Zone B, Zone C; BC Controlled Area; BC Cribs Controlled Area; UN-200-E-83; UN-216-E-11

Reclassification: None

Type: Contamination Migration

Start Date: 1/1/1958

Status: Inactive

End Date:

Description: Periodic radiological surveys conducted between 1958 and 1998 have identified radiological contamination outside the boundaries of the engineered crib and trench structures. Each survey effort redefined the soil contamination boundaries. The size and shape of the posted area varied with each survey. Radiological surveys (1996-1998) identified contamination extending south from Route 4 South to Army Loop Road and extending east to the Central Landfill area. For remediation purposes, the BC Controlled Area has been divided into two subsites; the Northern Area, that includes cleanup areas A and B, and the Southern Area that includes cleanup area C.

Location: The site is located south of 200 East Area, adjacent to the BC Cribs and Trenches.

Release Description: The source of the large contaminated area known as the BC Controlled Area has been determined to be due to the BC Cribs and trenches. The cribs and trenches received large amounts of liquid radioactive process waste from the Uranium Recovery project (1952 to 1956). In 1958, radioactive rabbit and coyote feces were found scattered over the ground surface. A radiation survey (#DS 01266 - May 7, 1958) states the maximum reading on rate on the crib vent was 200 millirad per hour with 40,000 counts per minute smearable contamination. The overground transfer line in 1958 was reading 250 millirem per hour at a distance of 5.1 centimeters (2 inches). The ground under the overground line was reading 10,000 counts per minute. Rabbit droppings found in 1958 were contaminated to levels from 2,000 counts per minute to 100,000 counts per minute. In one area, 80% of the rabbit droppings were contaminated from 5,000 to 100,000 counts per minute. It was determined that a badger or some other animal had burrowed into the 216-B-28 Trench and exposed a

radioactive salt layer. Over time, rabbits ingested the contaminated salts and defecated over approximately 10 square kilometers (4 square miles) of undisturbed sagebrush covered land. The burrow was filled with asphalt in 1964. The asphalted area was visible and documented on a 1981 radiation survey (#T81-0930, July 1, 1981). In 1973, Battelle Northwest Laboratories collected data regarding the distribution and contamination levels of animal droppings in the BC Crib and Trench area. Their study attempted to correlate the data to animal behavior patterns, soil characteristics, vegetation, prevailing winds and other environmental influences. From a designated center point, field personnel walked a total of 29 radii. Radiological and biological data was collected at intervals equaling 20 human steps. (approximately 16 meter [52 feet] intervals). Most of the contamination was found south, southeast and southwest of the BC Cribs. The data collected to determine the contamination distribution was recorded in the report (BNWL-1794), but no conclusions were made. A series of radiological surveys done in 1978 showed the contamination had moved onto the roadways in the area. Contamination levels ranged from 300 counts per minute to greater than 100,000 counts per minute. A 1981 radiation survey identified nine highly contaminated areas. Several areas of highly contaminated soil were noted as well as contaminated tumbleweeds, tumbleweed roots and tumbleweed fragments. General contamination levels ranged from 200 to 100,000 counts per minute and areas of 50 to 150 millrem per hour. Other possible sources of contamination include the US Ecology disposal facility and PUREX operations. In October 1960 a significant contamination spread occurred at PUREX. A sketch attached to Radiation Occurrence Report 60-3 shows a large contamination spread from the 241-A-151 Diversion Box spread across Route 4S. The 241-A-151 Diversion Box is located on the south side of the PUREX plant (202-A). Sparsely spaced particles (less than 5 per 9.3 square meters [100 square feet]) are shown in the BC Crib and Trench Area (see UPR-200-E-26). In 1969, the BC Trenches were graded and covered with sand and gravel. In 1973, a Battelle Northwest Laboratory study attempted to define the distribution of the contaminated rabbit feces. A 1981 radiological survey identified a large amount of surface contamination, contaminated tumbleweeds and contaminated tumbleweed fragments on the BC Cribs and Trenches.

Waste Type: Soil

Waste Description: The contamination spread consists of radioactive feces (and urine) from coyotes and rabbits. Strontium-90 (81 curies) and cesium-137 (14 curies) are the major contaminants in the feces. Specks of contamination found in the soil may be wind blown particulates from filling the open trenches with waste (1952-1958) and major contamination events in 200 East Area. In 1999, the cryptogamic layer and underlying soils were analyzed for a selected number of radionuclides based on the contaminant of concern list. Analysis included plutonium-239, americium-241, cesium-37 and strontium-90.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-63

Names: UPR-200-E-63; Radioactively Contaminated Tumbleweeds; UN-200-E-63; UN-216-E-63

This Site has the Following SubSites:

Code: UPR-200-E-83:1

Names: UPR-200-E-83:1; Zone A and Zone B; Northern Area; Northern Portion of BC Controlled Area

Code: UPR-200-E-83:2

Names: UPR-200-E-83:2; Zone C; Southern Area; Southern portion of UPR-200-E-83

Code: UPR-200-E-83:1 **Classification:** Accepted

Names: UPR-200-E-83:1; Zone A and Zone B; Northern Area; Northern Portion of BC Controlled Area **Reclassification:** None

Type: Contamination Migration **Start Date:**

Status: Inactive**End Date:**

Description: The northern portion of the UPR-200-E-83 waste site includes the soil remediation area known as Zone A and Zone B. Zone A is approximately 140 acres of densely contaminated soil, south of the BC trenches. Zone B is the remaining (approximately 3600 acres) of spotty contaminated soil. During 2009 through 2011, a remediation activity removed approximately 140 acres of contaminated soil from Zones A and B. Zone A and isolated area within Zone B were downposted in August 2011 (per DOE/RL-2011-101)
A low level high resolution aerial survey was conducted of the site in September 2009, resulting in approximately 1566 acres of Zone B being downposted over time, through September 2010.

The SubSite is Part Of:**Code:** UPR-200-E-83**Names:** UPR-200-E-83; Zone A, Zone B, Zone C; BC Controlled Area; BC Cribs Controlled Area; UN-200-E-83; UN-216-E-11

Code: UPR-200-E-83:2**Classification:** Accepted**Names:** UPR-200-E-83:2; Zone C; Southern Area;
Southern portion of UPR-200-E-83**Reclassification:** None**Type:** Contamination Migration**Start Date:****Status:** Inactive**End Date:**

Description: The southern portion of UPR-200-E-83 extends south of the boundary that separates the northern and southern areas to the Army loop road. The southern area includes the sand dunes and Zone C. Characterization of a number of small isolated spots of contamination in Zone C, identified by the 2009 aerial survey, have been investigated through field surveys.

The SubSite is Part Of:**Code:** UPR-200-E-83**Names:** UPR-200-E-83; Zone A, Zone B, Zone C; BC Controlled Area; BC Cribs Controlled Area; UN-200-E-83; UN-216-E-11

Code: UPR-200-W-8**Classification:** Accepted**Names:** UPR-200-W-8; 200-W-5; Old Burial/Burning Pit;
UN-200-W-8; U-Plant Burning Pit/Burial Ground**Reclassification:** None**Type:** Unplanned Release**Start Date:** 1/1/1950**Status:** Inactive**End Date:**

Description: The site is posted as an Underground Radioactive Material area.

Location: The site is located in the old burning ground, east of the 221-U Building, adjacent to the corner of Beloit and 16th Street.

Release Description: Contamination was discovered in the spring of 1950 in the Old Burning Ground, located east of the U-Plant Facility. An area of approximately 13.9 square meters (150 square feet) was observed to be contaminated, with a maximum dose rate of 45 rads/hour at 5 centimeters (2 inches). The area was covered with 3 meters (10 feet) of clean dirt.

Process Description: It was covered with 3 meters (10 feet) of soil and posted with Underground Contamination signs in 1950. An April 1966 aerial photograph shows the outline of a large polygon shaped area east of U-Plant. Drawing H-2-44510 identifies this area as "Burial Ground". It measures approximately 130 by 30 meters (425 by 100 feet). The area was removed from radiation zone status in August 1972, but was re-posted as an "Underground Radioactive Material" Area in

1992.

Related Sites/ This site is associated with 200-W-71.

Structures:

Waste Type: Misc. Trash and Debris

Waste Fission products were discovered at the site with approximately 1 curie and a maximum dose

Description: rate of 45 rads/hour at the surface.

The Following Sites Were Consolidated With This Site:

Code: 200-W-5

Names: 200-W-5; Burial Ground/Burning Pit; U Plant Burning Pit; UPR-200-W-8

Code: UPR-200-W-58 **Classification:** Accepted

Names: UPR-200-W-58; Railroad Track Contamination; **Reclassification:** None
UN-200-W-58

Type: Unplanned Release **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The Unplanned Release is not separately marked or posted from other postings on the railroad track.

Location: In 1965 this release caused spotty contamination to spread along the railroad track from the T-Plant railroad cut to the 200 West Burial Ground.

Release Description: On April 26, 1965, a beta-gamma contamination spread occurred during the process of transporting 221-T Plant canyon cell blocks from the 221-T canyon and burying them in the 200 West Burial Ground. Two small spots approximately 15 centimeters (6 inches) in diameter with reading of 5 rads/hour were found on one end of the deck of flat car #19382. Railroad bed surfaces in the 221-T cut were found to have spotty contamination to a maximum of 100,000 counts per minute. The undercarriage of the locomotive used was contaminated generally to 20,000 counts per minute. A rigger and a train crew brakeman received contamination on their shoes and socks. The contamination spread from the underside of an improperly prepared cell block to the deck of the flat car. Further spread occurred when the radiation monitor failed to capture the train following detection of loss of radiological control in the 221-T cut.

Waste Type: Chemicals

Waste The release consisted of beta/gamma contamination with levels ranging from 100,000

Description: counts/minute to a maximum of 5 rads/hour.

Code: UPR-200-W-70 **Classification:** Accepted

Names: UPR-200-W-70; Contamination Found at the 200 **Reclassification:** None
West Burning Ground East of Beloit Ave.

Type: Unplanned Release **Start Date:** 1/1/1973

Status: Inactive **End Date:**

Description: The release site is not marked or posted. A mapping data point (dot) estimates the location, placing it adjacent to the northwest access road into the 200-W ADB (ash disposal basin). The area is currently covered with several feet of ash.

Location: The 200 West Burning Pit is located south of the 216-W-LWC Crib and east of Beloit Ave. It is located within the 200 West Ash Disposal Basin.

Release Description: On January 22, 1973, a quarterly routine survey of the 200 West Area Burning Pit revealed several spots of beta-gamma contamination measuring 5,000 to 50,000 counts per minute along the bumper rails at the edge of the combustible trench. Additional surveys disclosed other contamination measuring from 20,000 counts per minute to 30 millirads/hour in the trench proper and a one-gallon bucket contaminated in excess of 100,000 counts per minute (250 millirads/hour). Samples of the contamination were obtained for laboratory analysis. A dump area on the south side of the combustible trench, about 3.7 by 6.7 meters (12 by 22 feet), was found to contain alpha contamination with readings ranging from 5,000 to 200,000 disintegrations per minute. The cause of the contamination was the unauthorized disposal of contaminated material in a non contaminated burning trench.

Process Description: The burning pits routinely received non-radioactive debris (construction debris, wood, paper, solvents and paint) to be burned as a means of disposal. Radiological waste was not supposed to be placed in burning pits.

Related Sites/ Structures: The site is associated with the 200 West Burn Pit, and is within the 200-W ADB.

Waste Type: Ash

Waste Description: Beta/gamma contamination measuring 5,000 to 50,000 counts/minute was found along the bumper rails at the edge of the combustible trench. Other area of contamination ranging from 20,000 counts/minute to 30 millirads/hour beta/gamma was identified inside the combustible trench. An area on the south side of the combustible trench was found to have contamination ranging from 5,000 to 200,000 disintegrations/minute alpha. A sample from the trench (a chunk of rusty debris) showed americium-plutonium contamination.

Code: UPR-600-12 **Classification:** Accepted

Names: UPR-600-12; UN-600-12; UNH Spill to Route 4S **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: The waste site is two radiologically posted areas located on the south shoulder of Route 4S, near the top of the hill, southeast of 200 East Area. Both areas are posted as Underground Radioactive Material Areas/

Location: The release occurred on a portion of Route 4S, southeast of 200 East, in the 600 Area.

Release Description: On December 30, 1954 a tractor-trailer overturned on the 200 East Hill, spilling 6,060 liters (1,600 gallons) of uranium nitrate hexahydrate solution onto the road and shoulder. General contamination levels of 60 millirad/hour were found on the road and the shoulder. Part of the contamination was removed and the balance was washed off the road. A thin layer of blacktop was added to the road to cover the spill area. The shoulder contamination was covered with dirt. The contamination levels were reduced to a maximum of 20,000 counts per minute.

Waste Type: Chemicals

Waste Description: The waste consisted of uranium nitrate hexahydrate solution spilled to the road and the soil.

Description: The soil was found to have less than 10 nanocuries/gram of contamination, and a maximum dose rate at the surface of 60 millirads/hour.

Code: UPR-600-20 **Classification:** Accepted

Names: UPR-600-20; Old Cross Site Transfer Line Surface Contamination; UN-216-E-41 **Reclassification:** None

Type:	Contamination Migration	Start Date:	1/1/1988
Status:	Inactive	End Date:	1/1/1995
Description:	The 600-284-PL underground transfer line extends from the 241-UX-154 diversion box, adjacent to U Plant in 200 West Area, to the 241-ER-151 Diversion Box in 200 East Area. The Unplanned Release waste site includes the contaminated soil and vegetation located on the surface of the cross site transfer line and surrounding the 241-ER-151 Diversion Box. The surface of the underground line has been stabilized and is currently posted with "Underground Radioactive Materials" signs. There is also a large mound of soil, located south of the 241-EW-151 Vent Station, that is associated with the original transfer line surface stabilization activities. The soil mound is posted with Underground Radioactive Material signs.		
Location:	The site extends from the 241-ER-151 Diversion Box in 200 East Area and to the 241-UX-154 Diversion Box in 200 West Area. The majority of the transfer line is located in the 600 Area, between 200 East and West Areas, south of Route 3. The pipeline is approximately 2.3 miles long.		
Release Description:	The surface of the buried waste transfer line became contaminated through biological transport of radioactive materials that leaked in the pipeline encasement and windblown particulates from the vent station. In March 1988, while conducting a radiological survey of the 241-EW-151 Vent Station (located approximately mid way between 200 East and 200 West Areas on the transfer line) contamination was identified approximately 100 meters (300 feet) outside the established radiation zone boundaries of the vent station above the transfer line. The Mobile Surface Contamination Monitor (MSCM) tractor was used to survey the entire surface of the pipeline. Numerous spots of contamination were identified at various locations along the entire length of the transfer line. Contamination levels ranged from a few hundred counts per minute to 750 millirem per hour. To characterize the integrity of the pipeline, eight boreholes were drilled with an auger at four locations along the transfer line. Although no contamination was found to have leaked below the pipeline encasement, contamination was found in sagebrush growing next to the encasement. This indicated that the roots of the sagebrush had penetrated the encasement. The contamination was given an Unplanned Release number in 1989.		
Process Description:	The original cross site transfer line was originally constructed in 1952 to support the Uranium Metal Recovery operations. Various process and tank farm waste has been transported between 200 East and 200 West areas through this concrete encased, underground pipeline. The original cross site transfer line (sitecode 600-284-PL) consists of six stainless steel pipelines (V360, V361, V362, V363, V364, V366) inside a concrete encasement. The encasement type is known as 6-59, indicating there are six lines inside a 59 inch wide encasement. The concrete encased stainless steel pipelines are buried at depths that range from 1.5 to 4.5 meters (5 to 15 feet). There are 58 encasement test risers (swab risers) spaced regularly along the pipeline that provided access to the encasement void space. The old original cross site line was replaced with a new pipeline in 1995 (see 600-269).		
Related Sites/ Structures:	UPR-600-20 is associated with the 600-284-PL pipeline, the 241-ER-151 Diversion Box (east end of the pipeline), the 241-EW-151 Vent Station (along middle of pipeline), and the 241-UX-154 Diversion Box (west end of the pipeline). Also see 600-296, Replacement Cross Site Transfer Pipeline.		
Waste Type:	Process Effluent		
Waste Description:	The surface of the buried waste transfer line became contaminated through biological transport of radioactive materials that leaked in the pipeline encasement and windblown particulates from the vent station. The contaminated soil contained cesium-137, plutonium-239/240, strontium-90, and uranium from tank farm waste transferred between 200 East Area and 200 West Area through the underground line.		

200-PW-1

Code: 216-Z-1&2 **Classification:** Accepted

Names: 216-Z-1&2; 216-Z-7; 234-5 No. 1 Crib; 234-5 No. 2 Crib; 216-Z-1 & 2TF; 216-Z-1 and 216-Z-2 Cribs **Reclassification:** None

Type: Crib **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1969

Description: The 216-Z-1&2 Cribs consist of two wooden timber boxes connected by a central pipe. The 216-Z-2 crib overflowed into the 216-Z-1 crib which overflowed into the 216-Z-1A tile field. Each unit is set and backfilled in a deep, square excavation. Two risers are visible from the surface of each crib.

Location: The 216-Z-1 and 2 cribs are located south of 234-5Z (Z Plant) facility and west of the 216-Z-3 Crib. They are inside the 216-Z-1A fenced area.

Process Description: These cribs were designed to dispose of aqueous and organic wastes in the soil column. The unit received waste from the 234-5Z, the 236-Z, and the 242-Z Buildings.

Related Sites/Structures: The cribs are associated with 234-5Z the transfer piping, local monitoring wells, the 241-Z-361 Settling Tank, the 216-Z-3 Crib and the 216-Z-1A Tile Field. The pipeline that fed the cribs is 200-W-210-PL.

Waste Type: Process Effluent

Waste Description: The 216-Z-1 and 2 Cribs received liquid process waste from the 234-5Z Building. The cribs received aqueous and organic wastes from the Plutonium Reclamation Facility, Americium Recovery Line wastes from the 236-Z and 242-Z Buildings, and uranium wastes from the 236-Z Building.

Code: 216-Z-1A **Classification:** Accepted

Names: 216-Z-1A; 216-Z-1A Tile Field; 216-Z-1AA; 216-Z-1AB; 216-Z-1AC; 216-Z-7; 234-5 Tile Field **Reclassification:** None

Type: Drain/Tile Field **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1969

Description: The tile field is located inside a chain link fence. It is a below grade trunk line orientated north to south with seven pairs of lateral pipes spaced in a herring bone pattern. The vitrified clay pipe lies on a gravel bed. The length of the tile field was expanded twice. The original section is known as 216-Z-1AA. The expanded sections are known as 216-Z-1AB, and 216-Z-1AC. The excavation was backfilled to grade. The fence is radiologically posted.

Location: The unit lies south of the 234-5Z facility perimeter fence and immediately south of the 216-Z-1&2 Cribs.

Process Description: The site received waste from the Z Plant 234-5Z, 236-Z and 242-Z facility operations. The tile field was originally constructed to receive liquid waste overflow from the 216-Z-1 and the 216-Z-2 Cribs. Later the cribs were bypassed and the waste was routed directly into the tile field.

Related Sites/Structures: The tile field is associated with the 216-Z-1&2 Cribs, the 216-Z-3 Crib, 241-Z-361 settling Tank and associated underground transfer lines. The replacement (2inch) stainless steel lines are documented in sitecode 200-W-174-PL.

Waste Type: Process Effluent
Waste Description: The 216-Z-1A Tile Field originally received overflow from the 216-Z-1 and the 216-Z-2 Cribs. The cribs received aqueous and organic wastes from the Plutonium Reclamation Facility, americium recovery line wastes from the 236-Z and the 242-Z Buildings, and uranium wastes from the 236-Z Building.

Code: 216-Z-3 **Classification:** Accepted

Names: 216-Z-3; 216-Z-3 Culvert; 216-Z-8; 234-5 No. 3 & 4 Cribs **Reclassification:** None

Type: Crib **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1959

Description: The crib is posted with identification signs. It is inside the locked and posted chain link fence surrounding the 216-Z-1A tile field. The 216-Z-3 Crib was constructed of three 1.2 meter (4 foot) long, perforated corrugated metal culverts that were laid horizontally, end to end, on a gravel filled excavation. Wire screens were welded on the ends of the pipes to prevent gravel from intruding into the pipe. 2.5 centimeter (1 inch) holes were drilled every 15 centimeters (6 inches) around the circumference of the pipe at 30 centimeter (1 foot) intervals. The culvert rests on a 5 meter (17 foot) bed of gravel, 2.4 meters (8 feet) below grade. Two layers of asphalt roofing paper were laid over the crib construction and the site was backfilled to grade.

Location: This crib is located south of the 234-5Z Building, and east of the 216-Z-1 and -2 Cribs. It is located inside the chain link fence that surrounds the 216-Z-1A Tile Field.

Process Description: The 216-Z-3 Crib received Plutonium Finishing Plant process liquid waste from 1952 to 1959. Waste from the Plutonium Finishing Plant and laboratory waste streams were routed through the 241-Z-361 Settling Tank, and then distributed to the 216-Z-3 Crib. Overflow from the crib went to the 216-Z-1A tile field.

Related Sites/Structures: Structures associated with this crib include the 241-Z-361 Settling Tank, 216-Z-1A tile field, the chemical sewer line from the 234-5Z, and vent risers. The pipeline that fed the cribs is 200-W-210-PL.

Waste Type: Process Effluent
Waste Description: The site received process waste, analytical and development laboratory wastes from the 234-5Z Building via the 241-Z Settling Tank. The waste was neutral to basic.

Code: 216-Z-9 **Classification:** Accepted

Names: 216-Z-9; 216-Z-9 Cavern; 216-Z-9 Covered Trench; 216-Z-9 Crib and Support Structures; 216-Z-9A; 216-Z-9B; 216-Z-9C; 234-5 Recuplex Cavern **Reclassification:** None

Type: Trench **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1962

Description: The 216-Z-9 trench is marked and posted with Underground Radioactive Material signs. In 1999, a gravel bio-barrier, measuring 6.1 meter (20 feet) by 4 meters (13 feet), was placed over an area of surface contamination. This area is also posted as Underground Radioactive Material. The 216-Z-9 Crib is an inactive, below grade waste management unit. It is a rectangular structure, with a concrete cover supported by six concrete columns with a concrete cover. The trench walls and support columns are covered in an acid resistant brick. Two stainless steel pipes discharge effluent above the trench bottom. Three above grade structures

(216-Z-9A, 216-Z-9B and 216-Z-9C) were constructed to support the crib soil mining operations.

Location:	The trench is located south of Nineteenth Street and east of the 234-5Z Building.
Release Description:	On November 16, 2010, the 299-W15-47 extraction well head failed, causing more than 95 liters (25 gallons) of groundwater to spill onto the ground. The ground water contained minor amounts of carbon tetrachloride, nitrates, technetium-99, chromium and tritium. The pump and treat process was halted and the area was assessed. The well is located northeast of 216-Z-9 crib.
Process Description:	216-Z-9 is an enclosed trench that received solvent and aqueous wastes from the Z Plant RECUPLEX process. The 216-Z-9 trench was the only waste site used for solvent disposal during the RECUPLEX operation. Solvents used in the process included carbon tetrachloride, dibutyl phosphate and dibutyl butyl phosphonate (DBBP). In 1976 and 1977 the trench floor was mined for plutonium using remotely operated equipment. Three above grade structures (216-Z-9A, 216-Z-9B and 216-Z-9C) were constructed to support the crib soil mining operations. 216-Z-9A received the excavated crib sediments into a glove box via a conveyor system. The sediments were packaged into 10 liter cans, assayed and removed from the glove box. The cans were placed into overpack drums for storage and transportation. 216-Z-9B contained the observation area (with a leaded glass window into the crib interior) and controls for conducting the remote sediment removal. 216-Z-9C contained the mechanical components of the sediment removal equipment. This structure was sealed at the interface of the cribs concrete slab roof. Removal equipment was suspended from two openings in the crib roof, allowing access to the crib from both the north and the south areas of the crib.
Related Sites/ Structures:	The site is associated with the Z Plant RECUPLEX process, the steel waste transfer lines, and the soil mining facility (216Z9A). A stormwater pond occurred near this crib in the 1960's. See sitecode 200-W-124. The pipeline that fed this crib is sitecode 200-W-206-PL.
Waste Type:	Process Effluent
Waste Description:	The trench received aqueous process waste, and organic process waste. The aqueous process waste is characterized as an acidic, high salt, low level radioactive waste, and the organic process is considered slightly acidic, low salt, high organic, radioactive liquid waste with intermediate levels of plutonium and other transuranic components. Fabrication oil used as a cutting and milling lubricant was estimated to be 50% carbon tetrachloride and 50% lard oil. The site received an estimated 270,000 to 460,000 liters of carbon tetrachloride as waste.

Code:	216-Z-12	Classification:	Accepted
Names:	216-Z-12; 241-Z-12 Crib	Reclassification:	None
Type:	Crib	Start Date:	1/1/1959
Status:	Inactive	End Date:	1/1/1973
Description:	The site is an inactive, below-grade waste management unit. The site consists of a deep rectangular excavation with a vitrified, perforated, clay pipe running the length of the crib. A second six inch diameter steel pipe (bypass pipeline) was installed in 1968 and runs the length of the crib to the west of the original pipe. The bottom 1.5 meters (5 feet) of the excavation was backfilled with gravel and covered with a polyethylene barrier. The remaining excavation was backfilled to grade. It is marked and posted with Underground Radioactive Material signs.		
Location:	This unit is located southwest of the 234-5Z Building, outside the security fence.		
Process Description:	The crib received Plutonium Finishing Plant liquid process waste and laboratory waste from the 234-5Z Building, via the 241-Z-361 Settling Tank.		

Related Sites/ Structures: Structures associated with this crib include 10 monitoring wells, diversion boxes No.1 and No.2 (200-W-58 and 200-W-59), transfer lines, and monitoring instrumentation. The pipeline that fed the crib is 200-W-208-PL.

Waste Type: Process Effluent

Waste Description: The site received process waste and analytical and development laboratory waste from the 234-5Z Building via the 241-Z-361 Settling Tank. The waste is slightly acidic. Low salt waste was adjusted to a pH of 8 to 10 before disposal. The waste disposed of at the crib included plutonium.

Code: 216-Z-18 **Classification:** Accepted

Names: 216-Z-18; 216-Z-18 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1969

Status: Inactive **End Date:** 1/1/1973

Description: The 216-Z-18 Crib is a below grade inactive management unit. The crib consists of five parallel, north-south running trenches bisected by a steel distribution pipe. Near the center of each trench two perforated, fiberglass reinforced epoxy pipes exit each side of the distribution line. The distribution and trench piping lie on a 0.3-meter (1-foot) thick bed of gravel. The pipes were buried under an additional 0.3 meters (1 foot) of gravel, a membrane, and sand cover. The trenches were then backfilled to grade. The site is marked and posted with Underground Radioactive Material signs.

Location: This unit is southwest of the 216-Z-1A Tile Field and south of the 234-5Z Building.

Process Description: This unit received wastes via the 241-Z-361 Settling Tank. The crib disposed of solvent and acidic aqueous waste from the Plutonium Reclamation Facility in the 236-Z Building.

Related Sites/ Structures: The crib is associated with 241-Z-361 and UPR-200-W-103. The pipeline to the crib is 200-W-174-PL.

Waste Type: Process Effluent

Waste Description: The crib received solvent and acidic aqueous waste from the Plutonium Reclamation Facility in the 236-Z Building. The crib received high salt, acidic, and organic liquid waste. Wastes disposed of at the site include carbon tetrachloride, tributyl phosphate, and plutonium.

Code: 241-Z-361 **Classification:** Accepted

Names: 241-Z-361; 241-Z-361 Settling Tank; IMUST; Inactive Miscellaneous Underground Storage Tank **Reclassification:** None

Type: Settling Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1976

Description: The unit is an underground reinforced concrete structure with a 0.95 centimeter (3/8 inch) steel liner. The tank has inside dimensions of 7.9 by 4.0 meters (26 by 13 feet) with 0.3 meter (1 foot) thick walls. The bottom slopes, resulting in an internal height variation between 5.2 and 5.5 meters (17 and 18 feet). The top is 0.6 meters (2 feet) below grade. A 15 centimeter (6 inch) stainless steel inlet pipe from the 241-Z Tank Pit (WIDS SiteCode 241-Z) enters the tank from the north. A single 20 centimeter (8 inch) stainless steel pipe exits the tanks from the south. There are two manhole covers and frames and several risers visible above grade.

Location: The tank is located south of the 236-Z building, inside the Z Plant security fence.

Process The tank served as a settling tank for liquid waste from the 234-5Z, 242-Z and 236-Z buildings.
Description: The waste streams were routed through the 241-Z sump tanks for neutralization and then to the 241-Z-361 tank to settle out any solids. After passing through the settling tank, the waste was routed to 216-Z-1, 216-Z-2, 216-Z-3, 216-Z-1A, 216-Z-12 and 216-Z-18.

**Related Sites/
Structures:** The site is related to 216-Z-1, 216-Z-2, 216-Z-3, 216-Z-12, 216-Z-1A, 216-Z-18 and the 241-Z tank farm.

Waste Type: Process Effluent

**Waste
Description:** The unit received radioactively contaminated liquid. The tank is estimated to contain a residual 30 to 75 kilograms (66 to 165 pounds) plutonium in the sludge. (See HNF-8735 for detailed sludge sample analysis)

200-PW-3

Code:	216-A-7	Classification:	Accepted
Names:	216-A-7; 216-A-7 Cavern	Reclassification:	None
Type:	Crib	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/1966
Description:	The crib is marked and posted with Underground Radioactive Material (URM) signs. Both the 216-A-7 and 216-A-1 cribs are inside this URM area.		
Location:	The site is located inside of the 200 East Area perimeter fence, east of 241-A Tank Farm and east of Canton Avenue.		
Process Description:	The crib began receiving catch tank and sump waste from the 241-A-152 Diversion Box in January 1956. The effluent pipeline between the 241-A-152 Diversion Box sump and the crib was blanked off in July 1959. The sump waste was rerouted to the catch tank. From July 1959 through November 1966, the crib received TBP-Soltrol from PUREX and pump pit/catch tank drainage from the 241-A-152 Diversion Box. A 15 centimeter (6 inch) perforated vitrified clay pipe is placed horizontally 3.0 meters (10 feet) below grade. A 3.0 meters (10 feet) length of 15 centimeter (6 inch) perforated vitrified clay pipe is perpendicular to the first pipe, forming a cross pattern. It is 4.9 meters (16 feet) deep and is filled with approximately 2.1 meters (7 feet) of coarse rock with a volume of 99 cubic meters (3,500 cubic feet). The site has been backfilled. The side slope from the surface to 3.0 meters (10 feet) is 1:1 and from 3.0 meters (10 feet) to the bottom, 2:1.		
Related Sites/Structures:	The site is associated with PUREX, the 241-A-152 Diversion Box and the 241-A-302B catch tank. The pipeline associated with this crib is Sitecode 200-E-182-PL.		
Waste Type:	Process Effluent		
Waste Description:	From January 1956 through July 1959, the site received the catch tank overflow waste, the sump waste, and the pump pit drainage from the 241-A-152 Diversion Box. From July 1959 to November 1966, the site received the catch tank overflow waste and the pump pit drainage from the 241-A-152 Diversion Box. In November 1966, the site received the tri-butyl phosphate soltrol organic inventory from the 202-A Building. The waste is low in salt and is neutral to basic.		

Code:	216-A-8	Classification:	Accepted
Names:	216-A-8; 216-A-8 Crib and Overflow Pond	Reclassification:	None
Type:	Crib	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1991
Description:	The crib and overflow area are surrounded by chain and concrete AC-540 markers. They are posted with Underground Radioactive Material signs. Crib overflow was accomplished through a 40.6 centimeter (16 inch) diameter pipe exiting to the north at the east end of the crib (see H-2-56157). The pipe emptied into a narrow ditch that flowed northward. A small overflow pond was excavated at the northeast end of the ditch to receive the excess waste water from the crib. A 61 centimeter (24 inch) diameter, schedule 20, perforated distribution pipe is located 2.1 meters (7 feet) below grade along the length of the crib. The site contains approximately 5830 cubic meters (206,000 cubic feet) of gravel fill. The crib excavation side slope is 1:2. Four test risers extended above grade. A 20 centimeter (8 inch) diameter vent riser extended from the distribution pipe had been located at the west end of the crib. The vent riser was removed in 1995. Two layers of sisalkraft paper separate the gravel fill from the backfill. The		

216-A-508 control structure is located west of the crib (See drawing H-2-56157).

Location: The crib is located east of the 200 East Area perimeter fence, east of the 241-A Tank Farm.

Process Description: The crib was originally constructed in 1955 to receive condensate and cooling water discharge from the 241-A and 241-AX tank farms. In May 1958, it was determined that the crib had reached its radionuclide capacity. The effluent was routed to the 216-A-24 crib via the 216-A-508 control structure. The cooling water was routed to the 216-A-25 pond. However, the 216-A-8 crib was intermittently reactivated over the years (from 1966 until 1983) to receive additional tank farm condensate effluent.

Related Sites/ Structures: The site is associated with the 241-A, 241-AX, 241-AY, 241-AZ Tank Farms, the 200-E-164-PL pipeline, the 216-A-8 Control Structure (WIDS sitecode 200-E-285) and the 216-A-508 Control Structure.

Waste Type: Process Effluent

Waste Description: From 11/55 to 12/57, the site received condensate from the waste storage tanks in the 241-A and -AX farms. From 12/57 to 5/58, the site received the above effluents and cooling water from the contact condenser in the 241-A-431 Building. The site was inactive except for the following periods: 1/66-4/76, received condensate from 241-A and -AX farms; 1/78-4/78, received 241-A, -AX, & -AY farm condensate; 10/83, received 241-AY and -AZ farm condensate; 3/84, same as 10/83. In early 1985, flow was again diverted from the crib to double-shell tanks.

Document RPP-7494 reports a total discharge of 1.18E+09 liters differing slightly from the WIDS total. Condensate has not been discharged to the crib since early 1985. The distribution box was filled with concrete in 1995 to permanently isolate the crib.

Code: 216-A-24	Classification: Accepted
Names: 216-A-24; 216-A-24 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1958
Status: Inactive	End Date: 1/1/1966

Description: The site is surrounded with concrete AC-540 markers and posted with Underground Radioactive Material signs. The crib was built with four sections, each 107 meters (350 feet) long, separated by soil berms. The sections were installed at increasingly lower elevations, to allow the effluent to cascade from one section to the next. The crib was constructed with a 38 centimeter (15 inch) diameter (perforated bottom half), galvanized, corrugated pipe, placed horizontally 3 meters (10 feet) below grade. The crib excavation has 4100 cubic meters (1.46E+03 cubic feet) of gravel fill. There is 46,200 square feet of polyethylene barrier laid between the gravel and the soil backfill. The side slope is 1.5:1. Eight 20 centimeter (8 inch) diameter wells on concrete pads are located on this crib. The wells extend from the bottom of the crib to 0.9 meters (3 feet) above grade. Four 38 centimeter (15 inch) corrugated risers extend from the distributor pipe to grade with filter box assemblies on top of the risers.

Location: The crib is located east of the 200 East Area perimeter fence, and north of the 216-A-8 Crib.

Release Description: The crib was believed to have been valved out in January 1966. However, it was found to still be receiving liquid in 1979. In June 1979, it was reported that moisture was being encountered in an excavation north of the crib, where dirt was being taken for the construction of the 241-AN Tank Farm. Follow-up surveys found a maximum of 8000 counts per minute in the moist soil (JA Jones Occurrence Report 79-19). In October 1979, seepage was again encountered on the north side of the 216-A-24 Crib (Occurrence Report 79-113). An investigation revealed that the source of the liquid was from the 216-A-508 Control Structure, located at the 216-A-8 Crib. The valve in the control structure was found to be in an open position, allowing an

unknown amount of effluent to flow to the 216-A-24 Crib. The 216-A-24 Crib had been classified as inactive since January 1966. The fact that the open valve allowed effluent to flow to the 216-A-24 Crib for thirteen years warranted the situation to be classified as an Occurrence. The 216-A-508 Diverter Box was permanently isolated with concrete in 1995.

Process Description: The crib was built to receive condensate waste from the 241-A, 241-AX, 241-AY and 241-AZ tank farms. The installation of surface condensers greatly reduced the volume of liquid being discharged to the cribs.

Related Sites/ Structures: The crib is associated with the 216-A-524 Diversion Box (control structure), located at the west end of the 216-A-24 Crib. The crib is also associated with the 216-A-508 Diversion Box (control structure), located west of the nearby 216-A-8 Crib. The pipeline between the two control structures is sitecode 200-E-165-PL. The Control Structures controlled whether the effluent flow was diverted to the 216-A-8 or the 216-A-24 Crib. This site is also associated with the PUREX process, the 241-A tank farms and UPR-200-E-56.

Waste Type: Process Effluent

Waste Description: The site received condensed vapors from the waste storage tanks in the 241-A and 241-AX Tank Farms via the 241-E-411 and 241-E-412 Contact Condensers from 1958 through the early 1960's and until 1966, via the 241-A-401 and A-417 Tank. This crib was constructed to receive the condensate after the 216-A-8 Crib reached its radionuclide capacity. The waste is low in salt, neutral to basic and has a record of organic content. The crib was believed to have been valved out in January 1966. However, it was found to still be receiving liquid in 1979 (Occurrence Report #79-113). The valve has since been closed. Because of this inadvertent use, the radionuclide exact inventory and waste volume are unknown for 1967 through 1979.

Document RPP-7494 reports a total discharge of 7.94E+08 liters differing slightly from the WIDS total.

Code: 216-A-31	Classification: Accepted
Names: 216-A-31; 216-A-31 Crib	Reclassification: None
Type: Crib	Start Date: 7/1/1964
Status: Inactive	End Date: 11/1/1966

Description: The crib is located inside a large Underground Radioactive Material area that has a WIDS sitecode of 200-E-103. The crib is marked with cement posts on four corners.

Location: The site is located approximately 152 meters (500 feet) south of the 202-A Building.

Release Description: Although no contamination was released, a dose rate incident report was written in August 1961. The report indicates that the 216-A-31 Crib tie-in was made on August 25, 1961. No final inspection of the welds was done at this time. On August 27, 1961, an attempt was made to jet solvent from the F-13 tank to the new crib. Some material was transferred, but it appeared that the line was plugged. The transfer effort resulted in radioactive material being trapped in an uncovered crib line. On August 28, 1961, two employees entered the crib excavation to inspect the welds. They were in the crib excavation for approximately 5 minutes. Later the inspectors were told that an attempt had been made over the week-end to use the new crib. Radiological surveys were made to clarify what the dose rate conditions were in the crib excavation. On August 29, 1961, the exposed crib line was reading a maximum of 500 R/hr. This condition resulted in an exposure of 2 R/hr for the two weld inspectors.

Process Description: The crib received effluent from 202-A "L-Cell" via the 241-A-151 Diversion Box. L-Cell was the location of the final plutonium concentration step in the PUREX process. The site was

deactivated in 1966 by blanking the L Cell nozzles to the 241-A-151 Diversion Box, which routed effluents to the unit. The unit consists of a 21 by 3.1 by 7.3 meters (70 by 10 by 24 feet) deep excavation that includes a 7.6-centimeter (3-inch) schedule 10 stainless steel perforated distribution pipe placed horizontally 6.4 meters (21 feet) below grade. The excavation has 1.8 meters (6 feet) of gravel fill and has been backfilled. The side slope is 1:1.5.

Related Sites/ Structures: The crib is associated with 202-A (L cell) and the 241-A-151 Diversion Box. The pipelines associated with this crib are sitecodes 200-E-183-PL and 200-E-186-PL.

Waste Type: Process Effluent

Waste Description: The site received organic waste from 202-A Building (L Cell - Pu concentration waste). The waste was low in salt and is neutral to basic. Most documents state that 10,000 liters (3000 gallons) of organics were discharged to the unit since startup. However, ARH-231 states that a total of 30,545 liters (8070 gallons) were discharged to the crib from the date it was put into service (January 1963).

Code: UPR-200-E-56

Classification: Accepted

Names: UPR-200-E-56; 216-A-24 Crib Excavation; Excavated Contamination Adjacent to 216-A-24 Crib; UN-200-E-56; UN-216-E-33

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1979

Status: Inactive

End Date:

Description: The site is currently a surface stabilized area located north of the west end of the 216-A-24 Crib. It is posted and marked as an "Underground Radioactive Material" area.

Location: The site is located adjacent to the north side of the 216-A-24 Crib.

Release Description: On June 13, 1979, Radiation Monitoring was informed that moisture was noticed in the excavation east of the 200 East Area perimeter fence where fill dirt was being obtained for the construction of 241-AN Tank Farm. The construction contractor backfilling around the new tanks in 241-AN Tank Farm had mistakenly selected a borrow area adjacent to the 216-A-24 Crib instead of the designated area, which was further north. Radiological surveys revealed beta contamination up to 8,000 counts per minute in the moist excavation, on the earthmoving equipment, and in the newly hauled-in soil around the new 241-AN Tanks. The source of the contamination was determined to be moisture from the 216-A-24 Crib that had migrated laterally over the surface of a 10.2-centimeter (4-inch) crust of hardpan. The hardpan was approximately 4.6 meters (15 feet) below normal ground surface. The excavation was dug sloping from 1.5 to 6.1 meters (5 to 20 feet) deep, 131.1 meters (430 feet) long, and an average of 33.5 meters (110 feet) wide. The size of the excavation was approximately 0.4 hectare (1 acre).

Related Sites/ Structures: The site is associated with the 216-A-24 and 216-A-8 Cribs. UPR-200-E-91, UPR-200-E-92 and UPR-200-E-93, UPR-200-E-100 were also scraped and placed into this excavation.

Waste Type: Process Effluent

Waste Description: The contamination found in the moist excavation included beta/gamma readings up to 8,000 counts per minute. When the mistakenly excavated soil was returned to the excavation area from 241-AN Tank Farm, there was not sufficient volume to fill the hole. It was decided to place contaminated soil and vegetation from several areas along the perimeter and tank farm fences to help fill the void before covering with a layer of clean dirt. Additional contaminated soil from around the 244-A Lift Station was also disposed in this location in 1985.

feet) of 6.8-kilogram (15-pound) building paper over the gravel bed and beneath the top.

Waste Type: Process Effluent

Waste Description: The site received overflow from the Recuplex Silica Tank (neutral to basic Recuplex waste).

As of June 30 1978 the calculated radionuclide content included 48.4 grams (0.1 pounds) of plutonium. The adjacent well (#299-W15-202) shows a maximum of 4,400 picocuries/gram of plutonium-239 and 440 picocuries/gram of americium-241 near the bottom of the french drain structure.

Code: 216-Z-10

Classification: Accepted

Names: 216-Z-10; 216-Z-2; 231-W Reverse Well; 231-W-150; 231-W-151 Dry Well or Reverse Well; 231-Z Well; 299-W15-51

Reclassification: None

Type: Injection/Reverse Well

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1945

Description: This site is a reverse well that protruded approximately 0.31 meters (1 foot) above grade. The protruding end is capped with a flange. The well casing is constructed of steel pipe. The site was interim stabilized in 1990.

Location: The reverse well is east of the 231-Z Building and west of the 216-Z-17 Crib.

Process Description: The 216-Z-10 Reverse Well received process and laboratory waste from the 231-Z Building via the 231-Z-151 Sump between February and June 1945.

Related Sites/Structures: Structures associated with this reverse well include a manometer, three inlet lines, the 231-Z-151 Sump, and three monitoring wells (299-W15-59, 299-W15-60 and 299-W15-61). The pipeline from 231-W-151 vault to 216-Z-10 is sitecode 200-W-204-PL. The pipeline to 216-Z-5 (200-W-202-PL) includes an overflow line connected to the 216-Z-10 pipeline.

Waste Type: Process Effluent

Waste Description: The site received process and laboratory waste from the 231-Z Building, via the 231-W-151 Sump. The transuranic contaminated process waste was discharged at a rate of 76 liters (20 gallons) per minute. HW-28471 states that the small diameter well became plugged with sludge in June 1945. Approximately 988,000 liters (260,000 gallons) of liquid containing approximately 50 grams of plutonium was discharged to this unit.

Code: 241-Z-8

Classification: Accepted

Names: 241-Z-8; 241-Z-TK-8; IMUST; Inactive Miscellaneous Underground Storage Tank; Silica Slurry Tank; 216-Z-8

Reclassification: None

Type: Settling Tank

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1962

Description: The tank is a horizontal cylindrical vessel located 1.8 meters (6 feet) below grade. The area above the tank is surrounded by a light weight chain barricade marked "Caution Underground Radioactive Material" and IMUST signs. Inside the barricade on the north end are two capped 10 centimeters (4 inches) steel vent pipes.

Location: This unit is located in 200 West Area, due east of the 234-5Z building. It is south of 19th Street and west of Camden Ave.

Release Description: In July 1959, records indicated that the tank was at its overflow capacity, which is 58,430 liters

(15,435 gallons). The tank was deactivated in 1962, and no records were found that the tank had been pumped prior to that. Surveillance data from April 6, 1974, indicates a liquid content of 28,960 liters (7,650 gallons) and sludge content of 1,890 liters (500 gallons), for a total waste volume of 30,850 liters (8,150 gallons). This means that up to 27,580 liters (7,285 gallons) may have been lost between 1962 and 1974. This possible loss has not been accounted for and no records found explain the loss.

Process Description: The tank was used as a solids settling tank for back flushes of the Recuplex feed filters. Silica gel was used as a settling agent. The solids and silica gel were flushed to the 241-Z-8 tank with nitric acid. Overflow from the tank went to the 216-Z-8 French Drain, located approximately 11 meters (36 feet) east of the settling tank.

Related Sites/ Structures: The 216-Z-8 french drain received overflow from this unit. The pipeline to the tank is sitecode 200-W-205-PL.

Waste Type: Sludge

Waste Description: The tank was used as a solids settling tank for backflushes of the feed filter in the Recuplex. Silica gel was used as a settling agent on the dissolved solids. The solids and the silica gel were then flushed to this unit with nitric acid. In July 1959, records indicate the tank was filled to capacity 58,428 liters (15,435 gallons). No records were found to indicate the tank was pumped between 1959 and 1962. In 1974, a total waste volume of 30,850 liters (8,150 gallons) was reported. A total of 27,580 liters (7,285 gallons) has not been accounted for in historical records. The tank measures 2.4 meters (8 feet) diameter. by 12.2 meters (40 feet) length, constructed of 0.79 centimeters (5/16 inch) steel or wrought iron pate, buried horizontally about 1.8 meters (6 feet) below grade. There are two blanked inlet pipes on the west end and on overflow pipe on the east end of the tank, all three are 15 centimeters (6 inches) below tank top. In the east half of the top centerline of the tank, there are two 10 centimeters (4 inches) vent risers that extend above grade, a 0.3 meters (1 foot) diameter pump access opening, and a 0.6 meter (2 feet) diameter manhole; both bolted over.

200-SW-1

Code: 600 CL **Classification:** Accepted**Names:** 600 CL; 671 Facility; Central Landfill; Central Waste Landfill; CWL; Solid Waste Landfill; SWL; 600 Area Central Landfill **Reclassification:** None**Type:** Sanitary Landfill **Start Date:** 1/1/1973**Status:** Inactive **End Date:** 1/1/1996**Description:** The landfill is approximately 15.4 hectares (38 acres) consisting of 39 unlined solid waste trenches and 5 unlined liquid disposal trenches. All trenches have been backfilled. The landfill had been enclosed by a 2.4 meter (8 foot) tall fence with lockable gates. Only the southern portion of the fence still remains, due to the 2000 range fire. The Nonradioactive Dangerous Waste Landfill (NRDWL) is located adjacent to the Phase I trenches, on the north end of the landfill.**Location:** The landfill is located southeast of 200 East Area on Army Loop Road (south of Route 4S).**Related Sites/ Structures:** The Non-Radioactive Dangerous Waste Landfill (NRDWL) is located adjacent to the Central Landfill property. The two landfills are separated by a fence. NRDWL was isolated from the Central Landfill in 2001, when the NRDWL was completely enclosed by a chain-link fence with a separate lockable gate.**Waste Type:** Asbestos (friable)**Waste Description:** Prior to 1982, detailed log books were not maintained. It is estimated that Phase I received approximately 179,000 cubic meters, (234,000 cubic yards) and Phase II received approximately 417,000 cubic meters (546,000 cubic yards) of solid waste. Forty percent of the solid waste is assumed to be office waste consisting mostly of paper products. Construction and demolition debris consists mostly of wood and wooden pallets. Asbestos waste accounts for approximately 10% (by volume) of the inventory. Trenches 36, 37, 38 and 40 contain asbestos. Miscellaneous wastes include empty containers, medical waste from the first-aid stations and inert materials. Large bulky items such as appliances and office furniture were also placed in the solid waste trenches. An estimated 3,800,000 to 5,700,000 liters (1,000,000 to 1,500,000 gallons) of sewage and 380,000 liters (100,000 gallons) of 1100 Area catch basin wastes were placed in the liquid trenches. Spot checks of items in the landfill found occasional low level radioactive material on SWP (special work permit) clothing.

Code: 600 NRDWL **Classification:** Accepted**Names:** 600 NRDWL; Nonradioactive Dangerous Waste Landfill (Central Landfill); NRDW Landfill; NRDWL; 600 Area Nonradioactive Dangerous Waste Landfill **Reclassification:** None**Type:** Sanitary Landfill **Start Date:** 1/1/1975**Status:** Inactive **End Date:** 1/1/1988**Description:** This Nonradiological Dangerous Waste Landfill (NRDWL) consists of nineteen unlined trenches. The nineteen trenches are located adjacent to the Phase I trenches, on the north end of the Central Waste Landfill (CWL) (WIDS sitecode 600 CL). The Phase I trenches and the Phase II (CWL) trenches are separated by a wire fence. Both the CWL trenches and the NRDWL trenches have been backfilled and covered with 1.8 to 3 meters (6 to 10 feet) of soil.**Location:** This site is located on Army Loop Road, southwest of the intersection with Route 4 South and southeast of the 200 East Area.

Release Description:	wells 699-25-34A and 699-25-34B exceeded the critical mean value for specific conductance. A notification was reported to the DOE for transmittal to Ecology. The specific nonconductance is believed to be caused by nonhazardous constituents (sulfate, calcium, magnesium, and chloride) from the adjacent solid Waste Landfill.
Process Description:	This site provided disposal of dangerous waste generated from process operations, research and development laboratories, maintenance activities, and transportation functions throughout the Hanford Site. The permitted chemical trenches ceased to operate in 1985. One asbestos trench was active until 1988.
Related Sites/ Structures:	This site is adjacent to 600 CL, the Central Waste Landfill.
Waste Type:	Abandoned Chemicals
Waste Description:	This waste consisted of small quantity laboratory chemicals, bulk organic waste, solvent waste, battery acid, paints, paint thinners, waste oils and empty containers. Some small containers of liquid wastes were included. Trenches 2N, 20, 21, 22, 23, 25, 27,29 and 30 were used for disposal of asbestos waste from 1975 through 1988. Trenches 19N, 26, 28, 31, 33, and 34 were used for the above described chemicals.
Waste Type:	Asbestos (friable)
Waste Description:	The bulk of the waste asbestos material came from building demolition or renovation activities. This material was disposed of in Trenches 2N, 20, 21, 22, 23, 25, 27, 29, and 30. The asbestos waste was generally not containerized before disposal. It is probably a mix of friable and non-friable material.
Waste Type:	Misc. Trash and Debris
Waste Description:	This waste consisted largely of office and lunchroom waste and construction/demolition debris. Trench 1N received this waste.
Waste Type:	Sludge
Waste Description:	One instance occurred where Trench 34 received approximately 5,300 liters (1,400 gallons) of septic tank sludge.

200-SW-2

Code: 216-C-9 **Classification:** Accepted

Names: 216-C-9; 216-C-9 C Canyon Excavation **Reclassification:** None
Semiworks Swamp; 216-C-9 Pond; 216-C-9
Swamp; Former 221-C Canyon Excavation; Semi-
Works Swamp; 216-C-7 Swamp

Type: Pond **Start Date:** 6/1/1953

Status: Inactive **End Date:** 1/1/1985

Description: The entire site is currently backfilled and surface stabilized. It is posted as an Underground Radioactive Material area. The solid waste burial portion of the site is not separately marked or posted from the liquid waste portion of the site.

Location: The unit is located north of 7th Street and north of the Hot Semi Works Area.

Process Description: The 221-C facility excavation was divided into sections with dikes. Piping was arranged to provide three discharge points, one to each section.

Related Sites/Structures: Pipelines that fed the 216-C-9 Pond are sitecodes 200-E-254-PL, 200-E-255-PL, 200-E-256-PL, 200-E-257-PL, 200-E-258-PL and 200-E-259-PL.

Waste Type: Water

Waste Description: Until August 1960, the site received process cooling water from the 201-C Building; 201-C, 215-C, 271-C, and 276-C Building floor drains; and miscellaneous water from the 209-E Building and the Hot Semiworks facilities. From August 1960 to October 1969, the site received the same effluents as above plus miscellaneous wastewater from the 209-E Building. From October 1969 to December 1985, the site received miscellaneous wastewater from the Hot Semiworks facilities and the 209-E Building.

Code: 218-C-9 **Classification:** Accepted

Names: 218-C-9; 218-C-9 Burial Ground; 218EC9; Dry **Reclassification:** None
Waste No.0C9

Type: Burial Ground **Start Date:** 1/1/1985

Status: Inactive **End Date:** 1/1/1989

Description: The entire site has been backfilled and surface stabilized. It is posted as an Underground Radioactive Material area. The solid waste burial portion of this waste site is not separately marked or posted from the liquid waste portion of the site.

Location: The unit is located north of 7th Street and north of Hot Seimiworks Area.

Process Description: The original burial pit portion was located at the east end of the dried 216-C-9 Pond excavation. The excavated area was originally intended to be the foundation for the 221-C Canyon Facility that was never built. In 1953 the facility excavation began to be used for disposal of cooling water and steam condensate from the Hot Semiworks facilities and the 209-E building. It was known as 216-C-9. Liquid discharges ceased in 1983 and the pond area began to dry. The dried pond area was covered with a layer of washed gravel. In 1985, a decision was made to use the open excavation to dispose of solid waste material from the Hot Semiworks deactivation activities. The waste site number was change to 218-C-9 to designate the area as a solid waste disposal site. A review of waste inventory records contained in the Solid Waste Inventory and Tracking System (SWITS) database found that solid waste continued to be placed in the open excavation until September 1989. SWITS coordinates

indicate truck loads of soil were placed in the excavation west of the area originally defined as 218-C-9. In 2007, the size and shape of 218-C-9 was modified to match the information found in the SWITS database.

Waste Type: Demolition and Inert Waste

Waste Description: The waste consists of radiologically contaminated concrete rubble, large equipment (pulsers), roofing material, metal scrap and other demolition debris from the decommissioning of the 201-C and other Hot Semiworks facilities. Contaminated soil from adjacent areas located east and southeast of 201-C (known as UN-216-E-37 and UN-216-E-39) was also placed into the pit.

Waste Type: Chemicals

Waste Description: Asbestos has been disposed to this burial ground, but the report does not specify if it was friable or non-friable.

Code: 218-E-1

Classification: Accepted

Names: 218-E-1; 200 East Dry Waste No. 001

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1953

Description: The burial ground consists of fifteen 61 meter (200-foot) long trenches running north and south, ranging from 5 to 6 meters (16 to 20 feet) wide. The site has been backfilled and surface stabilized. It is surrounded with concrete marker posts and Underground Radioactive Material signs.

Location: The unit is located west of PUREX (202-A) and south of 4th Street.

Process Description: The site received solid waste from facilities in 200 East Area.

Waste Type: Misc. Trash and Debris

Waste Description: This unit received mixed fission product/transuranic dry waste, mostly from B Plant that began operations in 1945.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-53

Names: UPR-200-E-53; Contamination at 218-E-1; UN-200-E-53

Code: 218-E-2

Classification: Accepted

Names: 218-E-2; Equipment Burial Ground #2; 200 East Industrial Waste No. 002

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1953

Description: The site is a burial ground that consists of 9 industrial waste trenches. The area is posted with Underground Radioactive Material signs.

Location: The site is located north of B Plant and southeast of 241-BX Tank Farm. The site is co-located with Burial Grounds 218-E-5, 5A and 9.

Waste Type: Misc. Trash and Debris

Waste Description: This site received 0.0031 cubic meters (0.1 cubic feet) of mixed fission products/transuranic (MFP/TRU) dry wastes, which were backfilled over.

Code: 218-E-2A **Classification:** Accepted
Names: 218-E-2A; Burial Trench; Regulated Equipment Storage Site No. 02A **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1950
Description: The site contains a single east-west trench and was also used as an above-ground storage site for contaminated equipment. The trench is marked as an Underground Radioactive Material area.
Location: The site is located north of B Plant and south of 218-E-2. A railroad spur separates 218-E-2 from 218-E-2A.
Waste Type: Equipment
Waste Description: There are no burial records available for waste disposed of at this trench.

Code: 218-E-4 **Classification:** Accepted
Names: 218-E-4; Equipment Burial Ground #4; 200 East Minor Construction No. 4 **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1956
Description: It is marked and posted with "Underground Radioactive Material" signs.
Location: The site is located north of 221-B. It is an irregularly shaped polygon located between two railroad tracks.
Process Description: The site received repair and construction waste from the 221-B Building modifications. The number of trenches within this burial ground is unknown. The site was surface stabilized in 1980.
Waste Type: Construction Debris
Waste Description: This site received repair and construction wastes from the 221-B Building modifications.

Code: 218-E-5 **Classification:** Accepted
Names: 218-E-5; Equipment Burial Ground #5; 200 East Industrial Waste No. 05 **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1954
Status: Inactive **End Date:** 1/1/1956
Description: The site contains 2 trenches areas. One area is 104 meters (340.5 feet) long by 40 meters (131 feet) wide, containing multiple narrow trenches. The second area is a single trench 102 meters (334.5 feet) long by 19.5 meters (64 feet) wide. The trench is orientated in a north-south direction.
Location: The site is located north of B Plant and southeast of 241-BX Tank Farm, adjacent to 218-E-2 Burial Ground.
Waste Type: Equipment
Waste Description: The large area with multiple narrow trenches received industrial dry waste and small boxes.

Description: The north end of the long single trench contains railroad boxcars contaminated with uranyl nitrate hexahydrate (UNH).

Code: 218-E-5A **Classification:** Accepted

Names: 218-E-5A; Equipment Burial Ground #5A; 200 East Industrial Waste No. 005A **Reclassification:** None

Type: Burial Ground **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1959

Description: The 1980 Burial Ground Characterization Report indicates the site to be a single, large excavation measuring 30.5 by 36.6 meters (100 by 120 feet).

Location: The site is located north of B-Plant and southeast of 241-BX Tank Farm, adjacent to the 218-E-5 Burial Ground. The site is co-located with Burial Grounds 218-E-2, 5 and 9.

Waste Type: Equipment

Waste Description: The site received waste from PUREX L Cell, referred to as the 202-A Burial Package, in the form of 4 large boxes containing failed equipment and industrial wastes. One of the boxes was damaged during unloading. The contents were pushed into the trench. The D-2 Column from PUREX K Cell and a J-2 Pulse column were also buried in this site.

Code: 218-E-8 **Classification:** Accepted

Names: 218-E-8; 200 East Construction Burial Grounds **Reclassification:** None

Type: Burial Ground **Start Date:** 1/1/1958

Status: Inactive **End Date:** 1/1/1959

Description: The site consists of an unknown number of trenches. The trenches are backfilled.

Location: The site is located north of the 218-E-12A, on the hillside adjacent to the 218-E-12B Burial Ground.

Waste Type: Construction Debris

Waste Description: The site received mixed fission product/transuranic (MFP/TRU) waste, including repair and construction wastes from 293-A and the PUREX new crane addition.

Code: 218-E-9 **Classification:** Accepted

Names: 218-E-9; Burial Vault (HISS); 200 East Regulated Equipment Storage Site No. 009 **Reclassification:** None

Type: Burial Ground **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1958

Description: The site was used as an above-ground storage site, covering 62,000 square meters (74,000 square yards). The unit was never used as a burial ground.

Location: The site is located north of B Plant and east of the 218-E-2 Burial Ground.

Waste Type: Equipment

Waste Description: This unit was a storage site for fission product equipment that became contaminated in the uranium recovery program at the tank farm.

Code: 218-E-10 **Classification:** Accepted

Names: 218-E-10; Equipment Burial Ground #10; 200 East Industrial Waste No. 10	Reclassification: None
Type: Burial Ground	Start Date: 1/1/1960
Status: Active	End Date:
Description: The site consists of 18 trenches running north and south and 1 trench running east-west. Trench #1 is 7.3 meters (24 feet) deep with bottom dimensions of 400 meters (1,300 feet) long by 4.6 meters (15 feet) wide. Trenches #2 to #17 are 4.6 meters (15 feet) deep, 4.9 meters (16 feet) wide at the bottom, and vary in length from 245 meters (805 feet) to 350 meters (1,145 feet). The backfilled trench running east-west has bottom dimensions of 30 meters (100 feet) long by 4.6 meters (15 feet) wide.	
Location: The site is located inside 200 East Area, northwest of B Plant and directly west of the 218-E-5A Burial Ground.	
Release Description: On June 10, 1960, a partially covered burial box containing PUREX tube bundles caused an airborne contamination spread (UPR-200-E-23). UPR-200-E-24 documents the large plume of contamination discovered on June 12, 1960 that resulted from the burial box that collapsed at the 218-E-10 Burial Ground, identified several days after the box was buried. UPR-200-E-30 occurred on April 20, 1961. A wooden burial box, containing highly contaminated process jumpers and other equipment was pivoted on the railroad car and pulled down the unloading ramp. The box collapsed as it was being covered over with soil in the burial trench. Contamination (maximum 500 millirad/hour) was spread over a 400,000 square foot area within the burial ground. The majority of the contamination was confined to the burial ground.	
Process Description: The site has received failed equipment and mixed industrial wastes from PUREX, B-Plant and 100-N.	
Related Sites/Structures: The 218-E-10 Burial Ground is associated with the designated expansion area known as WIDS sitecode 200-E-20.	
Waste Type: Equipment	
Waste Description: The site has received failed equipment and mixed industrial wastes from PUREX, B-Plant and 100-N. The trench, running east to west, contains 69 PUREX cover blocks and 4 PUREX centrifuge blocks. Other waste includes concrete and wooden burial boxes containing tube bundles, jumper vessels, pumps, columns and filters. The trenches contain low level radiological waste, low level mixed waste, and unsegregated, remote handled waste. Trenches 9 and 12 contain some mixed-waste. Trench 9 specifically contains asbestos, di-n-octyl phthalate, and lead as mixed wastes. As of August 1995, this burial ground had received 21,764 cubic meters of waste.	
<u>The Following Sites Were Consolidated With This Site:</u>	
Code: UPR-200-E-23	
Names: UPR-200-E-23; UPR-200-W-158; Burial Box Collapse at 218-E-10	
Code: UPR-200-E-24	
Names: UPR-200-E-24; Contamination Plume from the 218-E-10 Burial Ground; UN-200-E-24	
Code: UPR-200-E-30	
Names: UPR-200-E-30; Contamination Within 218-E-10; UN-200-E-30	
<hr/>	
Code: 218-E-12A	Classification: Accepted
Names: 218-E-12A; 200 East Dry Waste No. 12A	Reclassification: None

radiation readings taken around the shoreline of the unit ranged from 2,000 to 15,000 counts/minute.

Process Description: The pond received cooling water and steam condensate from 221-T and 224-T via the 207-T Retention Basin and the 216-T-4-1 Ditch. The pond became active in November 1944 with the startup of the 221-T Chemical Separation Plant. The waste water in the ditch flowed through a culvert that went under the 218-W-2A Burial Ground railroad spur and then ran into a shallow ditch cut to a natural surface depression in the desert floor.

Related Sites/ Structures: The site is associated with the 216-T-4-1 Ditch and the 218-W-2A Burial Ground.

Waste Type: Steam Condensate

Waste Description: Until September 1951, the site received process cooling water from 221-T and 224-T Buildings via 207-T Retention Basin and steam condensate from 221-T Building. From September 1951 to July 1955, the site received same as above plus condenser cooling water and steam condensate from the 242-T Evaporator. From July 1955 to August 1956, same as November 1944 to September 1951. From August 1956 to June 1957, the site received steam condensate from 221-T Building. From June 1957 to July 1964, the site was on standby. From July 1964 to December 1965, the site received decontamination waste from 2706-T Building. From December 1965 to November 1970, same as above plus condenser cooling water from 242-T Building. After November 1970, the site received condenser cooling water from 242-T Building.

Code: 216-T-4B	Classification: Accepted
Names: 216-T-4B; 216-T-4 New Pond; 216-T-4-2 (P); 216-T-4-2 Pond	Reclassification: None
Type: Pond	Start Date: 1/1/1972
Status: Inactive	End Date: 1/1/1995

Description: The pond is no longer visible. The a portion of the pond is located within the area designated as the 218-W-3AE burial ground. It is not separately marked or posted from the burial ground postings.

Location: The pond was located east of old the pond 216-T-4A, north of 23rd Street. The 218-W-3AE Burial Ground was built over the dry pond location. The pond's size has been estimated as 1.5 acres (6100 m²).

Process Description: The pond was a natural depression that received overflow run off from the 216-T-4-2 Ditch. The effluent was usually absorbed in the ditch, leaving the pond area dry.

Related Sites/ Structures: The pond was associated with the 216-T-4-2 Ditch, 200-W-81 and the 218-W-3AE Burial Ground.

Waste Type: Steam Condensate

Waste Description: The site received steam condensate and condenser cooling water from the 242-T Evaporator and nonradioactive wastewater from 221-T air conditioning filter units and floor drains.

Code: 218-W-1	Classification: Accepted
Names: 218-W-1; Solid Waste Burial Ground #1; 200-W Area Dry Waste No. 001	Reclassification: None

Code: UPR-200-W-53
Names: UPR-200-W-53; Burial Box Collapse

Code: 218-W-3 **Classification:** Accepted
Names: 218-W-3; Dry Waste No. 003 **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1957
Status: Inactive **End Date:** 1/1/1961

Description: This site is a burial ground that contains 20 dry waste trenches. The site has been backfilled and surface stabilized. It is posted as Underground Radioactive Material.

Location: The site is located west of the 221-T Building and directly west of the 218-W-2A Burial Ground .

Waste Type: Misc. Trash and Debris

Waste Description: This site received miscellaneous unsegregated mixed transuranic (TRU) and non-TRU wastes. A logbook dated February 1959 through June 1961 documents the burial of 109 drums of uranium scrap (depleted) from California and Oregon, placed in Trench 17, a vehicle (ID - 491) buried at the east end of Trench 14 and 49 barrels of depleted uranium from Colorado and Oregon placed in Trench 14. Waste from 221-T, 291-T, 222-U, 234-5Z, 231-Z, 202-S, 308 building and lab waste is also noted.

Code: 218-W-3A **Classification:** Accepted
Names: 218-W-3A; Dry Waste No. 003A **Reclassification:** None
Type: Burial Ground **Start Date:** 1/1/1970
Status: Active **End Date:**

Description: The site is a burial ground that was designed to contain 61 dry and industrial waste trenches running in an east-west direction. Seven are 163 meters (535 feet) long, thirty-five are 284 meters (930 feet) long, and ten are 275 meters (900 feet) long. The remaining trenches range in length from 123 meters (403 feet) to 156 meters (512 feet). The side slopes are 1:1 or as required to match the natural angle of repose. Trench depths range from 3.7 to 5.8 meters (12 to 19 feet). Four trenches have not been dug.

Location: The site is located west of the 221-T Building and north of 218-W-3 Burial Ground.

Related Sites/Structures: 218-W-3A is associated with UPR-200-W-134

Waste Type: Soil

Waste Description: Trench #8 contains non-TRU and TRU waste. Trenches #17 and #5 contain TRU waste. Trench #40 contains industrial waste. Trench #14 contains 10 large concrete burial boxes of radioactive soil from the 241-S Tank Farm following a salt waste spill from the 102-S Tank transfer piping in 1973. Dose rates at the site of the spill before removal of the ground ranged to a maximum of 9 mR/h. Trench #17 contains fiberglass reinforced polyester (FRP) plywood boxes in various sizes. Trench #7 contains waste from the cleanup efforts at Three Mile Island Nuclear Plant (TMI-2). All remaining filled trenches contain dry and industrial waste.

Additional waste information is available in the WIDS hardcopy file for 218-W-3A.

Waste Type: Chemicals

Waste Description: Wastes disposed to this burial ground since 1987 include: 1,2,4-trimethylbenzene, acetonitrile, aliquat 336, alloy with mercury, asbestos, barium, beryllium, butyl acetate, cadmium, chromium, cyclohexanone, dibutyl-n/n-diethylcarbomyl phosphate, dioxane, ethanol,

ethanolamine, isopropyl alcohol, lead, mercury, methanol, naphthalene, normal paraffins, oil, silver, toluene, tri-butyl phosphate, trioctylphosphine oxide, and xylene.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-84

Names: UPR-200-W-84; Ground Contamination During Burial Operation at 218-W-3A

Code: UPR-200-W-134

Names: UPR-200-W-134; Improper Drum Burial at 218-W-3A

Code: 218-W-3AE

Classification: Accepted

Names: 218-W-3AE; Dry Waste No. 3AE; Industrial Waste No. 3AE

Reclassification: None

Type: Burial Ground

Start Date: 3/31/1981

Status: Active

End Date:

Description: The site was originally designed to consist of 24 trenches. To make the best use of available space, the site was redesigned to contain 12 trenches with deeper depths.

Location: This site is directly east and adjacent to the 218-W-3A Burial Ground in the 200 West Area.

Related Sites/ Structures: The site is related to the 216-T-4B Pond.

Waste Type: Misc. Trash and Debris

Waste Description: The site has been receiving miscellaneous wastes such as rags, paper, rubber gloves, disposable supplies, broken tools, etc. and industrial waste such as failed equipment, tanks, pumps, ovens, agitators, heaters, hoods, jumpers, and accessories. Trenches 2 and 3 have received remote-handled low-level waste. Trenches 5 and 10 are wide bottom stacking trenches. 218-W-3AE Trench 8 contains waste that has been encased in concrete monoliths. The monoliths are approximately 25 ft long by 10 ft wide and 13 feet tall. Most of the monoliths are placed together with only a cold joint separating them. Waste in the monoliths is typically category 3 waste and/or waste that requires stabilization because of mobile radionuclides. Trench 26 was designed for disposal of contaminated railroad cars and large tanks.

Waste Type: Chemicals

Waste Description: Wastes disposed of to this site include: aluminum, asbestos, beryllium, bis(2-ethylhexyl)phthalate (DOP), calcium carbonate, cement, charcoal, clay, silicas, talc, copolymer of styrene, copper, di-n-octyl phthalate, graphite, hydrotreated heavy naphtha isopropyl alcohol, lead, mixed esters, phthalate, nylon, peroxydisulfuric acid, disodium salt, resin, sodium chloride, sodium nitrate, sodium phosphate dibasic, steel, tantalum, uranium, and yttrium oxide.

Code: 218-W-4A

Classification: Accepted

Names: 218-W-4A; Dry Waste No. 04A

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1961

Status: Inactive

End Date: 1/1/1968

Description: The site is a burial ground that has been backfilled and stabilized. It is inside a chain link fence and is posted as Underground Radioactive Material. The unit contains 21 miscellaneous dry waste trenches and six vertical storage units (dry wells). The trenches are oriented in an east to west direction with Trench #1 on the southern end of the site and Trench #21 on the northern end. The six 4.6 meter (15-foot) deep dry wells were installed near the east end of Trench #16. The wells were made by welding together 210 liter (55-gallon) steel drums with the ends cut

out. The units were buried vertically and used for remote disposal of small, highly radioactive items. The site may also contain two larger caissons located at the extreme east end of the burial ground, between Trenches #17 and #18 and between Trenches #18 and #19. A Hanford drawing (H-2-32487) describes them 12 gage, 66 centimeter (26 inch) diameter well casings that extend 14.6 meters (48 feet) below grade.

Location: The site is located southeast of the intersection of 23rd Street and Dayton Avenue.

Waste Type: Equipment

Waste Description: This site received miscellaneous dry, unsegregated mixed transuranic (TRU) and non-TRU waste. Specific trench contents are mentioned on Drawing H-2-32487 and in the Burial Ground logbook. These sources document the burial of approximately 500 drums of depleted uranium from offsite contractors, pumps and equipment, laboratory hoods from 234-5 Z, 231-Z, 222-U and REDOX, and plutonium contaminated 300 Area laboratory waste. On 5-7-65, ten concrete barrels of high level plutonium were placed in Trench 16. On February 2, 1966 a Special Burial of waste from 234-5Z was made in Trench 20. Drawing H-2-32487 indicates the east end of Trench 19 contains Recuplex waste. (additional information available in the WIDS library)

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-72

Names: UPR-200-W-72; Contamination at 218-W-4A

Code: 218-W-4B

Classification: Accepted

Names: 218-W-4B; Dry Waste No. 04B

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1967

Status: Active

End Date: 1/1/1990

Description: The site contains 13 trenches and one row of 12 caissons. Trenches 7 and 11 contain retrievable TRU waste. The other trenches contain unsegregated TRU and non TRU radioactive waste. The row of caissons include 5 alpha caissons, 6 mixed fission product (MFP) caissons and one silo type caisson used for high activity N-Reactor waste. The alpha caissons and 2 of the MFP caissons are 2.7-meter (8.75-foot) diameter, 3-meter (10-foot) high concrete containers with steel lifting lugs and a 91-centimeter (36-inch) diameter access chute. Two of the MFP caissons are constructed of corrugated steel instead of concrete. The silo type caisson is a 3-meter (10-foot) diameter, 9-meter (30-foot) tall container placed on a concrete foundation with a top concrete shielding slab. It has a 107-centimeter (42-inch) diameter access chute. All three caisson types are equipped with air filter systems.

Location: The site is northwest of the 234-5Z Building, directly west of 231-Z Building.

Waste Type: Misc. Trash and Debris

Waste Description: The site received miscellaneous radioactive solid waste from 100, 200 and 300 Areas as well as offsite shipments. Solid waste consists of rags, paper, cardboard, plastic, pumps, tanks, process equipment, and other miscellaneous high dose rate and TRU dry waste. The site contains 114,300 cubic feet of segregated (post-1970) TRU waste. Trenches 7 and 11 contain retrievable TRU waste. The other trenches contain unsegregated TRU and radioactive waste. There are twelve caissons that received remote handled high dose rate and TRU wastes. Five caissons were designated as alpha caissons, but only four were used. They were used from 1970 to 1979. Seven caissons were designated as beta/gamma caissons and were used from 1968 to 1979. The last shipment of waste was deposited into MFP caisson #6 in 1990. No additional waste is planned to be placed in the caissons. As of August 1995, the burial ground had received a total of 10,466 cubic meters of waste. (The WIDS Library has an original logbook for this burial ground)

trenches. The mixed waste trenches are constructed with a polyethylene liner.

Location: The 218-W-5 Burial Ground is located in the northwest section of 200 West Area. It is west of Dayton Ave. and north of 23rd Street.

Waste Type: Misc. Trash and Debris

Waste Description: This unit is designed to store non-TRU waste and retrievable TRU waste. There are five distinct storage and disposal areas within the expansion: However, its current use includes only low level radiological soil waste and low level mixed waste.

Code: 218-W-11

Classification: Accepted

Names: 218-W-11; Regulated Storage Site

Reclassification: None

Type: Burial Ground

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1960

Description: The unit consists of two burial trenches. Trench #1 is 77 meters (258 feet) long, and Trench #2 is 46 meters (150 feet) long.

Location: The unit is located northwest of the 234-5Z Building, and north of 218-W-1.

Waste Type: Equipment

Waste Description: This unit was used for burial of low-level, contaminated sluicing equipment that had been used in the uranium recovery program. Some of the equipment was later taken from the unit and used in the strontium/cesium recovery program.

200-WA-1

Code: 207-S **Classification:** Accepted

Names: 207-S; 207-S Retention Basin; REDOX Retention Basin **Reclassification:** None

Type: Retention Basin **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1954

Description: The basin has been backfilled to grade with dirt. It is surrounded with concrete marker posts and is currently posted with Underground Radioactive Material signs.

Location: The site is located west of the 222-S Laboratory buildings and north of 10th Street.

Release Description: A number of leaks in process vessel coils in the REDOX Plant released radionuclides into the unit from late 1952 until the unit was taken out of service. UPR-200-W-13, UPR-200-W-15, UPR-200-W-95 are associated with the site.

Process Description: The basin received process cooling water and steam condensate from the 202-S facility before it was discharged to the 216-S-17 or 216-S-16 ponds. The basin was removed from service in 1954 following a 202-S coil leak that contaminated the basin above permissible limits. The basin was a 39.6 meter by 39.6 meter (130 foot by 130 foot) concrete structure with a volume of 3.23E+06 liters (8.53E+05 gallons). The walls are approximately 25 centimeters (10 inches) thick, and the floors are 20.3 centimeters (8 inches) thick. The system included approximately 610 meters (2,000 feet) of 61-centimeter (24-inch) diameter vitrified clay pipe used to convey the waste water into and out of the unit. There is an overflow tank located in the center of the north end, just inside the basin wall, composed of 0.48-centimeter (3/16-inch) steel walls, 1.7 meters (5.5 feet) high. The tank diameter was 6.1 meters (20 feet). There is also an outlet weir structure adjacent to the south wall, outside the basin.

Related Sites/Structures: The basin is associated with the 202-S facility, the 216-S-17 pond, UPR-200-W-13, UPR-200-W-15, UPR-200-W-95 and the 200-W-152-PL pipeline.

Waste Type: Process Effluent

Waste Description: The site received process cooling water and steam condensate from the 202-S Building. The water was then discharged to the 216-S-17 Pond or the 216-S-16 Pond. Coil leaks inside the 202-S facility often caused contaminated effluent to be discharged to the retention basin.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-13

Names: UPR-200-W-13; Liquid Release from REDOX to 207-S and 216-S-17 Pond; UN-200-W-13

Code: UPR-200-W-15

Names: UPR-200-W-15; Liquid Release from REDOX to 207-S and 216-S-17 Pond; UN-200-W-15

Code: UPR-200-W-95

Names: UPR-200-W-95; 207-S Retention Basin; UN-216-W-2

Code: 216-S-1&2 **Classification:** Accepted

Names: 216-S-1&2; 216-S-5 Crib; 216-S-1 & 2 **Reclassification:** None

Type: Crib **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1956

Description: The cribs are located within a common radiologically posted area. The surface is free of

*	<p>vegetation. The area is marked and posted with Underground Radioactive Material and Cave-in Potential signs. There is an additional, small posted Underground Radioactive Material area adjacent to the south side of the cribs and the 299-W22-11 well. The Dyncorp Integrated Soil, Vegetation and Animal Control group has stated that growing, contaminated weeds were found inside this area in September 2000. The contaminated weeds were removed and disposed of properly. The site consists of two open-bottomed crib boxes made of timbers. The cribs are connected in series where overflow from the crib box S1 flows into crib box S2 via an underground pipe. The boxes were set in a gravel lined trench and backfilled.</p>
Location:	The cribs are located east of the 241-SX Tank Farm, and southeast of the 241-S-151 Diversion Box.
Release Description:	In August 1955, process vapors and high dose rates were observed at the 207-S-11 Test Well (alias 299-W22-3), adjacent to the cribs. See UPR-200-W-36.
Process Description:	This unit was used as a subsurface liquid distribution system that received cell drainage and process condensate from the REDOX facility. The waste had a pH of 2.1. The waste was discharged to the cribs in batches. Each batch was approximately 19,000 liters (4940 gallons). An average of 10 batches were discharged each day. When the crib was abandoned, it had received approximately 750,000 curies of mixed fission products. It was replaced by the 216-S-7 crib.
Related Sites/ Structures:	The associated structure is the 241-S-151 Diversion Box, 200-W-137-PL pipeline and the 216-S-7 crib.
Waste Type:	Process Effluent
Waste Description:	The site received cell drainage from the D-1 Receiver Tank and process condensate from the D-2 Receiver Tank in the 202-S Building. The inorganics disposed of at the site were nitrate, aluminum nitrate, nitric acid, and sodium.

Code:	216-S-4	Classification:	Accepted
Names:	216-S-4; 216-S-4 Sump or Crib; 216-S-7; UN-216-W-1	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1956
Description:	The site is marked and posted with Underground Radioactive Materials signs. The site is constructed of two vertically buried metal culvert pipes.		
Location:	This unit is located to the east of the 216-U-10 Pond and northwest of the 216-S-21 Crib.		
Process Description:	The site is constructed of two rock-filled, 6.1 meter (20 foot) long metal culverts, connected in parallel. The site received liquid from the 241-S-101 and 241-S-104 tank condensers via an aboveground pipe. The site was deactivated by removing the aboveground piping.		
Related Sites/ Structures:	The site is associated with the condensers on the 241-S-101 and 241-S-104 Tanks located inside the 241-S Tank Farm.		
Waste Type:	Process Effluent		
Waste Description:	During August and September 1953, the site received condensate and cooling water from condensers on the 241-S-101 and 241-S-104 Tanks in the 241-S Tank Farm. After September 1953, the site received the cooling water but the condensate waste was routed to the 216-S-3 Crib. The chemical component of this waste was nitrate.		

edge of the crib to discharge overflow cooling water to a trench immediately southwest of the crib structure rather than allowing the crib to flood (see drawing H-6-466). The overflow of 50 to 100 gallons per minute represented approximately 5% of the total flow to the 216-S-5 crib. The emergency overflow continued throughout the summer of 1956. In September 1956, the REDOX A-2 dissolver and H-4 coils failed. The dose rates along the edge of the crib overflow area increased from 100 millirad per hour to 350 millirad per hour with some spots reading up to 17 rad per hour. The emergency crib overflow pond was used until the 216-S-16 Pond was completed in September 1957.

The SubSite is Part Of:

Code: 216-S-5

Names: 216-S-5; 216-S-5 Cavern #1; 216-S-6 Crib; 216-S-9

Code: 216-S-6

Classification: Accepted

Names: 216-S-6; 216-S-6 Cavern #2; 216-S-13 Crib; 216-S-5 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1972

Description: This unit consists of a square pit filled with gravel with corrugated metal perforated pipe running down the center, and six pipes branching off perpendicular to the main pipe. The site is backfilled and marked with Underground Radioactive Material signs.

Location: This unit is located outside the 200 West Area perimeter fence, northwest of 216-S-5 crib and north of 216-S-17 Pond.

Process Description: This unit received subsurface process cooling water and steam condensate from the 202-S Building waste via an underground pipelines (see sitecodes 200-W-153-PL, 200-W-155-PL and 200-W-156-PL). The 2904-S-171 Control Structure was built to measure and regulate flow of process waste being routed to the 216-S-6 Crib.

Related Sites/Structures: The site is associated with the 202-S Building, the 207-S Retention Basin, the 2904-S-171 Control Structure and the 216-S-5 Crib. The pipeline to the 216-S-6 crib is discussed in sitecodes 200-W-153-PL and 200-W-156-PL.

Waste Type: Process Effluent

Waste Description: From November 1954 until June 1967, the site received the process vessel cooling water and steam condensate from the 202-S Building. From June 1967 to July 1967, production operations were shut down and the 202-S Building was put on standby. After July 1967, the site received the steam condensate from the D-12 and D-14 Waste Concentrators in the 202-S Building. The waste is low in salt, neutral to basic, and contains nitrates.

Code: 216-S-7

Classification: Accepted

Names: 216-S-7; 216-S-7 Crib; 216-S-15

Reclassification: None

Type: Crib

Start Date: 1/1/1956

Status: Inactive

End Date: 1/1/1965

Description: The crib is marked and posted with Underground Radioactive Material and Cave-In Potential signs.

Location: The crib is located north of 10th Street, northwest of the 202-S Building.

Process Description: The crib was built to replace the 216-S-1 & 2 cribs. It received REDOX cell drainage and

Description: process condensate waste. The unit consists of two wooden cribs measuring 4.9 meters (16.1 feet) square and 1.6 meters (5.2 feet). The crib boxes are set 15.3 meters (50 feet) apart, center to center, in one excavation. The cribs were set in gravel and covered with backfill. The two cribs are connected in parallel by a pipe, allowing the flow to be equally distributed to both cribs. Each crib box had two risers that extended to the surface.

Related Sites/ Structures: The associated structure is the 202-S Building, 240-S-151 Diversion Box and the 200-W-138-PL pipeline.

Waste Type: Process Effluent

Waste Description: From January 12, 1956 to April 12, 1959, the unit received REDOX cell drainage from the D-1 Receiver Tank, process condensate from the D-2 Receiver Tank, and condensate from the H-6 Condenser in 202-S Building. A buildup of beta activity in this crib prompted the rerouting of H-6 waste material. On April 12, 1959, jumper changes were completed that routed the H-6 liquid waste to the underground waste storage tanks. The crib continued to receive waste from D-1 and D-2 Vessels until July 1965. The chemicals disposed at the site included nitrate, aluminum nitrate, nitric acid, and sodium.

Code: 216-S-8	Classification: Accepted
Names: 216-S-8; Cold Aqueous Crib; Cold Aqueous Grave; Cold Aqueous Trench; Unirradiated Uranium Waste Trench; 216-S-3	Reclassification: None
Type: Trench	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1952
Description: The site consists of one trench that has been backfilled to grade. It is marked and posted with Underground Radioactive Material signs.	
Location: This unit is located on the east side of the 241-SX Tank Farm and southwest of the 216-S-1 & 2 Cribs.	
Process Description: The site was a single use trench that received unirradiated uranium start-up waste from the 202-S Building.	

Related Sites/ Structures: The associated structure is the 202-S Building.

Waste Type: Process Effluent

Waste Description: The site received unirradiated start-up waste from the 202-S Building. The Monthly Report for October 1951 stated approval had been given for the excavation of a trench to receive uranium test run waste. Waste concentrations were estimated to be 0.2 grams of uranium per liter. The estimated total volume was expected to be only 152,000 liters (40,000 gallons). HW-28471 states that the trench was used between October 1951 through January 1952. This document states that a total of 309,700 liters (81,500 gallons) containing 193 kilograms (430 pounds) of unirradiated uranium was discharged to this trench.

Code: 216-S-12	Classification: Accepted
Names: 216-S-12; 291-S Stack Wash Sump; REDOX Stack Flush Trench; UPR-200-W-30	Reclassification: None
Type: Trench	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1954

Description: cement marker posts and chain, posted with "Underground Radioactive Material" signs. It labeled 216-S-12.

Location: The site is located northeast of the 202-S (REDOX) facility, north of the 291-S Stack.

Process Description: This site was used for liquid disposal of 291-S Stack flush water. It was fed with an overground pipeline. In July 1954, the REDOX stack was flushed and approximately 68,100 liters (18,000 gallons) of flush water that was drained into this trench.

Related Sites/ Structures: The site is associated with the 291-S Stack.

Waste Type: Water

Waste Description: The site received 68,100 liters (18,000 gallons) of flush water from the 291-S (REDOX) Stack. The water contained ammonium nitrate (600 kilograms). The material contained an estimated five curies of beta particle emitters and two to three curies of gamma particle emitters that were predominantly ruthenium and zirconium-niobium. Potential contaminants of concern include cobalt-60, cesium-137, strontium-90, plutonium-239/240, and uranium-238.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-30
Names: UPR-200-W-30; 216-S-12; UN-200-W-30

Code: 216-S-14	Classification: Accepted
Names: 216-S-14; 216-S-4 Burial Contaminated Hexone; Buried Contaminated Hexone; Cold Organic Trench or Grave	Reclassification: None
Type: Trench	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1952

Description: The trench is not marked or posted. Some areas of distressed vegetation and bare ground are in the vicinity of the location indicated in historical documentation.

Location: This unit is south of 222-S, and northwest of 216-S-19 Pond. The exact location cannot be determined. HW-60807 states it is approximately 46 meters (150 feet) southeast of the 222-S Sanitary Tile Field.

Process Description: This site consists of a backfilled trench that received hexone contaminated with trace amounts of unirradiated uranium from the initial test runs in the 202-S REDOX facility. The waste site was fed with and aboveground pipeline.

Related Sites/ Structures: The site is associated with the 202-S Building.

Waste Type: Chemicals

Waste Description: The site received approximately 76,000 liters (20,000 gallons) of hexone (methyl isobutyl ketone) contaminated with trace amounts of unirradiated uranium used in the initial testing of the 202-S Building (REDOX). The site was retired when discharge of hexone to the unit was completed. The radionuclide content is unknown, but it is assumed to be low-level contamination.

In 1971 core drillings were taken at this site. There was a strong odor of hexone from each of the sample cores and core holes. No radioactivity was found and the site was released from radiation zone status.

Code: 216-S-18 **Classification:** Accepted
Names: 216-S-18; 241-SX Steam Cleaning Pit; 216-S-14 Steam Cleaning Pit **Reclassification:** None
Type: Trench **Start Date:** 1/1/1954
Status: Inactive **End Date:** 1/1/1954

Description: The site consists of one backfilled trench. The area has been surface stabilized. It is posted with light weight chain and Underground Radioactive Material signs.

Location: The site is located north of 13th Street, east of 241-S Tank Farms and southwest of 216-S-9 Crib.

Process Description: This site was originally used as a steam cleaning pit for contaminated equipment. It was later used to consolidate contaminated soil from the surrounding area and backfilled to grade.

Related Sites/Structures: The site is associated with UPR-200-W-114.

Waste Type: Water

Waste Description: The site was originally a vehicle decontamination pit. The pit was excavated in 1972. The contaminated material was taken to a 200 West Area burial ground. In 1995 and 1997, the open trench was used to consolidate nearby surface soil contamination. The contaminated soil was covered with 1.8 meters (6 feet) of clean dirt to bring the site up to grade. The area was posted as an "Underground Radioactive Material" area.

Code: 216-S-20 **Classification:** Accepted
Names: 216-S-20; 216-SL-1&2 Crib; 216-SL-2 **Reclassification:** None
Type: Crib **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1972

Description: The site is posted with Underground Radioactive Material (URM) signs at each corner. Two areas above the crib structures, inside the URM, are marked with post and chain and Cave-In Potential signs. An abandoned waste unloading station is located approximately 7.6 meters (25 feet) south of the posted crib. The unloading station was posted with Contamination Area signs, but later backfilled and changed to Underground Radioactive Material Area.

Location: The unit is located southeast of the 202-S (REDOX) facility and east of the 222-S Laboratory building.

Process Description: The site received liquid waste from the 222-S Building and 300 Area laboratory waste via truck that was unloaded into the manhole. The manhole unloading structure is located approximately 7.6 meters (25 feet) south of the 216-S-20 radiologically posted area. The unit contains two 3.7 meter by 3.7 meter (12 foot by 12 foot) crib boxes that are 15 meters (50 feet) apart. The bottom of each wooden crib box is filled with 1.2 meters (4 feet) of gravel. Each wooden crib box has two risers extending from the top of the box to above ground. The crib boxes are connected in series with one box overflowing into another via a pipe. The cribs are backfilled to grade.

Related Sites/Structures: The site is associated with the 222-S Building, 219-S building, the 207-SL Retention Basin, and the "manhole" unloading station that received 300 Area Laboratory wastes via truck. The pipelines associated with 216-S-20 crib are discussed in sitecode 200-W-149-PL.

Waste Type: Process Effluent

Waste Description: From January 1952 to July 1953, the site received miscellaneous waste from lab hoods and decontamination sinks in the 222-S Building via the 219-S Retention Building. From July 1953 to September 1963, the site received the above effluent via the 207-SL Retention Basin, the 219-S Retention Building and 300 Area laboratory waste via truck, unloaded into the manhole. From September 1963 to January 1969, the site received miscellaneous waste from lab hoods and decontamination sinks in 222-S via the 219-S Retention Building. From January 1969 to November 1972, the crib was inactive due to surface subsidence on this unit. The 300 Area lab waste was rerouted to the 216-T-28 Crib.

Code: 216-S-22 **Classification:** Accepted

Names: 216-S-22; 216-S-22 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1967

Description: The crib is marked and posted with Underground Radioactive Material signs.

Location: The crib is located east of 202-S Building and northeast of 216-S-20 Crib.

Process Description: The site provided subsurface liquid disposal for the 293-S Building waste. The crib is a gravel structure with a side slope of 1:1.5. A pipe enters the unit below grade, branches out at right angles downwards to the bottom, and runs along the bottom for the length of the unit. The section of pipe along the crib bottom has open joints. The rest of structure is filled with backfill. (see sitecode 200-W-146 PL)

Related Sites/Structures: The structure is associated with the 293-S Building. The crib pipeline is WIDS sitecode 200-W-146 PL.

Waste Type: Process Effluent

Waste Description: The site received liquid waste from the acid recovery facility in the 293-S Building. The chemicals disposed at the site were nitrate and sodium.

Code: 216-S-23 **Classification:** Accepted

Names: 216-S-23; 216-S-23 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1969

Status: Inactive **End Date:** 1/1/1972

Description: The crib is marked with concrete AC-540 markers and posted with Underground Radioactive Material signs.

Location: This unit is located northeast of the 241-SY Tank Farm and north of the 216-S-9 crib.

Process Description: This unit provided subsurface liquid disposal for the 202-S Building. The unit is a crib with a perforated pipe set in a gravel layer, running the length of the crib. At one end of the crib a filter and gage well riser connects to the pipe. The rest of the crib contains backfill.

Related Sites/Structures: The crib is associated with the 202-S building, the 240-S-151 diversion box, 216-S-7 crib, 216-S-23 crib and the 200-W-138-PL, 200-W-139-PL and 200-W-141-PL pipelines.

Waste Type: Process Effluent

Waste Description: The site received REDOX process condensate from D-2 Receiver Tank in the 202-S Building. The waste is low in salt and is neutral to basic.

Code:	216-S-25	Classification:	Accepted
Names:	216-S-25; 216-S-25 Crib	Reclassification:	None
Type:	Crib	Start Date:	1/1/1973
Status:	Inactive	End Date:	1/1/1992
Description:	The site is marked with AC-540 markers and posted with Underground Radioactive Material signs. A distribution pipe is located 2.1 meters (7 feet) below grade. The site contains approximately 1160 cubic meters (41,000 cubic feet) of gravel. Three gage wells and vent systems made of 20 centimeter (8 inch) SCH 40 PVC with a 15 centimeter (6 inch) SCH 40 PVC perforated distribution pipe.		
Location:	The crib is located south of 13th Street and west of the 241-SX Tank Farm; outside the 200 West perimeter fence, south and east of 216-U-10 Pond .		
Release Description:	The Groundwater Monitoring Compliance Report for August 1986 states that well #299-W23-09: contaminant alpha had been exceeding the U-238 concentration limit since July 1985. An increasing trend is evident due to either remedial action involving 216-U-1 & 2 cribs or to the deactivated U Pond. However, concentrations of all uranium isotopes are below their respective concentration limits. Contaminant H-3 continues to show an increasing trend even though discharge to the unit from U-1 and U-2 pumping has stopped. Well #299-W23-10: contaminant alpha has exceeded the U-238 concentration limit since June 1985. Uranium isotopic analysis of the October sample indicates U-238 exceeds the concentration limit. This report led to a groundwater pump and treat activity. The treated water was discharged to the 216-S-25 crib.		
Process Description:	The crib received effluent from the 242-S Evaporator building via a ten centimeter (4 inch) diameter underground pipeline (sitecode 200-W-161-PL). In 1984, the pipeline from 241-SX-402 (sitecode 200-W-159-PL) was tied into the 216-S-25 crib pipeline.		
Related Sites/Structures:	The crib is associated with the 242-S Evaporator building. The pipeline associated with this crib is sitecode 200-W-161-PL.		
Waste Type:	Steam Condensate		
Waste Description:	Until 11/80, the site received the 242-S Evaporator process steam condensate. Since 11/80, the 242-S Evaporator has been in standby mode. In 1985, this crib received the effluent from the 216-U-1 & 2 groundwater pump and treat effort. The 241-SX Sludge Cooler Steam Heater was shut off in 1992 due to leaking tubes. A new steam heater unit was installed in 1993 and scheduled to start up in 1995. It was to operate for five months (through winter and early spring) producing approximately 15 to 30 liters (4-8 gallons) of condensate per hour that would be discharged to the 216-S-25 crib.		

Code:	207-SL	Classification:	Accepted
Names:	207-SL; 207-SL Retention Basin; 222-S Retention Basin; REDOX Lab Retention Basin	Reclassification:	None
Type:	Retention Basin	Start Date:	1/1/1952
Status:	Active	End Date:	
Description:	The site consists of a large below ground basin that is divided into two 94,625 liter (25,000 gallon) holding basins. The below ground basins are constructed of reinforced concrete walls 30 to 41 centimeters (12 to 16 inches) thick, and the floor is 38 centimeters (15 inches) thick. The unit also consists of three above ground 75,700 liter (20,000 gallon) holding tanks, added in 1994 to support the TEFD system.		

Location: The site is located east of the 222-S Laboratory Buildings and west of Beloit Avenue.

Process Description: The retention basin received low-level radioactive waste from the 222-S laboratory ventilation cooling water, laboratory hoods and sinks. Until 1984, the basin effluent was discharged to the 216-S-19 Pond. From 1984 to 1995 the effluent was discharged to the 216-S-26 crib. After 1995, non-radioactive, non-hazardous liquid effluents from the 222-S Laboratory, the 222-SA Laboratory, the 219-S Operating Gallery sump, and the package boiler unit, flow into the below ground basins for retention prior to transfer to the Treated Effluent Disposal Facility (TEDF). The effluents can be transferred to and from the below ground basins to the above ground holding tanks to provide additional extended storage before transfer.

Related Sites/ Structures: The basin is associated with the 216-S-19 Pond, the 216-S-26 crib and the TEDF system.

Waste Type: Process Effluent

Waste Description: From 2/52 until 12/54, the site received low-level waste, including ventilation cooling water and miscellaneous wastes from laboratory hoods and sinks in the 222-S Laboratory. These were then discharged to the 216-S-19 Pond. From 12/54 to 10/55, the site was inactive (radioactivity levels of waste exceeded set limits). After 10/55, the site received nondangerous/nonradioactive waste. This unit discharged to the 216-S-19 Pond until 11/94, then was routed to the 216-S-26 Crib until 7/94, and since 7/94 discharges to the 200 Area TEDF.

Code: 216-SX-2	Classification: Accepted
Names: 216-SX-2; 216-SX-2 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1965

Description: The crib is currently surrounded by light post and chain and posted with Underground Radioactive Material signs. It is labeled "216-SX-2" on three sides with old style black and white signs. It is a gravel filled crib topped with a subsurface layer of Sisalkraft paper.

Location: The crib is located on the east side of Cooper Ave. adjacent to the 241-SX tank Farm. It is approximately 7.6 meters (25 feet) south of the 241-SX-701 Compressor house and 23 meters (75 feet) west of the 241-SX Tank Farm fence.

Related Sites/ Structures: The crib is associated with the 241-SX-701 Compressor House. The pipeline associated with this crib is sitecode 200-W-162-PL.

Waste Type: Steam Condensate

Waste Description: The crib received waste from the 241-SX-701 Compressor House.

Code: 207-T	Classification: Accepted
Names: 207-T; 207-T Retention Basin; T Plant Retention Basin	Reclassification: None
Type: Retention Basin	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1995

Description: The retention basin has been backfilled to grade. T Posts mark the corners of the basin. It is posted as an Underground Radioactive Material area.

Location: The site is located west of 221-T Building and north of 23rd Street.

Release Description: On September 12, 1985, 1900 liters (500 gallons) of aqueous 5% sodium hydroxide solution containing 100 kilograms (219 pounds) of sodium hydroxide was released from T Plant to the basins and subsequently to 214-T-4-2 Ditch. At the time of the release, pH was 12.5. No cleanup actions were undertaken. After 6 hours of dilution by continued condensate discharge, the pH was 7.67

Process Description: The unit was a concrete structure, divided into two sections, with a 3,800,000 liters (1,000,000 gallon) capacity. The bottom dimensions for each basin are 106 by 106 feet (32.3 by 32.3 m). The basin received cooling water effluent from 221-T and 224-T. The basin effluent was released to the 216-T-4-1 and 216-T-4-2 Ditches. There was an inlet structure on the east side and an outlet structure on the west side, adjacent to the outside walls of the basins. Two 40.6 centimeter (16 inch) diameter cast iron pipes connected to two 0.9 meter (3 foot) sumps, one for each basin. Approximately 1830 meter (6000 feet) of 61 centimeter (24 inch) diameter vitrified clay pipeline was used to convey waste water to and from the basin. H-2-3019 shows a black iron pipeline that exits the east side of the basin, traveling south, connecting to a pipeline that is associated with the 216-TY-201 flush tank. Periodically the sludge that accumulated on the bottoms of the basins was cleaned out. The sludge was placed in holes located around the perimeter of the basin and covered with clean dirt. One of these holes is documented as 216-T-12. Additional holes were probably dug and filled with sludge, but not individually documented.

Related Sites/ Structures: The basin is associated with 221-T, 224-T, 216-T-12, 200-W-53 and 216-T-4-1 and 216-T-4-2 Ditches. The inlet pipelines associated with this basin are WIDS sitecodes 200-W-88-PL, 200-W-165-PL, 200-W-166-PL and 200-W-167-PL. The outlet pipeline that leads to the 216-T-4 ditch is WIDS sitecode 200-W-164-PL.

Waste Type: Steam Condensate

Waste Description: The unit received potentially low-level radioactive waste from T Plant process cooling and ventilation steam condensate, which was discharged to the 216-T-4-1 and 214-T-4-2 Ditches. From 11/44 to the 1950's, the site received process cooling water from process equipment jackets in 221-T and 224-T buildings. From early 1950's to 1955, the site received the same, plus 242-T Evaporator cooling water. From 1955 to 1965, the site received the same minus 242-T Evaporator cooling water. From 1965 to late 1960's, the site received the same plus 242-T Evaporator cooling water. From late 1960's to 1973, the site received the same minus 242-T Evaporator cooling water. From 1973 to 1976, the site received the same plus 242-T Evaporator cooling water. After 1976, the site received intermittent flow from 221-T, 221-TA, and 224-T 224-T buildings. The effluent discharge was rerouted to the 200 Area TEDF in 1995. The unit was backfilled with dirt in 1996.

Code: 216-T-2 **Classification:** Accepted

Names: 216-T-2; 222-T Reverse Well; 222-T-110 Dry Well **Reclassification:** None

Type: Injection/Reverse Well **Start Date:** 1/1/1945

Status: Inactive **End Date:** 5/1/1950

Description: The reverse well is a below grade 15.2 centimeter well casing with a 7.6-centimeter (3-inch) diameter vent pipe extending approximately 1.2 meters (4 feet) above grade. It has been capped and is surrounded with light post and chain. A single cement AC-540 marker identifies the site. It is posted as an Underground Radioactive Material Area.

Location: The site is located near the southwest corner of the 222-T Building.

Process Description: During the bismuth phosphate fuel separation process, batch samples were analyzed in the 222-

T and 222-B laboratories. The reverse wells were installed to provide disposal for the laboratory "hot" sink and sample table. HW-4850 states that the 222-T laboratory was discharging approximately 2.6 curies of fission products and 600 milligrams of plutonium to the dry well per month. The well consists of a pipe extending vertically 22.9 meter (75 feet) below grade, with the last 6.1 meter (20 foot) of the pipe perforated with 39 1.3-centimeter (1/2-inch) holes-per-meter (approximately 12 holes-per-foot).

Related Sites/ Structures: The reverse well is associated with activities in the 222-T laboratory.

Waste Type: Process Effluent

Waste Description: The site received decontamination sink waste and sample slurper waste from the 222-T Building. HW-4850, written in 1945, states that the 222-T laboratory was discharging approximately 2.6 curies of fission products and 600 milligrams of plutonium to the dry well per month. The waste is acidic.

Code: 216-T-4-1D	Classification: Accepted
Names: 216-T-4-1D; 216-T-4 Ditch; 216-T-4 Swamp	Reclassification: None
Type: Ditch	Start Date: 11/1/1944
Status: Inactive	End Date: 5/1/1972

Description: The original ditch is not currently visible. The ditch was replaced by the 216-T-4-2 Ditch in 1972. The first 15 meters (50 feet) of the original (216-T-4-1D) ditch was reused in the replacement ditch construction. The 216-T-4-1 Ditch was surface stabilized along with the 216-T-4-2 replacement ditch in 1995. The area is posted as an Underground Radioactive Material area.

Location: The site was located north of 23rd Street, west of the 221-T Building and northwest of the 241-T Tank Farm.

Process Description: The ditch received T Plant cooling water and condensate waste via the 207-T Retention Basin.

Related Sites/ Structures: The ditch is associated with the 216-T-4A Pond and the 216-T-4-2 Ditch. Pipeline 200-W-163-PL connected to the ditch. The pipeline from 207-T that fed the ditch is sitecode 200-W-164-PL.

Waste Type: Steam Condensate

Waste Description: From 1944 to September 1951, the site received process cooling water from the 221-T and 224-T Buildings via the 207-T Retention Basin and steam condensate from 221-T Building. From September 1951 to July 1955, the site received the above listed streams plus condenser cooling water and steam condensate from 242-T Evaporator. From July 1955 to August 1956, the site received the same as November 1944 to September 1951. From August 1956 to June 1957, the site received steam condensate from 221-T. From June 1957 to July 1964, the site was on standby. From July 1964 to December 1965, the site received decontamination waste from 2706-T. From December 1965 to November 1970, the site received the above listed streams plus condenser cooling water from 242-T Building. After November 1970, the site received condenser cooling water from 242-T Building. The total plutonium is 1.41 grams (3.1E-3 pounds) according to Hanford Defense Waste Environmental Impact Statement data.

Code: 216-T-8	Classification: Accepted
Names: 216-T-8; 222-T-1 & 2 Cribs	Reclassification: None
Type: Crib	Start Date: 1/1/1950

Status: Inactive **End Date:** 1/1/1951

Description: The site consists of two wood crib boxes, each set into a pit with sloped sides. Each crib pit has 4.3-meter (14-foot) by 4.3-meter (14-foot) bottom dimension, with a 1:1 side slope. The pits are 23 meters (75 feet) apart. The boxes have risers and are connected in series by a pipe. One box overflows into the other. The pits are backfilled.

Location: This site is located just on the east side of the 224-T Building.

Process Description: This site provided subsurface liquid disposal for 222-T Decontamination Sink Waste and Sample Slurper waste. A pipeline from 292-T teed into the 216-T-8 waste line.

Related Sites/Structures: The associated structure is the 222-T and 292-T Facilities (see 200-W-40). The pipeline to 216-T-8 is sitecode 200-W-142-PL.

Waste Type: Process Effluent

Waste Description: The waste was neutral to basic, and contained sulfuric acid, nitric acid, and sodium dichromate.

Code: 216-T-9 **Classification:** Accepted

Names: 216-T-9; Decontamination Trenches; Equipment Decontamination Area **Reclassification:** None

Type: Trench **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. The site is no longer marked or posted.

Location: This site is located west of the 221-T Building and southwest of the 216-T-33 Crib.

Process Description: This site was used for subsurface liquid disposal of vehicle decontamination waste from heavy equipment and other vehicles.

Related Sites/Structures: The site is associated with trenches 216-T-10 and 216-T-11.

Waste Type: Water

Waste Description: The site received heavy equipment and vehicle decontamination waste. No radionuclide or chemical contamination has been documented for this site according to DOE/RL-91-61. However, ARH-2757 states that all contamination (maximum 3000 counts per minute) was buried in the 200 West Dry Waste Burial Ground. Although no cleaning agents are listed, the possibility of hazardous chemical contamination exists.

Code: 216-T-10 **Classification:** Accepted

Names: 216-T-10; Decontamination Trenches; Equipment Decontamination Area **Reclassification:** None

Type: Trench **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. The site is no longer marked or posted.

Location: This site is located west of the 221-T Building and southwest of the 216-T-33 Crib.

Process Description: This site was used for subsurface liquid disposal of heavy equipment and vehicle decontamination waste.

Related Sites/ Structures: The site is associated with trenches 216-T-9 and 216-T-11.

Waste Type: Water

Waste Description: The site received heavy equipment and vehicle decontamination waste. No radionuclide or chemical contamination has been documented for this site according to DOE/RL-91-61. However, ARH-2757 states that all contamination (maximum 3000 counts per minute) was buried in the 200 West Dry Waste Burial Ground. Although no cleaning agents are listed, the possibility of hazardous chemical contamination exists.

Code: 216-T-11 **Classification:** Accepted

Names: 216-T-11; Decontamination Trenches; Equipment Decontamination Area **Reclassification:** None

Type: Trench **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1954

Description: This site consists of a backfilled trench. The site is no longer marked or posted.

Location: This site is located west of 221-T and southwest of the 216-T-33 Crib.

Process Description: This site was used for subsurface liquid disposal of heavy equipment and vehicle decontamination waste.

Related Sites/ Structures: The site is associated with the 216-T-9 and 216-T-10 trenches..

Waste Type: Water

Waste Description: The site received heavy equipment and vehicle decontamination waste. No radionuclide or chemical contamination has been documented for this site according to DOE/RL-91-61. However, ARH-2757 states that all contamination (maximum 3000 counts per minute) was buried in the 200 West Dry Waste Burial Ground. Although no cleaning agents are listed, the possibility of hazardous chemical contamination exists.

Code: 216-T-12 **Classification:** Accepted

Names: 216-T-12; 207-T Sludge Grave; 207-T Sludge Pit; 216-T-11 **Reclassification:** None

Type: Trench **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1954

Description: There is no visible evidence of this waste site. The area around the 207-T Retention Basin, including the northeast corner where this pit was located, has been stabilized with clean backfill material and posted with Underground Radioactive Material signs. The sludge pit is not separately marked.

Location: This site is located at the northeast corner of the 207-T Retention Basin.

Process Description: The site was a small trench that was dug November 1954 with a backhoe at the northeast corner of the 207-T Retention Basin. Sludge dredged from the 207-T Retention Basin was put into the trench and covered.

Related Sites/ Structures: The associated structure is the 207-T Retention Basin.

Structures:**Waste Type:** Sludge**Waste Description:** The site received contaminated sludge from the 207-T Retention Basin. The waste is low in salt and is neutral to basic.**Code:** 216-T-13 **Classification:** Accepted**Names:** 216-T-13; 269-W Decontamination Pit or Trench; 269-W Regulated Garage; 269-W Regulated Garage Decontamination Pit; 216-T-12 **Reclassification:** None**Type:** Trench **Start Date:** 1/1/1954**Status:** Inactive **End Date:** 1/1/1964**Description:** The site consisted of a single open trench located west of the 269-W Regulated Garage. The garage has been demolished. Currently, there is a concrete ramp covered with 0.6 meters (2 feet) of gravel that is visible near the site of the garage. The trench is no longer marked or posted.**Location:** This site is located on the north side of the 241-TY Farm, north of the tank farm perimeter fence. The site has been shown at two locations on different maps. Drawing H-2-1495 (originally made in 1952) shows the location of the trench adjacent to the 269-W garage and northwest of the 241-TY Tank Farm, while a later drawing (H-2-32526, 1967 Rev 3) shows the trench due north of the 241-TY Tank Farm. The mapped location in HGIS is due north of the Tank Farm as of December 2001.**Process Description:** This site was used to clean contaminated vehicles. A Tip Rack was located in the bottom of the open trench. Vehicles were driven into the trench and onto the rack. The vehicles were then sprayed with water or steam to remove the contamination. The decontamination was often required prior to vehicles being serviced at the 269-W Garage.**Related Sites/Structures:** The site was associated with activities at the 269-W Regulated Garage, but the garage was not physically connected to the vehicle decontamination trench.**Waste Type:** Water**Waste Description:** The site received vehicle decontamination liquid waste. The inventory prior to the removal of 3.06 cubic meters (4 cubic yards) of soil was estimated through 1972 as follows. ARH-2757, part 3 states the volume was 0.98E+05 liters; <0.100E+00 grams - plutonium; 0.840E+02 curies - beta; 0.100E00 curies - strontium-90; 0.400E+02 curies - ruthenium-106; 0.100E+00 curies - cesium-137; < 0.100E+00 curies - cobalt-60; <0.500E-01 kilograms - uranium. ARH-1608 states the volume was 0.026E+06 liters; <0.100E+00 grams - plutonium; 60 curies - beta; 1.00E+00 curies - strontium-90; 40 curies - ruthenium-106; 1.00E+00 curies - cesium-137; < 0.100E+00 curies - cobalt-60; <.1 pounds of uranium. Readings up to 1,500 counts per minute were measured in the excavated soil. Although no cleaning agents are listed, the possibility of hazardous chemical contamination exists.**Code:** 216-T-20 **Classification:** Accepted**Names:** 216-T-20; 216-T-20 Crib; 216-TX-2; 241-TX-155 Contaminated Acid Grave **Reclassification:** None**Type:** Trench **Start Date:** 11/1/1952**Status:** Inactive **End Date:** 11/1/1952**Description:** The site has a small concrete block structure on the surface with a metal lid labeled Confined Space and Potential Internal Contamination. There is a single concrete marker with an

Underground Radioactive Material sign on it. The concrete block structure is surrounded with the same type of cobbles that surround the powerhouse pond.

Location: The unit is located east of Camden Avenue, adjacent to the north end of the 200 West Area Power House Pond.

Process Description: The historical documentation describes the site as an excavation, similar to a pit. It was a single use pit dug specifically to receive contaminated acid from the 241-TX-155 Diversion Box. There is no mention of the concrete block access structure currently located at the site.

Related Sites/ Structures: The site is associated with the 241-TX-155 Diversion Box.

Waste Type: Process Effluent

Waste Description: The site received contaminated nitric acid from 241-TX-155 Diversion Box Catch Tank.

Code: 216-T-27 **Classification:** Accepted

Names: 216-T-27; 216-TX-2 Cavern; 216-TX-2 Crib; 216-TY-2 Cavern; 216-TY-2 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1965

Status: Inactive **End Date:** 1/1/1965

Description: The 216-T-26, 216-T-27 and 216-T-28 cribs are enclosed within a common steel post and chain barricade that is posted "Underground Radioactive Material". The 216-TY-201 flush tank is located in the northeast corner of the area.

Location: This site is located inside 200 West Area, south of 23rd Street and east of Camden Ave.

Process Description: The underground pipeline from the 241-TY Tank Farm to the 216-T-26 crib was isolated with a blank flange in 1956. An underground pipeline from the 241-T Tank Farm was used to transfer waste from T Plant (after it cascaded through tanks 241-T-110, 241-T-111 and 241-T-112) to the 216-T-27 and 216-T-28 cribs. The tanks contained steam condensate and process decontamination waste from T Plant along with 2607-T equipment decontamination waste. In 1964, 300 Area laboratory waste was shipped from the 340 facility by truck to the 200 West Area. The 300 Area waste was combined with the T-Plant waste that was discharged to cribs 216-T-27 and 216-T-28. Lundgren (1971) mentions a crib riser being used for the disposal of 300 Area waste. A letter written by G.L. Ritter (1966) stated that the 300 Area waste and the T Plant waste had been diverted from the 216-T-28 Crib to the 216-T-27 Crib in November 1965 due to an increase in the groundwater contamination levels below the 216-T-28 Crib. Only a limited amount of 300 Area waste had been expected and the 216-T-27 Crib was estimated to be used for approximately 18 months. However, information was collected that indicated the 300 Area waste discharged to the 216-T-27 Crib did not react favorably with the soil at this crib location. It was recommended that this crib be deactivated earlier than expected.

Related Sites/ Structures: The crib is associated with 221-T, 2706-T, 216-TY-201 Flush Tank, 200-W-188-PL and 200-W-82.

Waste Type: Process Effluent

Waste Description: The site received 300 Area lab waste containing nitrates, 221-T steam condensate and process decontamination waste and equipment decontamination waste from 2706-T. A page of typed, unsigned notes was found that documents the transport of "round the clock" trucking of waste from the PRTR rupture incident in September 1965. The notes indicate that the waste would be discharged into the 216-T-27 crib. A different page of notes, also unsigned, states that more

than 100 truck loads of liquid waste from the PRTR incident was discharged into the 216-T-28 crib during September and October 1965. Since the same truck unloading station would have been used for either crib, it is difficult to be sure how much waste was discharged to the 216-T-27 and how much was discharged to the 216-T-28 crib.

Code:	216-T-28	Classification:	Accepted
Names:	216-T-28; 216-TX-3 Cavern; 216-TX-3 Crib; 216-TY-3 Cavern; 216-TY-3 Crib	Reclassification:	None
Type:	Crib	Start Date:	1/1/1960
Status:	Inactive	End Date:	1/1/1966
Description:	The 216-T-26, 216-T-27 and 216-T-28 cribs are enclosed within a common steel post and chain barricade that is posted "Underground Radioactive Material". The 216-TY-201 flush tank is located in the northeast corner of the area.		
Location:	This site is located inside 200 West Area, south of 23rd Street and east of Camden Ave.		
Process Description:	The underground pipeline from the 241-TY Tank Farm to the 216-T-26 crib was isolated in 1956. The 216-T-27 and 216-T-28 Cribs were active from February 1960 to December 1966. An underground pipeline from the 241-T Tank Farm was used to transfer waste from T Plant (after it cascaded through tanks 241-T-110, 241-T-111 and 241-T-112) to the 216-T-27 and 216-T-28 cribs. The tanks contained steam condensate and process decontamination waste from T Plant along with 2607-T equipment decontamination waste. In 1964, 300 Area laboratory waste was shipped from the 340 facility by truck to the 200 West Area. The 300 Area waste was combined with the T-Plant waste that was discharged to cribs 216-T-27 and 216-T-28. Lundgren (1971) mentions a crib riser being used for the disposal of 300 Area waste. In May 1966, waste from the 2706-T Building was rerouted to the 216-T-4 Ditch. In December 1966, the pipeline to the crib and the 300 Area waste disposal riser were isolated. The 300 Area laboratory waste was sent to the 216-T-34 Crib. The T Plant effluent was rerouted to the 216-T-36 Crib.		
Related Sites/Structures:	The associated structures are the 221-T Building, 2706-T Building, 216-TY-201 Flush Tank and 200-W-82.		
Waste Type:	Process Effluent		
Waste Description:	From February 1960 through February 1963, the crib received steam condensate and process decontamination waste via the 241-T-112 tank in the 241-T Tank Farm. In 1963, 2706-T equipment decontamination waste was added to the waste stream. In 1964, 300 Area laboratory waste was sent to this crib via tanker trucks from the 340 Waste Transfer Facility. A page of typed, unsigned notes dated October 26, 1965 indicated that 189 truck loads of liquid waste from 300 Area were discharged into the 216-T-28 crib between September 13, 1965 and October 25, 1965. The total volume during that time was 945,000 gallons. Most of the waste was from the PRTR rupture incident. The crib was deactivated in December 1966 when the prescribed radionuclide disposal limit was reached.		

Code:	216-T-29	Classification:	Accepted
Names:	216-T-29; 216-T-29 French Drain; 291-T Sand Filter Sewer	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1964
Description:	The 291-T Sand Filter is located northeast of the 221-T building. The 216-T-29 French Drain is		

part of the sand filter construction. The sand filter is marked and posted as a Contamination Area. There is a vent riser protruding through the roof of the northwest corner of the sand filter. This is assumed to be the location of the drain.

Location: The french drain is located adjacent to the north end of the 291-T Sand Filter and northeast of the 221-T Building.

Process Description: This site received canyon air condensate from the 291-T Sand Filter. In the 1950's, silver reactor filters, made of fiberglass soaked in silver nitrate, were added to the stack ducts.

Related Sites/ Structures: The associated structure is 200-W-45 (291-T Sand Filter).

Waste Type: Steam Condensate

Waste Description: The site waste was moisture condensed from canyon air and included 8000 kilograms of nitric acid. In the 1950's, silver reactor filters were added to the stack ducts. They were made of fiberglass soaked in silver nitrate. The filters reacted with the radioiodine to form silver iodide.

Code: 216-T-31

Classification: Accepted

Names: 216-T-31; 216-T-31 French Drain

Reclassification: None

Type: French Drain

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1962

Description: The site consisted of a 0.9 meter (3 foot) diameter french drain. The drain was exhumed and left unmarked. A post with the WIDS Sitecode 216-T-31 now marks the approximate location of where the french drain had been.

Location: This site was located west of Camden Ave., near the southeast corner of the 241-TX Farm, on the east side of 241-TX Tank Farm fence.

Process Description: The unit was in operation in 1954 and abandoned in 1959 after it was contaminated by steam condensate from a steam line blowout during efforts to unplug a waste line (October 1959). A new steam line was installed in 1959 and a new steam condensate drain was made to replace the contaminated drain.

Waste Type: Steam Condensate

Waste Description: The drain was accidentally contaminated by contaminated steam condensate from a blowout through the steam line during efforts to unplug a waste line in October 1959.

Code: 216-T-33

Classification: Accepted

Names: 216-T-33; 216-T-33 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: The site is surrounded with light metal posts and chain. It is posted with Underground Radioactive Material signs. The site consists of a rectangular crib with perforated vitreous clay inlet pipe set into a gravel layer. A layer of plastic sheeting, clean sand, and backfill are above the pipe.

Location: This unit is located west of 221-T Canyon Building and southwest of 2706-T.

Process Description: This site provided subsurface liquid disposal for the 2706-T Building. After the line plugged, the 2706-T waste was routed to the 216-T-28 crib, via the 241-T-112 tank.

Related Sites/ Structures: The site is associated with the 2706-T Decontamination Building. The pipeline associated with this crib is 200-W-173-PL.

Waste Type: Water

Waste Description: The site received equipment decontamination waste from the 2706-T Building. The waste is low in salt, neutral to basic, and contains sodium hydroxide. There total effluent discharged to the crib is questionable, due to the fact that the discharge line plugged shortly after the crib became active.

Code: 216-T-34 **Classification:** Accepted

Names: 216-T-34; 216-T-34 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1967

Description: The site is a crib posted with "Underground Radioactive Material" signs. The crib's piping consists of perforated vitrified clay pipe rectangular loop, and a vitreous clay pipe extending into the center of the crib. The piping rests on a layer of gravel. Two gage well risers and one filter riser are visible from the surface.

Location: This site is located northwest of the 221-T Building, on the east side of the 216-T-35 Crib.

Process Description: This site provided subsurface liquid disposal for waste from the 340 Building in the 300 Area. The waste was transported to 200 West Area in railroad tank cars and 5000 gallon tank trucks.

Related Sites/ Structures: The crib is associated with the 340 waste facility located in the 300 Area. This crib also had an associated railcar unloading station (200-W-21). The pipeline from the railcar unloading station to the 216-T-34 crib is sitecode 200-W-196-PL. The pipeline from the truck unloading station to the crib is sitecode 200-W-198-PL.

Waste Type: Process Effluent

Waste Description: The site received liquid 300 Area laboratory waste from the 340 Facility. The waste was low in salt, neutral to basic, and contained nitrate.

Code: 216-T-35 **Classification:** Accepted

Names: 216-T-35; 216-T-35 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1967

Status: Inactive **End Date:** 1/1/1968

Description: The site is a surface stabilized crib that is marked and posted with Underground Radioactive Material signs. The crib was constructed with one perforated drain line, and one perforated crib waste distribution line, in parallel. Both lines were placed horizontally below grade and covered by gravel. The crib has two gage well risers and one vent riser visible from the surface.

Location: This site is located west of the 221-T Building and west of the 216-T-34 crib.

Process Description: This site provided subsurface liquid disposal for waste from the 340 Building in the 300 Area. The 216-T-35 crib replaced the 216-T-34 crib. The drain line from the unloading station (200-W-21) was extended to the 216-T-35 crib distributor pipe. The 216-T-34 crib drain line was blanked. Waste was transported from the 340 facility in railroad tanker cars and 19,000 liter (5,000 gallon) tank trucks.

Related Sites/ Structures: W-21) and the 216-T-34 crib. The pipeline associated with this crib is 200-W-197-PL. The pipeline from the truck unloading station is 200-W-198-PL.

Waste Type: Process Effluent

Waste Description: The crib received waste from the 300 Area laboratory facilities via railroad tank cars and tank trucks. The site waste contained nitrate.

Code: 216-T-36

Classification: Accepted

Names: 216-T-36; 216-T-36 Crib

Reclassification: None

Type: Crib

Start Date: 1/1/1967

Status: Inactive

End Date: 1/1/1973

Description: The site consists of a interim stabilized crib posted as "Underground Radioactive Material". The site consists of a single vitreous clay distribution pipe resting in a gravel layer that is in a rectangular trench. Backfill covers the pipe and gravel. The crib also has a gage well riser and a filter riser.

Location: The site is located southwest of the 241-T Tank Farm and south of the 216-T-7 Tile Field.

Release Description: The May 2000, the Dyncorp Integrated Site Vegetation and Animal Control (ISVAC) Priority List and the Contamination Zone map identified a long, narrow area of posted contamination adjacent to the east end of the 216-T-36 Crib (#12 on their list). The posted area appears to be located over the buried pipeline that fed the crib. (See WIDS 200-W-79-PL).

Process Description: This site provided subsurface liquid disposal for steam condensate, equipment decontamination waste, and miscellaneous waste from the 221-T and 221-U Buildings. It also received decontamination waste from the 2706-T Building.

Related Sites/ Structures: The associated structures are the 221-T, 221-U, 2706-T Buildings and the 241-T-151 Diversion Box. The pipelines associated with this crib is 200-W-79-PL and 200-W-130-PL.

Waste Type: Process Effluent

Waste Description: The site received steam condensate, equipment decontamination waste, and miscellaneous waste from the 221-T, 221-U and the 2706-T buildings. Some waste contained sodium hydroxide.

Code: 241-T-361

Classification: Accepted

Names: 241-T-361; 241-T-361 Settling Tank; 361-T-TANK; IMUST; Inactive Miscellaneous Underground Storage Tank

Reclassification: None

Type: Settling Tank

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1951

Description: The 241-T-361 Tank is enclosed with light post and chain and concrete AC-540 markers. The underground tank is posted with Inactive Miscellaneous Underground Storage Tank and Underground Radioactive Material signs

Location: The tank is located southwest of the 221-T Building and north of 23rd Street. It is adjacent to the 216-T-6 Cribs.

Process Description: The 241-T-361 Settling Tank received radioactive contaminated liquid from the 221-T and 224-T Buildings. The tank discharged to the 216-T-3 Reverse Well during 1945 and 1946. When the reverse well was abandoned, the settling tank discharge was directed to the 216-T-6 Cribs.

The 241-T-361 Settling Tank was deactivated in June 1951. Settling Tank 241-T-361 is cylindrical and is made of reinforced, pre-stressed concrete. The tank is located underground for shielding purposes.

Related Sites/ Structures: The settling tank is associated with the 216-T-3 Reverse Well, 216-T-6 Cribs and the 221-Tand 224-T facilities. The pipeline from 224-T that fed the reverse well via the 241-T-361 tank is sitecode 200-W-226-PL.

Waste Type: Storage Tank

Waste Description: The tank received waste from 221-T and 224-T. Sludge samples taken in 1976 contained 23 micrograms of plutonium, 12 microcuries per gram of strontium-90 and 67.6 microcuries per gram of cesium-137. The liquid supernate contained 3.71 microcuries per gallon of cesium-137 and 14.5 milligrams per gallon of plutonium.

Code: 207-U

Classification: Accepted

Names: 207-U; 207-U Retention Basin

Reclassification: None

Type: Retention Basin

Start Date: 1/1/1952

Status: Active

End Date:

Description: The unit is a plastic lined concrete basin divided into two equal halves, with a capacity of 3.785E+06 liters (1E+06 gallons). The basin structure is posted as a Contamination Area. The bottom dimensions for each basin are 32 by 32 meters (106 by 106 feet). The total overall dimensions at the top ledge 75 by 38 meters (246 by 123 feet), 2 meters deep (6.5 feet). There is an inlet structure on the east and an outlet structure on the west side, on the outside of the basins. Each basin has a 0.9 by 0.9-meter (3 by 3-foot) sump. There is also a sampler cabinet and a sample vault on the east side of the basins near the inlet structure. There are two unplanned release sites (UPR-200-W-111 and UPR-200-W-112) adjacent to the basin where sludge was removed and buried. These burial sites are located within 3.1 meters (10 feet) of the basin on the north side and on the south side, near the western corners. An unused sampler cabinet is located on the east side of the basin, as well as a sample vault that is a confined space.

Location: The site is located inside 200 West Area, west of 221-U Building, north of 16th Street, and east of the 241-U Tank Farm.

Release Description: Occurrence Report 86-46 states that on August 6, 1986, 2365 liters (625 gallons) of recovered nitric acid, containing 39 kilograms (86 pounds) of uranium was discharged through the chemical sewer to the 207-U retention Basin. Prior to the discovery of the release, the outlet valves on the retention basin were open to the 216-U-14 Ditch. The acid released to the ditch was greatly diluted with the 300 gallon per minute flow of cooling water from the 224-U facility being processed through the chemical sewer system. The Hanford Site Waste Management Units Report (1987) reported different release values. It states that approximately 3,000 liters (796 gallons) of 50% reprocessed nitric acid was released to the basin and subsequently to 216-U-14 Ditch. The total release to the environment consisted of approximately 102,000 kilograms (225,000 pounds) of corrosive solution (pH less than 2.0) and 45.4 kilograms (100 pounds) of uranium.

Process Description: Currently, the basin receives stormwater runoff from the 224-U Building and grounds. The outlet was plugged so that the basins would serve as an evaporation pond for the stormwater it receives. During the Uranium Trioxide (UO₃) facility deactivation, the trench that runs between 224-UA and 224-U was tied into the 207-U retention basin pipeline to route the stormwater buildup from the contaminated zones on the backside of the facility to the 207-U Basins for solar evaporation. The basin outlets have been isolated with concrete. The stormwater accumulating in the basin is allowed to evaporate. The Hanford Operational Environmental

Monitoring Program will continue to monitor the air and soil in the vicinity of the basins to meet requirements stated in the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for monitoring of diffuse and fugitive sources. Originally, the basin received chemical sewer waste from the 221-U Building and cooling water from the 224-U Building. The water was held in the basin, sampled, and then discharged to the 216-U-10 Pond via the 216-U-14 Ditch.

Related Sites/ Structures: There is an inlet structure on the east and an outlet structure on the west side, on the outside of the basins. Each basin has a 0.9 by 0.9-meter (3 by 3-foot) sump. There is also a sampler cabinet and a sample vault on the east side of the basins near the inlet structure. The chemical sewer pipeline that fed the basin is sitecode 200-W-192-PL. The outlet pipe to the 216-U-14 ditch is sitecode 200-W-222-PL.

Waste Type: Steam Condensate

Waste Description: Until 1972, the unit received steam condensate and cooling water from 224-U Building and chemical sewer waste from the 221-U Building. After 1972, the unit has received only cooling water from 224-U Building. The basin was temporarily replaced by 216-U-16 Crib (1984 through 1986) but was reactivated when 216-U-16 Crib was taken out of service. The effluent from the basin was discharged to the 216-U-10 Pond via the 216-U-14 Ditch until the basin outlet was plugged in 1994. Presently, the basin is receiving storm water run off from the 224-U building. The water is allowed to evaporate in the basin.

Code: 216-U-1&2 **Classification:** Accepted

Names: 216-U-1&2; 216-U-2; 216-U-3; 216-UR #1&2 **Reclassification:** None
Cribs; 361-WR (Crib 2); 216-U-1; 216-U-1 & 2

Type: Crib **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1967

Description: The crib area has been surface stabilized with clean dirt. The wood timber cribs are co-located in a common Underground Radioactive Material area. Each crib is delineated with posts and chain with Cave-In Potential signs.

Location: The site is north of 16th Street, west of 221-U and east of the 207-U Retention Basin.

Release Description: See UPR-200-W-19 and Unusual Occurrence 85-17.

Process Description: The cribs received overflow from the 241-U-361 Settling Tank. The tank received cell drainage from the 5-6 tank in 221-U and waste from the 224-U Building until the Uranium Recovery process operations shut down in 1957. From July 1957 through May 1967, the 216-U-1&2 Cribs received waste from the 224-U Facility and equipment decontamination waste and reclamation waste from the 221-U canyon. The cribs are two wooden structures that operated in series.

Related Sites/ Structures: The cribs are associated with the 241-U-361 Settling Tank, UPR-200-W-19, the 224-U Building and 221-U Building. The pipeline associated with this crib is 200-W-194-PL.

Waste Type: Process Effluent

Waste Description: From March 1952 to June 1957, the site received cell drainage from Tank 5-6 (221-U Building) and waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank. From June 1957 to July 1957, the site received waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank and contaminated solvent from the 276-U Settling Tank Solvent Storage area. The discharge of 221-U waste was discontinued during shutdown of production operations. From July 1957 to May 1967, the site received waste from the 224-U

Building and equipment decontamination and reclamation wastes from Chemical Processing Division (CPD) Services Operations in the 221-U Building canyon. Crib 2 was deactivated in May 1967. The waste is low in salt and is neutral to basic.

Code: 216-U-3 **Classification:** Accepted

Names: 216-U-3; 216-U-3 French Drain; 216-U-11 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1955

Description: This site consists of a french drain with light steel posts and chain with "Underground Radioactive Material" signs. The drain is a 3.6 meter (12 foot) deep, 1.8 meter (6 foot) diameter, rock-filled excavation with sloping sides and a 10 centimeter (4 inch) diameter vent riser.

Location: This site is located south of the 241-U Tank Farm on the south side of 16th Street.

Process Description: This site received condensate from the steam condensers on the 241-U-104 and 241-U-110 Tanks. Most reference documents mention this site receiving waste from 241-U-110, but drawing H-2-44004 also shows the 241-U-104 tank having a condenser that is attached to the same pipeline as the 241-U-110 tank.

Related Sites/Structures: The french drain is associated with the 241-U-104, 241-U-110 Tanks and the 200-W-169-PL pipeline.

Waste Type: Steam Condensate

Waste Description: This 216-U-3 crib received condensate from the steam condensers on the 241-U-104 and 241-U-110 tanks. The 241-U-104 and 241-U-110 tanks held REDOX boiling waste. The site waste contains nitrate. The closed loop cooling water for the condensers was discharged to the 216-U-14 ditch.

Code: 216-U-4 **Classification:** Accepted

Names: 216-U-4; 216-U-4 Dry Well; 222-U Dry Well; 222-U-110 Dry Well; 216-U-2 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/1955

Description: This site consists of a deactivated reverse well. The well consists of pipe sunk into the ground with the bottom 8 meters (25 feet) of pipe perforated. The end of the pipe is nearly closed by flattening. The site is marked with a small cement cover and a bronze medallion. It is posted as "Underground Radioactive Material".

Location: This site is located at the southwest corner of the 222-U Building.

Process Description: The site received acidic decontamination waste containing fission products from the 222-U Laboratory hood sinks.

Related Sites/Structures: The site is associated with the 222-U Building.

Waste Type: Process Effluent

Waste Description: RHO-CD-673 states that both plutonium and fission products were discharged to the site from laboratory hoods and sinks. The site waste contains nitrate. A limited field investigation of

high-priority waste units was conducted from August 1993 through August 1994. This site was included in that investigation. DOE/RL-95-13 includes information related to characterization borehole 299-W19-98 that was drilled between 216-U-4 and 216-U-4A. Cesium-137, cobalt-60 and europium-154 were identified.

Code: 216-U-4A **Classification:** Accepted

Names: 216-U-4A; 216-U-4 Dry Well; 216-U-4 Reverse Well Replacement French Drain **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1970

Description: This site is a french drain that is posted "Underground Radioactive Material". The drain consists of a vertically set concrete pipe. The drain rests on undisturbed soil and is not gravel filled. The top of the drain is painted yellow and has a removable lid.

Location: This site is located at the southwest corner of the 222-U Building.

Process Description: From July 1955 to January 1965 the site received acidic decontamination waste containing fission products from hood sinks in the 222-U. Waste flowed to the 216-U-4A French Drain via the overflow line from the 216-U-4 Reverse Well. From January 1965 to July 1970 the site received Pacific Northwest Laboratory operations decontamination waste from a hood sink in the 222-U Building.

Related Sites/Structures: The site is associated with the 222-U Building and the 216-U-4 Reverse Well.

Waste Type: Process Effluent

Waste Description: The site waste contains nitrate, phosphate, and sodium. RHO-CD-673 states that both plutonium and fission products were discharged to the site from laboratory hoods and sinks. A limited field investigation of high-priority waste units was conducted from August 1993 through August 1994. DOE/RL-95-13 includes information related to characterization borehole 299-W19-98 that was drilled between 216-U-4 and 216-U-4A. Cesium-137, cobalt-60 and europium-154 were identified.

Code: 216-U-4B **Classification:** Accepted

Names: 216-U-4B; 216-U-4B Dry Well; 216-U-4B French Drain **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1970

Description: The site consists of a french drain that is under a cement pad. A one inch diameter stainless steel vent riser extends approximately 1.2 meters (4 feet) above the surface. It is posted with "Underground Radioactive Material" signs.

Location: This site is located on the southeast side of the 222-U Building.

Process Description: From January 1960 to July 1970 the site received waste from a hot cell and hood in the 222-U Building. From January 1965 to July 1970, the site received waste from hoods and hot cells in 222-U from Pacific Northwest Laboratory work.

Related Sites/Structures: The site is associated with the 222-U Building.

Waste Type: Process Effluent
Waste Description: From January 1960 to July 1970 the site received waste from a hot cell and hood in the 222-U Building. From January 1965 to July 1970 the site received hot cell and hood waste from Pacific Northwest Laboratory experiments conducted in 222-U. The site waste contains nitrate.

Code: 216-U-5 **Classification:** Accepted
Names: 216-U-5; 221-U Cold U Trench #2; 216-U-4 **Reclassification:** None
Type: Trench **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1952

Description: This site consists of a backfilled trench that is posted "Underground Radioactive Material".

Location: The site is located northwest of the 221-U building.

Process Description: This site was used as liquid disposal site for unirradiated uranium waste from the cold start-up run at 221-U.

Related Sites/ Structures: The site is associated with the 221-U building and the 216-U-6 trench.

Waste Type: Process Effluent
Waste Description: This site received liquid unirradiated uranium waste from the cold start-up run at 221-U. The waste contained 200 kilograms of nitrate.

Code: 216-U-6 **Classification:** Accepted
Names: 216-U-6; 221-U Cold U Grave #1; 221-U Cold U Trench; U Facility Unirradiated Uranium Waste Trench; 216-U Cold U Trench #1; 216-U-5 **Reclassification:** None
Type: Trench **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1952

Description: This site consists of a backfilled trench that is posted "Underground Radioactive Material".

Location: The site is located northwest of the 221-U building.

Process Description: This site was used as liquid disposal site for unirradiated uranium waste from the cold start-up run at 221-U.

Related Sites/ Structures: The site is associated with the 221-U building and the 216-U-5 trench.

Waste Type: Process Effluent
Waste Description: In March 1952, the site received liquid, unirradiated uranium waste from the cold start-up run at 221-U. The waste included 200 kilograms of nitrate.

Code: 216-U-7 **Classification:** Accepted
Names: 216-U-7; 221-U Counting Box French Drain; 221-U Vessel Vent Blower Pit French Drain **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1952

Description: The french drain is within a larger area that has been stabilized and posted with Underground Radioactive Material signs. This drain is constructed of a concrete pipe set vertically into the ground. Gravel fills 1.1 meters (3.5 feet) of the pipe.

Location: This site is located on the southeast side of the 221-U Building near Section 6. It is northwest of the 241-UX-154 Diversion Box .

Process Description: This site received liquid wastes from a counting box floor drain during the metal recovery program at the 221-U Building.

Related Sites/ Structures: The site is associated with the 221-U Building, UPR-200-W-162 and UPR-200-W-138. The pipeline from the counting box to the french drain is sitecode 200-W-217-PL.

Waste Type: Process Effluent

Waste Description: The site received liquid wastes from a counting box floor drain during the metal recovery program. The site waste contains nitrate. Due to UPR-200-W-138, it is assumed that 13 kilograms (30 pounds) of uranium in uranyl nitrate hexahydrate (UNH) solution were also introduced to the soil through the 216-U-7 French Drain. However, the release associated with UPR-200-W-138 may be associated with a different french drain. The release information is vague. It is possible the event effected the 216-U-7 French Drain if sufficient liquid volume was released to the surface to flow southward and reach the 216-U-7 French Drain location.

Code: 216-U-8	Classification: Accepted
Names: 216-U-8; 216-U-9; 216-WR-1,2,3 Cribs	Reclassification: None
Type: Crib	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1960

Description: The site is marked and posted with Underground Radioactive Material signs. The site consists of three wood timber cribs set in series. Each crib is 4.9 by 4.9 by 3.0 meters deep (16 by 16 by 10 feet deep). The cribs were filled with 1.3-centimeter (0.5-inch) crushed stone to the tops of the wooden structures. There is roughly 2,070 cubic meters (73,000 cubic feet) of gravel fill in the cribs. The cribs were fed by a vitrified clay pipeline.

Location: The site is located west of Beloit Avenue and south of 16th Street.

Process Description: The cribs received acidic process condensate from the 221-U and 224-U buildings along with drainage from the 291-U stack via an underground vitrified clay pipeline.

Related Sites/ Structures: The site is associated with 216-U-12, 200-W-42, the 221-U and 224-U Buildings and the 291-U Stack

Waste Type: Process Effluent

Waste Description: The site received process condensate from 221-U and 224-U Buildings and the 291-U Stack drainage. The waste is acidic.

Code: 216-U-12	Classification: Accepted
Names: 216-U-12; 216-U-12 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1960
Status: Inactive	End Date: 1/1/1988

Description: The site is marked and posted with Underground Radioactive Material. The bottom of the crib was filled with approximately 264 cubic meters (9,320 cubic feet) of gravel. A perforated 30-

centimeter (12-inch) vitrified clay pipe runs horizontally the length of the unit below grade.

Location:	The crib is located south of 16th Street and west of Beloit Avenue. It is south of the 216-U-8 crib.
Process Description:	The 216-U-12 Crib was built in 1960 to replace the 216-U-8 Crib when it showed signs of cave-in potential. 216-U-12 was operational until 1988, when the pipeline was cut and capped. The 216-U-12 Crib was replaced by the 216-U-17 Crib.
Related Sites/Structures:	The crib is associated with 216-U-8, the 224-U facility, 291-U stack and site code 200-W-42 (VCP pipeline).
Waste Type:	Process Effluent
Waste Description:	From April 1960 to May 1967, the site received 291-U-1 Stack drainage, 241-WR Vault waste (aka 244-WR vault), and 224-U process condensate via the C-5 Tank. Contaminated water from the 241-WR Vault was discharged to the crib in October 1965 that included 3.14 kilograms (6.9 pounds) of thorium. From May 1967 to September 1972, the site received the above wastes (excluding the 241-WR Vault waste) and occasional waste via the C-7 Tank in the 224-U building. From September 1972 to November 1981, the site was taken out of service. From November 1981 to January 1987, the site received corrosive process condensate (corrosive: [D002] typical pH range is 0.5-1.5) from the 224-U building. The crib also received miscellaneous storm drain wastes from 224-U building. Between April 1960 and September 1972, 6.7 E5 kilograms of nitrate was released to the crib from the Uranium Tri-Oxide process.

Code:	216-U-13	Classification:	Accepted
Names:	216-U-13; 216-U-13 Cribs; Vehicle Steam Cleaning Pit	Reclassification:	None
Type:	Trench	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1956
Description:	This site consisted of two trenches of equal dimensions. The trenches were sloped so that vehicles could be driven down to the decontamination station at the bottom. The two trenches are no longer marked or posted. Some debris is visible in the area. The area is not level. Many deep gullies are located in the area west of the 241-U Tank Farm.		
Location:	This site was located west of the 241-U Tank Farm.		
Process Description:	The site received drainage from equipment steam cleaning and decontamination activities done inside the trenches. The pits were used mainly to decontaminate trucks and cranes bearing low levels of radioactive contamination. Several large pumps used in the Uranium Recovery process were also cleaned here, but the residue was scraped and taken to the 200 West Burial Grounds.		
Waste Type:	Water		
Waste Description:	The site used steam and water hoses to remove radioactive contaminants from vehicles, equipment and pumps from the Uranium Recovery operation. The site waste may include traces of detergent and nitric acid.		

Code:	216-U-14	Classification:	Accepted
Names:	216-U-14; 216-U-14 Ditch; Laundry Ditch	Reclassification:	None
Type:	Ditch	Start Date:	1/1/1944

Status:	Inactive	End Date:	1/1/1995
Description:	The entire ditch has been backfilled and surface stabilized. It is posted as Underground Radioactive Material.		
Location:	The ditch originated west of the 284-W Powerhouse, west of Bridgeport Avenue. It extended southward, terminating at the 216-U-10 Pond.		
Release Description:	Occurrence Report 86-46 states that on August 6, 1986, 2365 liters (625 gallons) of recovered nitric acid, containing 39 kilograms (86 pounds) of uranium was discharged through the chemical sewer to the 207-U retention Basin. Prior to the discovery of the release, the outlet valves on the retention basin were open to the 216-U-14 Ditch. The acid released to the ditch was greatly diluted with the 1140 liter (300 gallon) per minute flow of cooling water from the 224-U facility being processed through the chemical sewer system. The outlet valves from the retention basin were closed shortly after the discovery of the release and the remainder of the acid release was contained in the retention basin. The effluent in the retention basin was neutralized with 270 kilograms (600 pounds) of sodium carbonate. The Hanford Site Waste Management Units Report (1987) reported different release values. It stated approximately 3000 liters (796 gallons) of 50% reprocessed nitric acid was released to the unit. The total release to the environment consisted of approximately 101,250 kilograms (225,000)pounds of corrosive solution (pH less than 2.0) and 45.4 kilograms (100 pounds) of uranium.		
Process Description:	The 216-U-14 ditch was excavated in 1944 and was the original effluent route to the 216-U-10 Pond. It received powerhouse waste water, laundry waste water (until 1981) via 200-W-102 Pipeline, and steam condensate and cooling water from 221-U, 224-U and the 242-S Evaporator. Near the head end of the ditch, a 0.6 meter (2 foot) diameter pipe allowed 284-W Powerhouse and laundry effluent to flow under 19th Street and connect to the main portion of the ditch. The ditch also had a 1.22 meter (4 foot) diameter culvert that allowed effluent to flow under 16th Street to the portion of the ditch located north of the 242-S Evaporator and also flowed under Cooper Ave. to terminate at 216-U-10 Pond.		
Related Sites/ Structures:	The ditch is associated with the 284-W Powerhouse, 2723-W (old laundry facility), 2724-W (new laundry facility), 221-U, 224-U, 271-U the 242-S Evaporator building and the 241-U-110 tank. The 200 West Area Powerhouse Pond was constructed over the location of the head end of the 216-U-14 Ditch. The direct pipeline from 221-U is 200-W-84-PL. The pipeline from 2724-W is 200-W-102-PL. A pipeline from 241-U tank farm to the 216-U-14 ditch is sitecode 200-W-168-PL. The outlet pipe from 207-U is sitecode 200-W-222-PL. The effluent discharge pipe from 242-S Evaporator to the 216-U-14 ditch is sitecode 200-W-223-PL.		
Waste Type:	Process Effluent		
Waste Description:	From 7/44 to 9/44, the site received wastewater from the 284-W Powerhouse. From 9/44 to 1/50, the same plus waste from 2723-W (original laundry and mask cleaning station). From 1/50 to 3/52, received wastewater from 284-W and 2724-W Laundry Building (new laundry facility). From 3/52 to 5/54, the same plus chemical sewer waste from 221-U and cooling water from 224-U. From 5/54 to 8/55, the same plus cooling water from 241-U-110 condenser tank. From 8/55 to 11/73, the same plus 271-U cooling water. From 11/73 to 4/80, the same plus 242-S Evaporator condensate and cooling water. From 4/80 to 9/81, the same minus 242-S condensate, 2723-W and 2724-W waste. From 9/81 to 7/84, the same minus 221-U, 224-U, and 271-U waste. The 221-U and 224-U effluent entered the ditch after passing through the 207-U Retention Basin. The 216-U-16 crib was built in 1984 to accept 224-U effluent that had previously been discharged to the ditch. However, the 216-U-16 crib failed in 1985. Some 224-U effluent was diverted back to the 216-U-14 Ditch until November 1994, when the outlet pipe to the 207-U Retention Basin was permanently isolated and filled with concrete. The portion of the ditch, located west of Cooper Ave., received effluent from the 242-S Evaporator and remained active until April 1995. Discharge from the 242-S Evaporator was eliminated in 1995 ending all discharges to this unit.		

The Following Sites Were Consolidated With This Site:**Code:** 200-W PP**Names:** 200-W PP; 284-W-B; 200 West Powerhouse Ponds; 200-W Powerhouse Pond**Code:** 216-U-15**Classification:** Accepted**Names:** 216-U-15; 388-U Tank Dumping; U-152 Interface Crud Burial; UN-200-W-158; UN-216-W-10; UPR-200-W-125**Reclassification:** None**Type:** Trench**Start Date:** 1/1/1957**Status:** Inactive**End Date:** 1/1/1957**Description:** The site is the result of a deliberate discharge of liquid waste into a hole in the ground. No surface markers exist to identify the exact location of this waste unit. Originally, the site was delimited by a wooden fence and posted with Underground Contamination signs. The perimeter fence and all identification markings of this site were removed in 1971.**Location:** The site was located west of the 271-U Building and north of 16th Street.**Process Description:** Approximately 26,500 liters (7000 gallons) of material was discharged via an overground pipeline. The hole was backfilled and the piping was removed after the transfer was completed. HW-50584 indicates conflicting information. The May 1957 monthly report states that 79,494 liters (21,000 gallons) of organic solution (RAX) was originally scheduled to be transferred to the PUREX plant, but was buried because it was found to be incompatible with the PUREX process. The material was buried, with minor ground contamination occurring when the overground line used to transport the material from 276-U leaked. One 8 inch culvert was replaced and the contaminated ground was dug up and buried.**Related Sites/ Structures:** The 216-U-15 Trench was associated with the 388-U Tank and the 276-U Solvent Storage Area.**Waste Type:** Chemicals**Waste Description:** This site received 26,500 liters (7,000 gallons) of waste from the 388-U Tank in the 276-U Solvent Building. The waste consisted of interface crud, activated charcoal, and diatomaceous earth containing approximately 1 curie of fission products.

HW-50584 indicates conflicting information. The May 1957 monthly report states that 79,494 liters (21,000 gallons) of organic solution (RAX) was originally scheduled to be transferred to the PUREX plant, but was buried because it was found to be incompatible with the PUREX process.

The Following Sites Were Consolidated With This Site:**Code:** UPR-200-W-125**Names:** UPR-200-W-125; 216-U-15; UN-200-W-125; UN-216-W-10**Code:** 216-U-16**Classification:** Accepted**Names:** 216-U-16; UO3 Crib**Reclassification:** None**Type:** Crib**Start Date:** 1/1/1984**Status:** Inactive**End Date:** 1/1/1987**Description:** The crib is identified with concrete AC-540 markers and is posted with Underground Radioactive Material signs.

Location: 224-U Building.

Process Description: The crib was activated on July 20, 1984. The 216-U-16 crib was built to receive waste from the 224-U Uranium Oxide Processing Facility. The crib is constructed of two header pipes, 20 centimeters (8 inch) reducing to 15 centimeters (6 inch) that are located 0.9 meters (3 feet) above the crib bottom, running the length of the unit, one on each side. At each end of the pipe is a 15 centimeter (6 inch) vent pipe. Connecting the two header pipes were twenty-two 10 centimeter (4 inch) perforated pipes running the width of the unit, equally spaced, 0.9 meters (3 feet) above the bottom. Each header pipe has a 10 centimeter (4 inch) vent riser. An acid resistant distribution box is located at the crib inlet (northeast edge). A short pipeline connected the crib to the existing VCP Process Sewer line. In July 2000, the vent risers were sealed and cut off below grade. There are three gage wells, one near the north and south ends and one near the center. The bottom is filled with 1.5 meters (5 feet) of gravel. Covering the gravel is a reinforced polyethylene liner extending 2.4 meters (8 feet) up the sides of the excavation,. The crib structure has been backfilled over to grade. A 15 centimeter (6 inch) subdrainage pipe runs the width of the unit at the west side.

Related Sites/ Structures: The crib is associated with the 224-U and the 221-U facilities and the 216-U-14 ditch. The pipeline that feeds this crib is sitecode 200-W-170-PL.

Waste Type: Process Effluent

Waste Description: The site received 224-U steam condensate, 224-U chemical sewer waste, 271-U compressor cooling water, 221-U chemical sewer waste, and 224-U process condensate.

Code: 216-U-17	Classification: Accepted
Names: 216-U-17; 216-U-17 Crib	Reclassification: None
Type: Crib	Start Date: 1/1/1988
Status: Inactive	End Date: 1/1/1994

Description: The crib is marked and posted with Underground Radioactive Material signs.

Location: The crib is located south of 16th Street and east of Beloit Ave. inside the 200 West Area. It is southeast of the 221-U facility.

Process Description: The crib was built to replace the 216-U-12 cribs. The crib received effluent from the 224-U building process condensate from the conversion of urynal nitrate hexahydrate (UNH) to Uranium Tri-oxide (UO₃) through the calcining operations. Effluent flow was evenly distributed over the entire unit from the distribution line lying in an aggregate field with a PVC vapor barrier. The site footprint is 70 meters by 26 meters (230 feet by 86 feet). The stormwater runoff from the 224-U facility was rerouted to the 207-U basins.

Related Sites/ Structures: The crib is associated with the 224-U facility and the 200-W CSLA. The pipeline associated with the crib is sitecode 200-W-195-PL.

Waste Type: Process Effluent

Waste Description: The unit received 224-U process condensate. A neutralization system was placed into operation before startup of this crib to preclude the discharge of process condensate outside the range of 2.0 to 12.5 pH.

Code: 241-U-361	Classification: Accepted
Names: 241-U-361; 241-U-361 Settling Tank; 361-U-TANK; IMUST; Inactive Miscellaneous	Reclassification: None

Underground Storage Tank**Type:** Settling Tank **Start Date:** 1/1/1951**Status:** Inactive **End Date:** 1/1/1967**Description:** The 241-U-361 Tank is an underground settling tank constructed of reinforced concrete. The 216-U-1&2 Cribs and the 241-U-361 Settling Tank are co-located within a common radiologically controlled area. It is posted with Underground Radioactive Material (URM). Due to the 1953 release, the surface surrounding the settling tank has been covered with shotcrete. The tank is posted with Inactive Miscellaneous Underground Storage Tank (IMUST) signs.**Location:** The 241-U-361 Settling Tank is located southwest of 221-U, north of 16th Street.**Process Description:** The tank received cell drainage from the 5-6 tank in 221-U and waste from the 224-U building until the Uranium Recovery operations shut down in 1957. From July 1957 through May 1967, the 216-U-1&2 Crib system received waste from the 224-U facility and equipment decontamination waste and reclamation waste from the 221-U canyon via the 241-U-361 tank. The waste flowed through the 241-U-361 settling tank and then to the 216-U-1 and 2 cribs, located 26 meters (85 feet) west, via an underground pipe.**Related Sites/ Structures:** This unit is associated with the 221-U building, UPR-200-W-19 and the 216-U-1 and 216-U-2 Cribs. The pipeline to the tank is sitecode 200-W-193-PL. The pipeline from the tank to the 216-U-1 and 2 cribs is sitecode 200-W-194-PL.**Waste Type:** Process Effluent**Waste Description:** The tank received radioactively contaminated liquid from U Plant. It is presently estimated to contain 104,100 liters (27,500 gallons) of sludge with an unknown plutonium content. Sample data collected in 1976 estimated the tank contained 760 curies of strontium-90, 1365 curies of cesium-137, 69,000 kilograms of uranium and less than one gram of plutonium.

Code: 200-W-1 **Classification:** Accepted**Names:** 200-W-1; REDOX Mud Pit West **Reclassification:** None**Type:** Mud Pit **Start Date:****Status:** Inactive **End Date:****Description:** The site was originally described as a pit that is approximately 15.3 meters (50 feet) by 31 meters (100 feet). The surface of the area has the appearance of drilling mud, and has the typical surface that is left from evaporated or percolated liquid. Vegetation is absent from the area. The following observations were made during a field visit in August 1999. The site is in a shallow depression. It is difficult to discern the precise boundaries of the site because the general area appears to have been disturbed by heavy equipment. One section of the site is devoid of vegetation and appears to have some soil discoloration. West of this section is an area where the ground surface is broken up and sparsely vegetated. These two distinctive areas are surrounded by sparse to moderate vegetation cover, composed primarily of cheatgrass and tumbleweeds. An approximately 2.5 centimeter (1 inch) diameter rubber hose was seen near the west edge of the site and some lumber and a wooden stake were found at the unvegetated spot.**Location:** The site is located west of REDOX, outside the REDOX exclusion fence. It is north of 10th Street.**Related Sites/ Structures:** The site is associated with 200-W-17 and 200-W-18.**Waste Type:** Chemicals**Waste Description:** Site characterization is required for this site.

Description:

Code: 200-W-2 **Classification:** Accepted
Names: 200-W-2; REDOX Berms West **Reclassification:** None
Type: Spoils Pile/Berm **Start Date:**
Status: Inactive **End Date:**

Description: The majority of the area is level, with evidence of soil disturbance over several acres. The site consists of two bermed areas. One berm is approximately 1.5 meters (5 feet) high by 9.2 meters (30 feet) wide. The other berm is approximately 3.1 meters (10 feet) high and 15.3 meters (50 feet) wide. The berms are not marked or posted.

Location: The site is located northwest of the 202-S Facility, outside the REDOX exclusion area fenceline.

Waste Type: Soil

Waste Description: The wastes at this unit are unknown. Characterization studies need to be performed.

Description:

Code: 200-W-6 **Classification:** Accepted
Names: 200-W-6; 200-W Painter Shop Paint Solvent Disposal Area **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of contaminated soil. The soil was identified in 1993, while performing building modifications at the paint shop.

Location: The site is located inside 200 West Area, north of 19th Street and east of Bridgeport Ave. It is within the construction forces shop complex at the 2318W Annex (previously referred to as 15019 shop building).

Release Description: Soil within an excavation exhibited a strong solvent odor.

Process Description: The construction forces shop complex has been situated at this location for many years.

Description:

Waste Type: Chemicals
Waste Description: Paint solvents were routinely disposed of to the soil in this area prior to 1984, according to conversations with "old timers".

Code: 200-W-9 **Classification:** Accepted
Names: 200-W-9; Project W291 Excavation VCP Contamination **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1994
Status: Inactive **End Date:**

Description: The site is currently a gravel area with two metal caissons. The area is not marked or posted. The tops of the caissons are labeled MH T-1 and MH T-2.

Location: The site is located in 200 West Area, near the southeast corner of 221-T. It is 42 meters (138 ft) north of 23rd street.

Release Description: waste line from T-Plant to the 200 Area Treated Effluent Disposal Facility (project W291). The pipeline was left in the excavation.

Process Description: The old vitrified clay pipe is assumed to be a chemical sewer line associated with 221-T and 222-T.

Related Sites/ Structures: The 25 centimeter (10 inch) vitrified clay pipe (see 200-W-163-PL) carried chemical sewer effluent from 291-T, 222-T and 224-T to the 216-T-3 crib.

Waste Type: Demolition and Inert Waste

Waste Description: Chemical sewer, 3000 dpm beta/gamma on 100 cm² (15.5 in²) smear on the 10-in (25 cm) vitrified clay pipe. 5500 dpm direct reading.

Code: 200-W-11 **Classification:** Accepted

Names: 200-W-11; Concrete Foundation South of 241-S; S-Farm Foundation and Dump Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: A concrete foundation, small burn areas, bare areas and scattered debris are located south of 241-S Tank Farm.

Location: The site is north of 10th Street and west of Camden Ave., south of the 241-S Tank Farm.

Related Sites/ Structures: The site is possibly associated with the construction of the 241-SX, 241-SY, 241-S Tank Farms.

Waste Type: Misc. Trash and Debris

Waste Description: concrete foundation, small burn areas, bare areas, scattered debris (wire, weld rod, paint cans, oil cans, solvent cans, vehicle parts, cable, melted roofing material, glass, wood, pipe, rubber brick, metal, concrete)

Reported Date: April 4, 1995

Code: 200-W-12 **Classification:** Accepted

Names: 200-W-12; 201-W Soil Mound and Plastic Pipe **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a soil mound with one 0.76-meter (2.5-foot) above-ground plastic pipe and one 20-centimeter (8-inch) above-ground plastic pipe topped with tees and elbows. There are also insulated electrical wires and an electrical heat controller.

Location: The site is located northwest of 201-W and approximately 75 meters (246 feet) north of 13th Street and west of Albany Avenue.

Process Description: During the 1970's, the Atlantic Richfield (ARCO) and Rockwell Research Departments used this area for testing equipment and processes to support the waste management operations. This area was selected for testing because it was adjacent to the REDOX facility (where the Research Department offices were located) and because the area did not contain any contaminated facilities or vadose contamination.

Related Sites/ The site may be associated with other adjacent test sites. See 200-W-35 and 200-W-10.

Structures:

Waste Type: Equipment
Waste Description: The site consists of a soil mound (about 0.3-meter [1-foot] above grade) with one 0.76-meter (2.5-foot) above ground poly pipe and one 20-centimeter (8-inch) above ground poly pipe topped with tees and elbows. The site includes insulated wire and a heat controller. A below ground tank is suspected but unverified.

Code: 200-W-14 **Classification:** Accepted

Names: 200-W-14; 200 West Heavy Equipment Storage Area **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1995

Status: Inactive **End Date:**

Description: The site appears as a gravel parking lot. Several large, discolored areas were noted.

Location: The site is located northwest of the intersection of Bridgeport Ave. and 19th Street, in 200 West. It is near the 2713WB Maintenance Shop.

Process Description: The site was a heavy equipment (including cranes, forklifts, diesel generators, backhoes, vehicles) parking area with five or six large spots of petroleum contaminated soil. Contaminated soil is encountered down to a depth of 0.61 meters (2 feet) or more. During the 1995 site visit, the equipment continued to overflow and leak. No drip pans or containment were being used.

Related Sites/Structures: The site is associated with the building trades craft shops.

Waste Type: Oil
Waste Description: The soil at the site contains petroleum (oil, fuel, etc.) from leaky and overflowing (especially during hot weather) equipment (cranes, generators, front end loaders, forklifts, etc.).

Reported Date: May 7, 1995

Code: 200-W-21 **Classification:** Accepted

Names: 200-W-21; 204-T Unloading Station; T-Plant Waste Railcar Unloading Facility; Unloading Station 1 and Unloading Station 2 **Reclassification:** None

Type: Pump Station **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1968

Description: The unloading station consisted of two unloading platforms, Unloading Station 1 and Unloading Station 2. The platforms and piping from both stations were removed in 1996. The area has a short railroad siding extending from the main rail line into T-Plant. The concrete structure foundations remain and are posted with Underground Radioactive Material signs.

Location: The 204-T Unloading Station platform structures were located west of 221-T at the north end of the 216-T-34 crib.

Process Description: The platform structures were used to unload 300 Area liquid laboratory waste sent in railroad tanker cars from the 340 Facility. The waste was pumped into the adjacent 216-T-34 and 216-T-35 Cribs.

Related Sites/ Structures: The pipeline from Unloading Station 1 to the 216-T-34 crib is sitecode 200-W-196-PL. The pipeline from Unloading Station 2 to the 216-T-35 crib is sitecode 200-W-197-PL.

Waste Type: Equipment

Waste Description: The platform structures and equipment supported the unloading of liquid waste from the 300 Area into the 216-T-34 and 216-T-35 cribs.

Code: 200-W-22

Classification: Accepted

Names: 200-W-22; 203-S/204-S/205-S Stabilized Area

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1983

Description: The site consists of multiple consolidated sites. All above ground surface features have been removed. The site is currently posted as an Underground Radioactive Material Area (URMA). There are also two small, posted URMA's located under the abandoned steam line, on the south end of this site.

Location: The site is located northwest of the 202-S Facility.

Process Description: The 203-S, and 205-S Facilities were constructed in the early 1950's to process and decontaminate the uranyl nitrate hexahydrate (UNH) produced by Reduction Oxidation (REDOX) operations. The primary process unit consisted of a column filled with silica gel that removed traces of fission products from the UNH. The silica gel column (SG-1) was located in the underground 205-S Vault. The vault also contained a waste neutralization tank. Operations in the vault were accomplished remotely. The 205-S Facility was a two story, aboveground, chemical make-up building. It contained two chemical make-up tanks, a UNH sample room and extensive piping connected to the REDOX facility and the underground vault. The 203-S Facility was an aboveground UNH storage facility that consisted of two 19,000 liter (5,000 gallon) stainless steel tanks that were set in an open concrete basin. There was also a 204-S Tank Farm, that consisted of four 190,000 liter (50,000 gallon) above-ground tanks set in two open concrete basins. A UNH Unloading Facility was located at the adjacent railroad siding. An above-ground UNH pipeline connected the 203-S, 204-S, 205-S Area to the 224-U Facility. During the REDOX Plant operation, the UNH solution was pumped from REDOX to the 205-S silica gel column for purification. The purified UNH was stored in the 203 and 204 tanks and the routed to 224-U, via an above ground line, for final processing. The fission products left in the silica gel column were stripped out with nitric acid. The acid was neutralized and send to cribs. UNH from the PUREX Plant were transported by truck to the unloading station and placed in the 204-S tanks. The PUREX solutions were then processed through the silica gel column. After REDOX shut down (1965), the 203-S and 205-S were placed on standby. The Unloading Station was converted to a railcar unloading station. The 204-S tanks continued to store material from the Unloading Station. Shipments included thorium nitrate from PUREX, 100-N Reactor decontamination solutions and 300 Area Laboratory wastes. The thorium nitrate was stored in tanks 204-S-1, 204-2 and 204-3. After an extended storage time, the thorium nitrate was shipped to Fernald, Ohio. The 203-1, 203-2 and 203-3 tanks were flushed. Tank 204-S-4 tank was used to hold the 100-N Reactor and 300 Area wastes. Tank 4 was connected to the 240-S-151 Diversion Box so that waste could be transferred to tank farms. Substantial dose rates were associated with these shipments. Several feet of sludge built up in the bottom of tank 4 and increased the dose rate problem. Increasing dose rate issues and contamination spreads lead to the construction of an enclosed unloading facility in 200 East Area (204-AR) that opened in 1981 and replaced this outdoor unloading station at REDOX.

Related Sites/ Structures: The site is associated with the 203-S & 205-S UNH Processing Facilities, the REDOX UNH Unloading Facility and UPR-200-W-32, UPR-200-83, UPR-200-W-10, UPR-200-W-69, UPR-

200-W-86, UPR-200-W-116 and UPR-200-W-123.

Waste Type: Soil
Waste Description: Waste processed and stored in this area included contaminated UNH from REDOX and PUREX, Thorium Nitrate from PUREX, 100-N Reactor decontamination waste and 300 Area Laboratory waste. Radiological contaminants may be present in and around the remaining contaminated structures (cement basins and piping) that were not removed in the 1983 stabilization efforts.

The Following Sites Were Consolidated With This Site:

Code: 203-S & 205-S
Names: 203-S & 205-S; 203-S Uranyl Nitrate Hexahydrate Tank Farm; 204-S; 204-S Tank Farm & Pumphouse; 205-S Process Vault & Chemical Makeup Building; 205-S Stabilized Area; 205-S Uranyl Nitrate Hexahydrate Processing Facility; 203-S

Code: 200-W-23
Names: 200-W-23; 203-S and 205-S Underground Contaminated Zone

Code: UPR-200-W-10
Names: UPR-200-W-10; Contamination Spread at 203-S UNH Tanks; UN-200-W-10

Code: UPR-200-W-83
Names: UPR-200-W-83; Radioactive Spill Near 204-S Radiation Zone; UN-200-W-83; UN-216-W-82

Code: UPR-200-W-123
Names: UPR-200-W-123; 204-S Unloading Facility Frozen Discharge Line; UN-200-W-123

Code: 200-W-42	Classification: Accepted
Names: 200-W-42; 200-W-42-PL; U Plant Radioactive Process Sewer from 221-U to 216-U-8 & 216-U-12 Cribs	Reclassification: None
Type: Radioactive Process Sewer	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1988

Description: The majority of this pipeline was removed in 2006. The open excavation is marked with steel posts along the entire length. A portion of pipeline located north of 16th Street had been posted as a Soil Contamination Area until it was stabilized in October 2001. The section of pipeline located south of 16th Street to the 216-U-8 Crib was interim stabilized with 61 centimeters (2 feet) of soil and posted with AC-540 concrete posts in 1995. It was posted as an Underground Radioactive Material area. The contamination area south of 16th Street also described in sitecode UPR-200-W-163. The contamination area over the pipeline on the north side of 16th Street is considered a part of this pipeline site.

Location: The waste site is an underground pipeline that extends from the 221-U Building to the 216-U-8 and 216-U-12 Cribs. It is located west of Beloit Avenue. A portion of the pipeline is north of 16th Street, but the majority of it is located south of 16th Street.

Release Description: Over the years, growing contamination over the pipeline absorbed radioactive contamination. The posted contaminated area over the pipeline south of 16th Street was given the number UPR-200-W-163.

Process Description: The underground vitrified clay pipeline transferred process condensate from the 221-U and 224-U Buildings and the 291-U Stack to the 216-U-8 and 216-U-12 Cribs. The waste was acidic. The pipeline was originally connected to the 216-U-8 Crib which became active in 1952. The 216-U-12 Crib was built in 1960 to replace the 216-U-8 Crib when it showed potential signs of

cave-in. A WYE joint was made in the 216-U-8 Crib pipeline to reroute and extended the pipeline to the 216-U-12 Crib.

Related Sites/ Structures: The pipeline is associated with 221-U Building, 224-U Facility, 270-W, 291-U Stack, 216-U-8 Crib and 216-U-12 Crib, UPR-200-W-163 and 200-W-151-PL.

Waste Type: Process Effluent

Waste Description: From 1952 to 1960, the line transferred waste from 221-U, 224-U and 291-U to the 216-U-8 crib. The 216-U-12 crib replaced the 216-U-8 crib in 1960. The pipeline was extended further south to the 216-U-12 location. From April 1960 to May 1967, the pipeline received waste from the 291-U-1 Stack drainage, 241-WR Vault waste, and 224-U process condensate via C-5 Tank. Disposal of contaminated water from 241-WR Vault was accomplished in October 1965 and included 3.14 kilograms (6.9 pounds) of thorium. From May 1967 to September 1972, the site received the above wastes excluding the 241-WR Vault waste and occasional waste via the C-7 Tank in the 244-U Building. From September 1972 to November 1981, the site was taken out of service. After November 1981, the pipeline received process condensate (corrosive: typical pH range is 0.5-1.5) from the 224-U Building. In the past, this facility also received miscellaneous storm drain wastes from 224-U. A Limited Field Investigation was done in 1994 to characterize selected waste sites in the 200-UP-2 Operable Unit. Fourteen surface and subsurface soil samples along with four vegetation samples were collected to characterize the vitrified clay pipeline (VCP) leading to the 216-U-8 Crib. An attempt was made to determine if the contamination had spread laterally from the pipeline by digging holes with an auger rig where subsurface contamination had been identified. An increase in activity was noted at approximately 3 meters (10 feet). At a depth of 3.3 meters (11 feet) the auger was stopped by large cobbles. The samples were analyzed for cesium-137, strontium-90, gross alpha and gross beta. Specific sample data is documented in BHI-00033.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-163

Names: UPR-200-W-163; Contaminated Vegetation at the 216-U-8 Pipeline (200-W-42-PL); UN-216-W-33

Code: 200-W-51

Classification: Accepted

Names: 200-W-51; Septic Tank (Abandoned)

Reclassification: None

Type: Septic Tank

Start Date:

Status: Inactive

End Date: 1/1/1994

Description: The site is an abandoned septic tank that has been filled and covered. The septic tank was discovered during excavations (for exhauster upgrades) outside 241-SY Tank Farm. The tank is not marked or posted.

Location: The site is located north (and slightly east) of the 241-SY-101 tank, north of the 241-SY Tank Farm fence.

Waste Type: Sanitary Sewage

Waste Description: The waste is the heel remaining in an abandoned septic tank.

Code: 200-W-53

Classification: Accepted

Names: 200-W-53; UN-216-W-31; UPR-200-W-166

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: It was identified in 1994 resulting in approximately 155,706 square feet of land being marked and posted as a Soil Contamination Area (SCA). The contaminated soil was scraped and placed inside the 207-T Retention Basin. The scraped area is currently posted as an Underground Radioactive Material Area (URM).

Location: The site was a large area of posted soil contamination located east of the 207-T Retention Basin. The source of the contamination was assumed to be the 241-T Tank Farm and the 207-T Retention Basin. A small Underground Radioactive Material area surrounding well 299-W11-28, on the west side of the retention basin, is considered to be part of 200-W-53 also.

Release Description: Specks of contamination spread from the operation of 241-T Tank Farm on the wind.

Related Sites/Structures: The site is associated with the 207-T basin.

Waste Type: Soil

Waste Description: Contaminated soil specks were identified.

Code: 200-W-54

Classification: Accepted

Names: 200-W-54; Contamination Migration from 241-SX Tank Farm

Reclassification: None

Type: Contamination Migration

Start Date:

Status: Inactive

End Date:

Description: This site is an expanding area of contamination migration. A major radiological zone reduction activity was done in October 2011. Three and one half acres were covered with gravel and downposted to Underground Radioactive Material Area. The original unplanned release was defined in 1997. It was a large, irregular shaped Soil Contamination Area (SCA) located on the east side of 241-S/SX Tank Farms. In 1997, it measured approximately 175 meters (575 feet) by 100 meters (330 feet). Another Global Positioning Survey was done in 1998. The posted Soil Contamination Area had been extended approximately 50 meters (165 feet) to the west (up to the tank farm fence) and approximately 200 meters (660 feet) in the north-south direction. A site visit in August 2000 found multiple additional radiologically chained and posted areas in this vicinity. There is also one separately posted Contamination Area located north of 241-SY Tank Farm, across a gravel road. In 2009, contaminated rabbit feces were found outside the posted areas. Some areas of rabbit feces and specks were delineated and posted as a Contamination Area. The posted area size and shape varies with additional radiological surveys.

Location: The site is located east and north of the 241-S, SX, SY Tank Farm fence. It extends eastward to the west edge of the 216-S-9 Crib. The posted area size and shape varies often, with additional radiological surveys.

Related Sites/Structures: The site is associated with activity in the 241-S, SX and SY Tank Farms.

Waste Type: Soil

Waste Description: The posted soil contamination areas are the result of contamination migration out of the tank farms.

Code: 200-W-55

Classification: Accepted

Names: 200-W-55; Dumping Area North of 231-Z

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive **End Date:**

Description: The site consists of scattered debris approximately 10 feet in diameter inside the north end of a large depression. The site is not marked or radiologically posted.

Location: The site is located approximately 1/3 mile north of the 231-Z building.

Waste Type: Misc. Trash and Debris

Waste Description: The debris at the site included concrete rubble, wood, cans, pipes and rusted sheet metal.

Code: 200-W-63 **Classification:** Accepted

Names: 200-W-63; Contaminated Concrete Pad **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site was a "T" shaped concrete pad that had been posted with Surface Contamination Area signs. A site visit in September 1999 found the pad had been covered with gravel and reposted as Underground Radioactive Material.

Location: The pad is located approximately 180 meters (591 feet) northwest of 241-TY Tank Farm and 80 meters (262 feet) south of 23rd Street in 200 West Area.

Process Description: Employees who have worked in 200 West Area state the pad was used to store radiologically contaminated tanks in the late 1980's. The tanks were removed in 1991 and the pad was left posted as a Surface Contamination Area.

Waste Type: Equipment

Waste Description:

Code: 200-W-67 **Classification:** Accepted

Names: 200-W-67; Contaminated Soil at the Corner of Cooper and 16th Street **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1998

Status: Inactive **End Date:**

Description: The site is currently posted as an Underground Radioactive Material area.

Location: The site is located inside 200 West Area, east of the 16th Street and Cooper Ave. intersection. It is adjacent to the 216-U-3 Crib.

Release Description: A radiological survey done by the 200 West Tank Farm Radiological Protection group in April 1998 identified contamination specks and a contaminated ant hill near the intersection of 16th Street and Cooper Ave. The maximum reading on the specks was 11 mr/hr. Another speck was found that read 6 mr/hr. Other contamination levels ranged from 500 counts per minute to 70,000 counts per minute. The ant hill read 3000 counts per minute. Some of the contamination was removed as it was found. The rest of the area was posted as a Contamination Area (CA) in April 1998. The source of the contamination has not been determined

Waste Type: Soil

Waste Description:

Code: 200-W-71 **Classification:** Accepted

Names: 200-W-71; Undocumented Burn Pit; Undocumented Trench **Reclassification:** None

Type: Trench **Start Date:**

Status: Inactive **End Date:**

Description: The open trench was visible on a 1948 aerial photograph of 200 West Area. The trench is also visible on photograph number 3757, taken in May 1956. Smoke is emitting from the trench, indicating it was used as a burn pit. The trench has been backfilled. The area where the trench had been located is not marked or posted. The area seems somewhat disturbed and is covered with cheatgrass and some rabbitbrush.

Location: The open trench was located southeast of the 221-U facility. It was south of 16th Street and east of Beloit Avenue.

Process Description: It is not known exactly what the trench was used for. Hanford drawing H-2-1495 shows the trench and labeled it "Maintenance Disposal Ground". The 1948 aerial photograph shows an open trench and a spoil pile. Historical photographs from 1950 and 1956 show smoke emitting from the trench, indicating it was used as a burn pit. There are no designated burial grounds at this location. Later, the same area was used as a construction lay down area for the reconfiguration of U Plant for the uranium recovery process. When choosing the site for the 216-U-17 Crib, a meeting was held on July 2, 1987 with several knowledgeable long time employees. The subject of the existence of an old burial ground located adjacent to the 216-U-17 Crib site was discussed. The obvious surface debris was attributed to the surface lay down area that supported the U Plant re-construction activities. There was a general recollection among the older employees that natural uranium was once sent to a trench in this area. However, no radioactivity was ever detected during various core sampling done in the area over the years.

Related Sites/Structures: The site is associated with the Construction Surface Laydown Area (sitecode 200-W CSLA).

Waste Type: Misc. Trash and Debris

Waste Description: Drawing H-2-1495 labels the trench as the Maintenance Disposal Ground. Historical photographs show smoke emitting from the trench, indicating it was used as a burn pit.

Code: 200-W-75 **Classification:** Accepted

Names: 200-W-75; Radiological Logging System (RLS) Calibration Silos **Reclassification:** None

Type: Experiment/Test Site **Start Date:** 1/1/1978

Status: Inactive **End Date:**

Description: The site consists of four underground Radiological Logging System (RLS) equipment calibration silos. The silos are galvanized steel containers with metal lids bolted on top. The silos have somewhat different design constructions, for calibrating different types of equipment. One type consisted of a 25 centimeter (6 inch) capped well casing is inserted through the centers of the silos. There are two risers with bolted lids adjacent to the well casing. The silos are posted with Underground Radioactive Material signs.

Location: Three calibration silos are located west of the 202-S building, south of the 276-S building and north of the 211-S tanks. One calibration silo is located west of the 211-S tanks, across an asphalt access road.

Process Description: In the late 1970's, test well mockups were used to calibrate in-well radionuclide detectors. The calibration mockups were constructed of a steel container approximately 2.4 meters (8 feet) deep filled with soil. Tubes containing radioactive sources were inserted into the soil at distances of 2.5, 7.6, 15, 30, 46 and 61 centimeters from the well casing that was located in the center of the mockup. The mockup silo was buried so that a Radiological Logging System vehicle could drive up to the calibration silo and drop its logging probe into the center well casing.

Waste Type: Equipment

Waste Description: The calibration silos contained radioactive sources consisting of known quantities of cobalt-60, strontium-90, ruthenium-106 and cerium-144 in sealed capsules. Since the silo covers are posted with Underground Radioactive Material signs, it is assumed the sources are still inside the silos.

Code: 200-W-77 **Classification:** Accepted

Names: 200-W-77; Posted Contamination Area East of 216-U-14 Ditch **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site was a small area marked with posts and chain, posted with Contamination Area signs. After being backfilled with gravel, the area was downposted to Underground Radioactive Material.

Location: The site is located adjacent to the railroad track, west of 216-U-16 Crib and east of the stabilized 216-U-14 Ditch.

Waste Type: Vegetation

Waste Description:

Code: 200-W-80 **Classification:** Accepted

Names: 200-W-80; Mound of Contaminated Soil Southwest of T Plant; Stabilized Contaminated Soil Area Southwest of T Plant **Reclassification:** None

Type: Spoils Pile/Berm **Start Date:**

Status: Inactive **End Date:**

Description: The site is a gravel area surrounded with post and chain and Underground Radioactive Material Area signs. The site had been a mound of soil surrounded with radiation rope and posted with Contamination Area signs. The mound was approximately 1.5 meters (5 feet) high, 8.2 meters (27 feet) long, and 3 meters (10 feet) wide. The mound of soil and the surrounding area contained many pieces of asphalt, similar to that in the adjacent parking lot of T Plant. The mound and surrounding area is covered by a thin growth of cheatgrass and tumbleweeds. About 3 meters (10 feet) east of the site is a small posted URM, with one capped well inside the posted area and one just outside. The capped well outside is locked and has a warning of potential contamination. Across the northern part of the contamination area are fence posts marking an underground pipeline, traveling east-west, posted as a URM. Another posted underground pipeline goes under the mound of soil, in a north-south direction, and is also posted as a URM.

Location: The site is located west of 221-T and northeast of the 241-T-361 settling tank. It is about 15

meters (50 feet) west of the steam pipeline.

Waste Type: Soil

Waste Description: The site consists of a mound of soil surrounded with radiation rope and Contamination Area signs. A survey of the mound surface did not detect any contamination. It is not known if there is contamination inside the mound.

Code: 200-W-81

Classification: Accepted

Names: 200-W-81; Contaminated Tumbleweed Fragments Along Railroad Track East of 218-W-3AE

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was three posted Contamination Areas on the railroad track east of the burial ground, south of the 610 Gate of the 200 West Area fence. In 2009, each Contamination Area was radiologically surveyed and downposted to Soil Contamination Areas. Later, six inches of clean gravel was placed on the areas and the postings were changed Underground Radioactive Material Areas.

Location: The sites are located east of the 218-W-3AE Burial Ground along the railroad track, south of 12th Street.

Waste Type: Soil

Waste

Description:

Code: 200-W-82

Classification: Accepted

Names: 200-W-82; Crib Unloading Station; Truck Unloading Station, Risers East of 216-TY-201 and 216-T-26, 216-T-27 and 216-T-28 Cribs

Reclassification: None

Type: Product Piping

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1966

Description: The site consists of two concrete pads with flanged risers, surrounded by Contamination Area postings.

Location: The site is located east of Camden Avenue, east of the 216-TY-201 Flush Tank and 216-T-26, 216-T-27, and 216-T-28 Cribs.

Process Description: Based on the available information, it is believed that this site is a liquid waste truck unloading station. It is assumed that the short pipeline, shown on drawing H-2-2733, extended eastward to the risers. The unloading station was built to accommodate tanker trucks unloading 300 Area liquid wastes into the 216-T-27 and 216-T-28 cribs. The unloading station jetted waste from the trucks to the cribs and was capable of unloading two trucks at a time.

Related Sites/Structures: The site is associated with the 216-T-27 and 216-T-28 Cribs. The pipeline associated with the unloading station is described in 200-W-188-PL.

Waste Type: Equipment

Waste Description: The 216-T-27 and 216-T-28 received liquid waste from the 300 Area via trucks. The waste at the unloading station is the underground transfer piping, risers and pads and adjacent soil contaminated from leaks.

Code: 200-W-83 **Classification:** Accepted
Names: 200-W-83; Contamination Area North of 2727W **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site had been a posted Contamination Area extending across the railroad track north of the 2727-W Sodium Storage building. In April 2007, the contamination was backfilled with clean dirt and the area posting was changed to Underground Radioactive Material. The railroad tracks are no longer used.
Location: The site is located on the railroad tracks, north of the 2727-W building.
Process Description: No source of the contamination at this site is obvious from field conditions.
Related Sites/ Structures: The 2727-W Building, about 100 meters (100 yards) of this site, is posted with "Danger" signs for the sodium stored inside. It, and three nearby mobile trailers, are posted as Radiological Materials Areas.
Waste Type: Soil
Waste Description:

Code: 200-W-85 **Classification:** Accepted
Names: 200-W-85; Soil Contamination Area East of 2727 W **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site was originally a posted Soil Contamination Area. The posting surrounded some growing rabbit brush and grass. No soil discoloration or disturbance was apparent. In December 2001, the area was covered with clean backfill material and downposted to an Underground Radioactive Material Area.
Location: The site is located approximately 30 meters (100 feet) east of the fenced 2727-WA equipment storage yard.
Process Description: It is not known what caused the contamination at this location. No radiological survey could be found to determine when the area was posted or the radiological conditions inside the posted area.
Waste Type: Soil
Waste Description:

Code: 200-W-86 **Classification:** Accepted
Names: 200-W-86; Contamination Area Around Light Pole **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: with a street light attached, near the intersection of the U plant railroad spur and Bridgeport Avenue. In December 2001, the utility pole was removed and the area was covered with clean backfill. The area was downposted to Underground Radioactive Material.

Location: The site is located northwest of 221-U, on a gravel road known as Bridgeport Avenue.

Related Sites/ Structures: The light pole is related to the electrical utility facilities.

Waste Type: Equipment

Waste Description: The history (source and amount of contamination) of the site is unknown, but the power pole is surrounded by a small Soil Contamination Area.

Code: 200-W-87 **Classification:** Accepted

Names: 200-W-87; Unplanned Release on Chemical Spur Railroad Track Northwest of 221-U Plant **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site was originally a posted Contamination Area on a portion of the railroad spur. The spur is no longer active. In December 2001, the area was covered with clean backfill material and downposted to an Underground Radioactive Material Area.

Location: The site is located approximately 61 meters (200 feet) northwest of the 2714-U building and T-Hopper yard on the U Plant chemical spur railroad track.

Process Description: The chemical spur railroad track was used to transport chemicals to and from the 211-U Tank Farm and also to transport "T-Hopper" containers. The T-Hoppers contained calcined, uranium powder that had been processed in the 224-U Uranium Trioxide (UO₃) plant. They were stored in a fenced area west of the 2714-U Building. However, the posting on this spur is the result of rail cars and engine parked here (see Site Comment).

Related Sites/ Structures: UPR-200-W-118 is another unplanned release located on the same railroad spur, but closer to the 221-U building. This unplanned release was associated with material being transported to the 211-U Tank Farm area. The 211-U Chemical Unloading Station was removed and the area stabilized with gravel in 1998. The graveled area is posted with Underground Material Area signs. The demolished 2714-U was in this area.

Waste Type: Soil

Waste Description:

Code: 200-W-89 **Classification:** Accepted

Names: 200-W-89; 252-U; C8S17 Substation; U Plant Electrical Substation; U-Cat Substation **Reclassification:** None

Type: Foundation **Start Date:**

Status: Inactive **End Date:**

Description: The site is a posted, gravel Underground Radioactive Material (URM) area where the 252-U Electrical Substation had been located.

Location: The site is located near the intersection of Beloit and 16th Street in 200 West Area, east of the 224-U building.

Process

Description:

Related Sites/ Structures: The site is associated with 221-U and 224-U.

Waste Type: Soil

Waste Description: The waste in this area is residual radioactive contamination in soil. After the electrical substation was decommissioned, a posted Underground Radioactive Material area remains. Laboratory analysis of metal, ceramic pieces and asbestos fibers (August 1998) identified cesium 134 and cesium 137. Some barium, cadmium, chrome and lead was also noted. No PCB's were identified. The radioactive contamination is assumed to have been deposited on the substation from U Plant and 224-U stack emissions.

Code: 200-W-90 **Classification:** Accepted

Names: 200-W-90; Underground Radioactive Material Areas Posted Along 23rd Street in 200 West Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is comprised of three posted Underground Radioactive Material areas. Two are located on the south side of 23rd Street, across from the 218-W-2A Burial Ground. One is located further east, on the south side of 23rd Street, across from the 241-T Tank Farm.

Location: The posted areas are located along the south shoulder of 23rd Street, in 200 West Area, between Camden and Dayton Avenues.

Related Sites/ Structures: It is possible the areas are related to UPR-200-W-63.

Waste Type: Soil

Waste Description:

Code: 200-W-92 **Classification:** Accepted

Names: 200-W-92; Contaminated Mound of Soil and Debris; Soil Mound West of 241-TY Tank Farm **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is a mound of soil is approximately 1.5 meters (5 feet) high. It had been surrounded with chain and posted with Contamination Area signs. Several radiation flags were placed in the mound to identify significant contamination. Rocks, asphalt and chunks of cement were visible. Some vegetation, including rabbitbrush, had been growing on the mound. In April 2007, clean gravel was placed on top of the contamination and the site was down posted to Underground Radioactive Material.

Location: The mound is located west of an unnamed gravel road, west of the 241-TY Tank Farm.

Waste Type: Misc. Trash and Debris

Waste Description: Maximum contamination levels of 1,600,000 disintegrations per minute per 100 square centimeters of beta gamma and 14,000 disintegrations per minute per 100 square centimeters of alpha were found on the soil and debris.

Code: 200-W-101 **Classification:** Accepted
Names: 200-W-101; Contaminated Material West of 216-S-12 Crib **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The waste site consisted of two large boxes and a rusted metal shaft surrounded with light post and chain. The area had been posted with Contamination Area and Radiation Area signs. The metal shaft was approximately 18 meters (60 feet) long and extends beyond (outside) the posted area chain. The radiological posting was changed to Contamination Area in April 2002. The debris and the radiological posting were removed in July 2011.
Location: The debris had been located west of Beloit Ave., west of the 216-S-12 Crib.
Waste Type: Equipment
Waste Description: The material inside the posted area consists of two large boxes and a long metal pipe (shaft).

Code: 200-W-106 **Classification:** Accepted
Names: 200-W-106; Soil Contamination Area Adjacent to 200-W-55 Dump Site **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: Soil contamination was found and posted on February 13, 2003. In March 2010, the area was surface stabilized and downposted to Underground Radioactive Material.
Location: The site is located west of the 241-TX Tank Farm, west of the 216-T-25 Trench and northeast of the 200-W-55 debris dump site.

Code: 200-W-107 **Classification:** Not Accepted (Proposed)
Names: 200-W-107; 222-U Building Stormwater Runoff; Miscellaneous Stream #685 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: This french drain structure has been covered with gravel and is no longer visible. It is part of the posted Underground Radioactive Material remediation stabilization area that was created when the 222-U building was demolished in 2005 (see sitecode 200-W-136). The yellow metal cover had a slot on one side and was level with the surrounding ground. In 2003, no aboveground pipes were visible extending from the building to the drain. The drain lid was posted with a "Contamination Area" sign and a label stating "This is Not a Confined Space".
Location: The drain was located six feet east of the back wall of the 222-U Building, just west of 216-U-4B. It is now within the Underground Radioactive Material gravel area known as 200-W-136.
Related Sites/Structures: This site is associated with the 222-U Building and 200-W-136.
Waste Type: Stormwater Runoff
Waste Description: Documentation states that the site received stormwater runoff from the east side or backside of the 222-U Building. During the site walkdown, however, it was unclear how the drain received stormwater because no pipes were observed extending from the building into the drain.

Code: 200-W-108 **Classification:** Not Accepted (Proposed)
Names: 200-W-108; 222-U Building Stormwater Runoff; Miscellaneous Stream #687 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: This french drain structure has been covered with gravel and is no longer visible. It is part of the posted Underground Radioactive Material remediation stabilization area that was created when the 222-U building was demolished in 2005 (see sitecode 200-W-136). The yellow metal cover had a slot on one side and was level with the surrounding ground. There were no postings on the yellow metal cover and no aboveground pipes were visible extending into the drain. The yellow drain lid was moved to the side, revealing a 0.76 meter (2.5 foot) diameter culvert, approximately 1.2 meters (4 feet) deep. The culvert was dry. No aboveground pipes were visible during the 2003 walkdown that extended to the french drain.

Location: The site is located on the northeast corner (back side) of the 222-U Building. It is now within the gravel area known as 200-W-136.

Related Sites/Structures: The drain is associated with the demolished 222-U building and the 200-W-136 remediation area.

Waste Type: Stormwater Runoff
Waste Description: Documentation states that the site received stormwater runoff from the east side or backside of the 222-U Building. During the 2003 site walkdown, it was unclear how the drain received stormwater because no pipes were observed extending from the building into the drain and the top of the drain was even with the surrounding ground.

Code: 200-W-109 **Classification:** Not Accepted (Proposed)
Names: 200-W-109; 222-U Building Stormwater Runoff; Miscellaneous Stream #521 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: This french drain structure has been covered with gravel and is no longer visible. It is part of the posted Underground Radioactive Material remediation stabilization area that was created when the 222-U building was demolished in 2005 (see sitecode 200-W-136). The yellow metal cover has a slot on one side and is level with the surrounding ground. There are no postings on the yellow metal cover and no aboveground pipes were visible extending to the drain. When the cover was removed, the drain structure was found to be filled with sand.

Location: The site is located on the east side of the 222-U Building between the 200-W-107 and 200-W-108 french drains. It is now within the gravel area known as 200-W-136.

Related Sites/Structures: This site is associated with the 222-U Building and the 200-W-136 stabilized area.

Waste Type: Stormwater Runoff
Waste Description: Documentation states that the site received stormwater runoff from the east side or backside of the 222-U Building. During the site walkdown, however, it was unclear how the drain could have received stormwater because no pipes were observed extending from the building into the drain.

Code: 200-W-111 **Classification:** Not Accepted (Proposed)

Names: 200-W-111; 222-U Building Stormwater Runoff; Miscellaneous Stream #394 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: This french drain structure has been covered with gravel and is no longer visible. It is part of the posted Underground Radioactive Material remediation stabilization area that was created when the 222-U building was demolished in 2005 (see sitecode 200-W-136). The site was a covered french drain. The yellow metal cover has a slot on one side and was level with the surrounding gravel covered ground. It was posted "Not a Confined Space". The cover had been placed over a 0.61meter (2 feet) diameter vitrified clay pipe drain structure that was 0.91 meter (3 feet) deep. No underground piping was observed in the drain, nor aboveground pipes extending to the drain, however a steel drain pipe was observed extending downward on the 222-U building. The pipe had been cutoff approximately 0.61 meters (2 feet) above the ground.

Location: The site is located near the southeastern corner of the 222-U Building. It is now within the "Underground Radioactive Material Area" remediation stabilization gravel area known as 200-W-136.

Related Sites/ Structures: The drain is associated with the 222-U Building and the 200-W-136 Underground Radioactive Material Area.

Waste Type: Stormwater Runoff

Waste Description: Documentation states that the site received stormwater runoff from the east side or backside of the 222-U Building. During the site walkdown, however, it was unclear how the drain received stormwater because no pipes were observed extending from the building into the drain.

Code: 200-W-118 **Classification:** Accepted

Names: 200-W-118; Miscellaneous Stream #141; Steam Condensate MSS-TRP-006 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 0.025 meter (one inch) diameter insulated pipe extending into a 1.22 meter (4 foot) diameter french drain structure.

Location: The site is located inside the northeastern corner of the 224-U facility fence. It is north of 16th Street and west of Beloit Ave..

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. This was a seasonal discharge.

Waste Type: Steam Condensate

Waste Description: The drain received non-contaminated steam condensate.

Code: 218-W-8 **Classification:** Accepted

Names: 218-W-8; 222-T Vault**Reclassification:** None**Type:** Burial Vault**Start Date:** 1/1/1945**Status:** Inactive**End Date:** 1/1/1952

Description: Three underground vaults are contained in this site. The two original vaults are 3 by 3 by 3.7 meters (10 by 10 by 12 feet) deep, made of 5.1 by 30.5-centimeter (2 by 12-inch) wooden planking, with the tops 1.5 meters (5 feet) below grade. The third replacement vault is a concrete culvert pipe encasement 2.4 meters (8 feet) in diameter and 7.6 meters (25 feet) long and 1 meter (3.2 feet) below grade. The top of the encasement is a 23-centimeter (9-inch) precast concrete cover and the bottom is a 30.5-centimeter (12-inch) thick concrete floor. The disposal chutes for the wooden vault were removed.

Location: The unit is located southeast of the 222-T Building.

Waste Type: Misc. Trash and Debris

Waste Description: This site contains laboratory process sample waste from the 222-T Building.

Code: 218-W-9**Classification:** Accepted**Names:** 218-W-9; Dry Waste Burial Ground No. 9; Non-TRU Dry Waste No. 009**Reclassification:** None**Type:** Burial Ground**Start Date:** 1/1/1954**Status:** Inactive**End Date:** 1/1/1954

Description: The burial area is 42.7 meters (140 feet) by 29.8 meters (98 feet). The location is designated by four corner posts and chain. No data is available regarding depth, slope, or actual area used inside the posted area.

Location: The site is located northwest of the 202-S Building and north of 216-S-7 Crib.

Release Description: UPR-200-W-109 states that after repairing the buckled portions of the waste line near the 216-S-9 crib, a pressure test indicated another leak in the line. Additional hydrostatic testing finally forced the water to bubble to the surface. It surfaced inside the radiation zone marking the 218-W-9 burial trench. Dose rates of the liquid were 450 mR/hr, but as the water sank back into the soil, the dose rate dropped to 20 mR/hr. Excavation of the liquid bubble site disclosed a vertical buckle in the pipeline with a sizable break in the line at that point. The event occurred in 1969. (RHO-CD-673)

Related Sites/Structures: The waste site is associated with pipeline 200-W-139-PL. The pipeline runs beneath the eastern edge of the 218-W-9 posted area. The Unplanned Release UPR-200-W-109 documents a break in the (200-W-139-PL) pipeline occurred inside the posted area of the 218-W-9 waste site.

Waste Type: Misc. Trash and Debris

Waste Description: The unit contains an unknown amount of sheet metal scrap, including the 211-S Tank taken from the REDOX Facility. The waste contains less than 0.1 curie total beta activity. ARH-2015 part 4 says the REDOX scrap metal was contaminated with ruthenium-106.

Code: 231-W-151**Classification:** Accepted**Names:** 231-W-151; 231-W-151 Sump; 231-W-151 Vault; 231-W-151-001 (Tank); 231-W-151-002 (Tank); 231-Z-151 Sump; IMUST; Inactive Miscellaneous Underground Storage Tank**Reclassification:** None

would settle out into the tanks and the supernate was discharged to the 216-Z-7 crib. Tank operations began in 1948 and were discontinued in 1974. The inlet lines to the tank have been blanked off. In 1974, a sample was taken that indicated 231-W-151-001 contained only 0.001 grams of plutonium. The tank contents were reported to be 5,413 liters (1430 gallons) of supernate and no sludge.

The SubSite is Part Of:

Code: 231-W-151

Names: 231-W-151; 231-W-151 Sump; 231-W-151 Vault; 231-W-151-001 (Tank); 231-W-151-002 (Tank); 231-Z-151 Sump; IMUST; Inactive Miscellaneous Underground Storage Tank

Code: 231-W-151:2

Classification: Accepted

Names: 231-W-151:2; 231-W-151-002

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: Tank 231-W-151-002 is located within the 231-W-151 Vault. It is a 3,596 liter (950 gallon) stainless steel tank that received drainage from the 231-Z building floor drains. The solids would settle out into the tanks and the supernate was discharged to the 216-Z-7 crib. Tank operations began in 1948 and were discontinued in 1974. The inlet lines to the tank have been blanked off. In 1974, a sample was taken that indicated 231-W-151-002 contained 228 grams of plutonium in the sludge and less than 0.001 grams of plutonium in the supernate. The tank contents were reported to be 3,615 liters (955 gallons) of supernate and 45 liters (12 gallons) of sludge.

The SubSite is Part Of:

Code: 231-W-151

Names: 231-W-151; 231-W-151 Sump; 231-W-151 Vault; 231-W-151-001 (Tank); 231-W-151-002 (Tank); 231-Z-151 Sump; IMUST; Inactive Miscellaneous Underground Storage Tank

Code: 270-W

Classification: Accepted

Names: 270-W; 270-W Neutralization Tank; 270-W Tank; IMUST; Inactive Miscellaneous Underground Storage Tank

Reclassification: None

Type: Neutralization Tank

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1960

Description: There is no visual evidence for this tank. The tank is located beneath the cement foundation of the 2715-UA building. The 2715-UA building was removed in August 2005, leaving the foundation slab in place. The 270-W tank risers are protected with a cement block. A review of drawings indicated the 2715 UA building was placed over the 270-W tank. The 270-W consists of an underground, stainless steel tank that is 2.7 meters (9 feet) tall and 2.7 meters (9 feet) in diameter. The nominal capacity of the tank is 14,300 liters (3780 gallons).

Location: The unit is located under the northeast end of 2715-UA building, inside the 224-U facility fence.

Process Description: The tank was filled with limestone and used to neutralize acidic process condensate generated from the 224-U building. Following the pH adjustment, the waste was released to the 216-U-8 crib via a 15 centimeter (6 inch) VCP line. The 216-U-8 crib was taken out of service in 1960 and replaced with the 216-U-12 crib. A letter report, written in 1974, indicated that the 270-W tank was part of the waste line to the 216-U-12 crib. The report states that "the UO₃ plant is scheduled to restart in 1977. Since the integrity of the 270-W tank could not be assured, a bypass line should be installed around the tank before the plant begins to discharge waste". The

letter also states that based on the last liquid to flow through the tank, the liquid composition in the tank may include 2.64×10^{-9} curies/gallon of beta emitters, 9.69×10^{-5} grams/gallon of uranium and 1×10^{-9} grams/gallon of plutonium.

Related Sites/ Structures: The tank is associated with the 224-U facility and pipeline site 200-W-42.

Waste Type: Process Effluent

Waste Description: The unit was filled with limestone and used to neutralize acidic 224-U process condensate from the UO₃ plant operation. Contributors to the process condensate included feed UNH concentrator offgas, calciner offgas, phosphoric acid, and potassium hydroxide. Analyses of process condensate samples have revealed trace amounts of hydrogen fluoride, mercury, acetone, 1-butanol, 2-butanone, and n-nitrosodimethylamine. Analysis of the last liquid to flow through the tank revealed beta emitters, uranium, and plutonium. (Harlow Internal Memo states : 2.64×10^{-9} curies per gallon of beta emitters, 9.69×10^{-5} grams per gallon of uranium and 1×10^{-9} grams per gallon of plutonium - unit conversion = 6.97×10^{-10} curies per liter of beta emitters, 2.56×10^{-5} grams per liter of uranium, and 2.64×10^{-9} grams per liter of plutonium).

Code: 2607-W3 **Classification:** Accepted

Names: 2607-W3 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1996

Description: The 2607-W3 Septic Tank has been pumped, sampled, filled with sand and abandoned in place in 1998 per WAC codes. The 2607-W3 Septic Tank was constructed of reinforced concrete. At one time, the eastern access was posted with a Radioactive Material warning sign. This system includes a drain field that was expanded in the 1950's.

Location: This unit lies northeast of the 241-T-361 Settling Tank , approximately 61 meters (200 feet) north of 23rd Street and 244 meters (800 feet) southwest of the 224-T Building.

Process Description: The 2607-W3 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 221-T, the 222-T, the 224-T, and the 271-T Buildings. After being properly abandoned, the 2607-W3 effluent was redirected to the 2607-W1 system.

Related Sites/ Structures: The 2607-W3 Septic Tank as associated with the 221-T, the 222-T, the 224-T, and the 271-T Buildings.

Waste Type: Sanitary Sewage

Waste Description: The 2607-W3 septic system has been abandoned in place. This system has been redirected to the 2607-W1 system. Prior to this, the 2607-W3 septic system received sanitary sewer effluent at an estimated rate of 501 cubic feet (14.2 cubic meters) per day.

Code: 2607-W4 **Classification:** Accepted

Names: 2607-W4; T Plant Septic Tank and Drain Field **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1998

Description: The 2607-W4 Septic Tank is a single compartment tank constructed of reinforced concrete. The drain field measures 3.1 by 9.2 meters (10 feet by 30 feet). The site is surrounded by a light chain barricade. At one time the area was marked with surface contamination warning

signs. A site visit in October of 1998 indicates the area is no longer a Radiation Area. This system includes a drain field and receives sanitary wastewater and sewage from the 221-T Canyon Building.

Location: This unit lies northwest of the 221-T Canyon Building and southwest of the 216-T-1 Ditch.

Process Description: The 2607-W4 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the 221-T Canyon Building.

Related Sites/ Structures: The 2607-W4 Septic Tank is associated with the 221-T Canyon Building.

Waste Type: Sanitary Sewage

Waste Description: The 2607-W4 septic system received sanitary sewer effluent at an estimated rate of 1,330 gallons (5,000 liters) per day in 1995. This system received sanitary sewer effluent at an estimated rate of 374 cubic feet (10.6 cubic meters) per day in 1987.

Code: 2607-W5

Classification: Accepted

Names: 2607-W5; Septic Tank and Drain Field

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1944

Status: Active

End Date:

Description: The 2607-W5 Septic Tank is a single-compartment tank constructed of concrete and has three entry openings on the top, each protected by a wooden cover. A pipe connects the septic tank to a concrete diversion box, and then to a second concrete diversion box before entering the drainfield. The septic tank and diversion box are currently located within an Underground Radioactive Material (URM) area related to the 216-U-1, 216-U-2 cribs and the 241-U-361 stabilization. The septic system has two drain fields. The original drain field is located west and north of the septic tank, outside the URM area boundary. The replacement tile field is located north and east of the septic tank.

Location: This unit lies southwest of the 221-U Canyon Building and east of the 207-U Retention Basin. It is north of the 241-U-361 settling tank.

Release Description: UPR-200-W-19 occurred in 1953. The 241-U-361 tank overflowed and caused the ground to become contaminated. The Underground Radioactive Material area, located adjacent to the 2607-W5, is the result of the surface stabilization of this unplanned release.

Process Description: The 2607-W5 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from U Plant facilities. In 1998, the system was being used by MO-107 and MO-419. The original tile field was built in 1944. A replacement tile field was built east of the original tile field in 1955.

Related Sites/ Structures: The 2607-W5 Septic Tank is associated with the 221-U Canyon Building, the 222-U Laboratory, the 224-U Facility, the 271-U Building and UPR-200-W-19.

Waste Type: Sanitary Sewage

Waste Description: The 2607-W5 Septic System received sanitary sewer effluent at an estimated rate of 1,741 liters (460 gallons) per day in 1995. This unit received sanitary sewer effluent at an estimated rate of 12.2 cubic meters (431 cubic feet) per day in 1987.

Code: 2607-W6

Classification: Accepted

Names: 2607-W6 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1951
Status: Active **End Date:**

Description: The 2607-W6 system was reconstructed in 1995. The unit has a sign correctly labeling it. A concrete structure with three metal manhole covers lies on the surface. The 2607-W6 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage.

Location: This unit lies southwest of the 222-S Laboratory and southeast of the MO-291.

Process Description: The 2607-W6 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the connected facilities.

Related Sites/ Structures: The 2607-W6 Septic Tank is associated with the 202-S, the 222-S, and the 2704-S Buildings and MO-037, MO-039, MO-028, MO-924, and MO-936.

Waste Type: Sanitary Sewage
Waste Description: The current daily flow rate for the 2607-W6 septic system is 9,300 gallons (15,100 liters). This unit received sanitary sewer effluent at an estimated rate of 603 gallons (2,285 liters) per day in 1995. This system received sanitary wastewater and sewage at an estimated rate of 1,230 cubic feet (34.8 cubic meters) per day in 1987.

Code: 2607-W7 **Classification:** Accepted
Names: 2607-W7; Septic Tank **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1954
Status: Inactive **End Date:**

Description: The 2607-W7 Septic Tank was a small, 950 liter (350 gallon) tank constructed of reinforced concrete. Previous documentation stated the 2607-W7 Septic System includes a septic tank and drain field that lie within a radiation zone. A site visit done in 1999 found the septic tank to be located between two Underground Radioactive Material areas. The location of the drain field was visually not apparent. HNF-SD-LL-SP-001 shows the drain field west of the septic tank.

Location: This unit lies 14 meters (45.9 feet) north of the northernmost corner of the 221-U Canyon Building.

Process Description: The 2607-W7 Septic Tank and associated drain field are designed to accept sanitary waste sewer effluent from the connected facility, a single restroom.

Related Sites/ Structures: The 2607-W7 Septic Tank is associated with the 221-U Canyon Building.

Waste Type: Sanitary Sewage
Waste Description: No radionuclides or hazardous chemicals are associated with this system. The current flow rate to the 2607-W7 Septic System is unknown. However, this system received sanitary sewer effluent at an estimated rate of 1.02 cubic meters (36 cubic feet) per day in 1987.

Code: 2607-W8 **Classification:** Accepted
Names: 2607-W8 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1998

Description: cribs. The 2607-W8 Septic Tank is constructed of reinforced concrete and has three manhole covers visible on the surface. It is a single compartment tank with an attached dosing siphon. This unit includes a tile field. The site is marked with a sign that read "Septic Tank - 2607-W8".

Location: This unit lies northeast of the 231-Z Building and east of the 216-Z-16 Crib.

Process Description: The 2607-W8 Septic Tank and associated tile field were designed to accept sanitary sewer effluent from the 231-Z Building. The 231-Z Building was associated with the plutonium product finishing process. The tank capacity and dimensions include the settling tank and dosing siphon chamber.

Related Sites/ Structures: The 2607-W8 Septic Tank is associated with a sanitary tile field and the 231-Z Building.

Waste Type: Sanitary Sewage

Waste Description: Although the site is located within a posted radiological area and is associated with the 231-Z Building, DOE/RL-91-58 states that no radionuclides or hazardous chemicals have been associated with this system. The 2607-W8 septic system received sanitary sewer effluent at an estimated rate of 5,015 liters (1,325 gallons) per day in 1992. The estimated rate was 5.45 cubic meters (192 cubic feet) per day in 1987.

Code: 2607-W9

Classification: Accepted

Names: 2607-W9; 2707-SX Septic Tank

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1950

Status: Inactive

End Date:

Description: A gravel surface covers the 2607-W9 Septic Tank and Tile Field. Two posts with a sun bleached sign mark the location of the tile field.

Location: This system lies northwest of the 2707-SX Change House and southeast of the 216-S-25 Crib. The exact location of this septic tank is not visible from the surface.

Process Description: The 2607-W9 Septic Tank and associated tile field were designed to accept sanitary sewer effluent from the connected facilities.

Related Sites/ Structures: The 2607-W9 Septic Tank is associated with the 2707-SX Change House.

Waste Type: Sanitary Sewage

Waste Description: The current flow rate to the 2607-W9 septic system is unknown, However, this unit received sanitary sewer effluent at an estimated rate of 36 cubic feet (1.02 cubic meters) per day in 1987.

Code: 2607-WC

Classification: Accepted

Names: 2607-WC; 2607-WC Septic System

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1971

Status: Active

End Date:

Description: The 2607-WC Septic System consists of two tanks and a trench type drain field.

Location: This unit lies west of the 242-S Evaporator Building and northeast of the 272-S Maintenance Shop.

Process Description: The 2607-WC Septic Tanks and associated drain field are designed to accept sanitary sewer

Description: effluent from the connected facilities.

Related Sites/ Structures: The 2607-WC septic system is associated with the 272-S Building, the 242-S Building and MO-027.

Waste Type: Sanitary Sewage

Waste Description: The current flow rate to septic system 2607-WC is unknown. The 2607-WC system received sanitary waste at an estimated rate of 1,260 gallons (4,770 liters) per day in 1995.

Code: 2607-WZ

Classification: Accepted

Names: 2607-WZ

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1944

Status: Inactive

End Date:

Description: The 2607-WZ Septic System includes a drain field. A WIDS sitecode sign on a post marks the assumed location.

Location: This unit is assumed to be located inside 200 West Area, southwest of the 241-SX Tank Farm and southeast of the 216-S-25 Crib.

Process Description: The 2607-WZ Septic Tank was designed to accept sanitary sewer effluent.

Related Sites/ Structures: The 2607-WZ Septic Tank is associated with the 241-SX Tank Farm.

Waste Type: Sanitary Sewage

Waste Description: The current flow rates for the 2607-WZ Septic System are unknown. The system received sanitary sewer effluent at an estimated rate of 22.6 cubic meters (798 cubic feet) per day in 1987.

Code: 207-Z

Classification: Accepted

Names: 207-Z; 207-Z Retention Basin; 241-Z Retention Basin; 241-ZRB; 241-Z-RB

Reclassification: None

Type: Retention Basin

Start Date: 1/1/1949

Status: Inactive

End Date: 1/1/1959

Description: The basins have been filled with high density grout. The site had been a concrete basin structure divided into two halves. The two sides were separated by a 0.3 meter (1 foot) thick concrete wall. Each basin contained a sump with a sump pump. A 1.8 meter (6 feet) high chain link fence surrounded the basin.

Location: The concrete basins are located inside the Z Plant Exclusion Area fence, south of 236-Z building.

Related Sites/ Structures: The retention basin is associated with the 241-Z and 234-5Z facilities. Pipelines associated with the basin are discussed in sitecode 200-W-209-PL.

Waste Type: Steam Condensate

Waste Description: The site received potentially contaminated waste. Steam condensate and cooling water, via the D-3 piping system, was sent to this holding facility then released to the 216-Z-1 and 216-Z-11 Ditches.

Code: 216-Z-4 **Classification:** Accepted
Names: 216-Z-4; 216-Z-4 Crib; 231-W-3 Crib; 231-W-3 Pit; 231-W-3 Sump; 216-Z-3 **Reclassification:** None
Type: Trench **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1945

Description: The 216-Z-4 Trench is an inactive waste management unit. The unit was backfilled and deactivated in 1945. The original configuration was a large unlined excavation.

Location: 216-Z-4 crib is east of 231-Z and north of 216-Z-17 crib.

Process Description: The trench was constructed in 1945 to temporarily receive liquid laboratory waste from the 231-Z Building. The 216-Z-4 Trench was deactivated and backfilled when it was discovered to be too small for the waste stream. The laboratory effluent was rerouted to the 216-Z-6 Crib. (since the 216-Z-6 crib was fed with an aboveground pipeline, it is likely the 216-Z-4 was also fed with an above ground pipeline).

Related Sites/Structures: Structures associated with this trench include the capped pipeline from the 231-Z Building and the 231-W-151 Vault sump.

Waste Type: Process Effluent
Waste Description: The site received the process and laboratory waste from the 231-Z Building. The waste was neutral to basic.

Code: 216-Z-6 **Classification:** Accepted
Names: 216-Z-6; 216-Z-6 & 6A Crib; 231-W Crib; 231-W-4 Crib; 231-Z-6; 216-W-4; 216-Z-4 **Reclassification:** None
Type: Crib **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1945

Description: The 216-Z-6 is a below grade, inactive waste management unit. The site consists of a rectangular wooden box set in the base of an excavation. The trench was fed by an above ground pipeline.

Location: The crib is located east of the 231-Z Building and north of Nineteenth Street.

Process Description: The 216-Z-6 Crib received process waste from the 231-Z Building, via an overground line from the 231-W-151 Sump. The site was only used for one month, and abandoned due to plugging of the surrounding soil by process sludge and precipitates.

Waste Type: Process Effluent
Waste Description: The site received process waste from the 231-Z Building via an above ground line from the 231-W-151 Sump Tank.

Code: 216-Z-7 **Classification:** Accepted
Names: 216-Z-7; 231-W Crib; 231-W Trench; 216-Z-6 **Reclassification:** None
Type: Crib **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/1967

Description: The 216-Z-7 Crib is an inactive below grade waste management unit. The crib trench was backfilled upon retirement in 1967. The crib consists of two parallel wooden structures placed

in two shallow parallel trenches within a single terraced excavation. Each wooden box consists of three timber tiers, with a perforated distribution box running the length of the second tier. The interior trenches are backfilled and covered with wood planks.

Location: The site is located east of the 231-Z Building and north of Nineteenth Street.

Process Description: Crib 216-Z-7 received process waste from the 231-Z Building from 1947 to 1967. The crib was built to replace Crib 216-Z-5. A riser on the west side of the crib received 300 Area liquid waste from tanker trucks.

Related Sites/ Structures: Structures associated with this unit include four vent boxes and vent risers, transfer pipes, the 231-Z-151 Sump, and the distribution piping (sitecode 200-W-203-PL). There are two waste unloading stations west of the center line of the crib.

Waste Type: Process Effluent

Waste Description: From 1947 to 1953 this crib received process waste from the 231-Z Building via the 231-Z-151 Sump. Beginning in 1953, the site received Hanford laboratory waste from the 231-Z Building, until 1965. From 1965 to 1967, the site received laboratory waste generated by Pacific Northwest Laboratory operations inside the 231-Z Building, and waste delivered in tanker trucks from the 340 Building.

Code: 216-Z-13 **Classification:** Accepted

Names: 216-Z-13; 216-Z-13 A and B; 216-Z-13 Dry Well; 234-5 Dry Well #1; Miscellaneous Stream #261 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1949

Status: Active **End Date:** 1/1/1999

Description: The site consists of a two part drain system. The covered top of the upper french drain is visible on the surface, adjacent to a single cement marker post with a metal plate labeled 216-Z-13 (see 1985 photograph 122440-250cn).

Location: The french drain is located northeast of the 291-Z stack.

Process Description: The lower french drain is constructed of two tile culverts placed end-to-end, and backfilled beneath 9 feet (2.7 meters) of gravel. It is located approximately 6 meters (20 feet) south of the drain structure visible on the surface. Two pipes discharged to the lower french drain. The miscellaneous stream (#261) to the drain has been eliminated. The lower french drain received cooling water and steam condensate from the 291-Z ET-8 exhaust fan turbine, building steam condensate and drainage from the S-13 and S-14 coolers. The upper portion of the drain receives steam condensate from the 291-Z turbine exhaust stack. Due to the common nature of the discharge to the upper and lower drain systems, there is a potential for historical documentation related to the drains to be confusing. Due to the common nature of the waste discharged to the drains, the drains are treated as a single waste site.

Related Sites/ Structures: This french drain is associated with include two effluent discharge pipes, the ET-8 exhaust fan turbine, and the 291-Z Building. The pipeline to the french drain is 200-W-214-PL.

Waste Type: Steam Condensate

Waste Description: This french drain received emergency condensate from the turbine of the ET-8 exhaust fan, and 291-Z building steam condensate and floor drainage. Due to the french drain's location, low levels of vadose zone contamination are assumed.

Code:	216-Z-14	Classification:	Accepted
Names:	216-Z-14; 216-Z-14 A and B; 216-Z-14 Dry Well; 234-5 Dry Well #2; Miscellaneous Stream #262	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1949
Status:	Active	End Date:	
Description:	The site consists of two drain systems. The upper drain is marked with a single cement marker post, but the top of the drain has been paved over. The lower drain system is not visible from the surface. It is located approximately 6 meters (20 feet) southeast of the cement marker post. The lower french drain is constructed of two tile culverts placed end to end, and backfilled beneath 9 feet (2.7 meters) of gravel. Two pipes discharge to the french drain. The culvert is filled with cobble.		
Location:	The french drain is located northwest of the 291-Z Stack.		
Process Description:	The lower french drain receives steam condensate from the turbine of the ET-9 exhaust fan and 291-Z floor drainage. The condensate discharged to the upper drain system has been disconnected and now discharges to the ground. Due to the common nature of the discharge to the upper and lower drain systems, there is a potential for historical documentation related to the drains to be confusing.		
Related Sites/ Structures:	The lower french drain is associated with two effluent discharge pipes, the ET-9 exhaust fan turbine, and the 291-Z Building. The pipeline to the french drain is 200-W-215-PL.		
Waste Type:	Steam Condensate		
Waste Description:	The french drain receives emergency condensate and steam condensate from the turbine of the ET-9 exhaust fan along with 291-Z building steam condensate and floor drainage. Due to the french drain's location, low levels of vadose zone contamination are assumed. The site is addressed in the Miscellaneous Streams Best Management Practices Report, as a b stream (a stream discharging in a surface contaminated area). Based on process history, the drain receives non contaminated effluent.		

Code:	216-Z-15	Classification:	Accepted
Names:	216-Z-15; 216-Z-15 Dry Well; 234-5 Dry Well #3; Miscellaneous Stream #263	Reclassification:	None
Type:	French Drain	Start Date:	1/1/1949
Status:	Inactive	End Date:	1/1/1997
Description:	The 216-Z-15 Dry Well is an inactive, below grade french drain. The site is marked with a single concrete marker post that reads "Buried Radioactivity - Do Not Excavate." The marker post is believed to be located directly above the drain structure. The unit is composed of two sections of vitrified clay pipe in a vertical configuration. There is one inlet pipe. The pipe is filled with cobbles and the upper end is covered with a wood plank.		
Location:	The unit is adjacent to the southeast corner of the 2731-Z Building and north of the 291-Z Ventilation Building.		
Process Description:	The french drain used to receive condensate drainage from the 291-Z building S-12 Evaporator Cooler, but that source was re-routed to the 291-Z Sump, which is batch discharged to the PFP Low Level Waste Treatment Facility.		
Related Sites/ Structures:	The french drain is associated with the 291-Z building. The pipeline to the french drain is 200-		

Code: 216-Z-21 **Classification:** Accepted
Names: 216-Z-21; 216-Z-21 Seepage Basin; PFP Cold Waste Pond **Reclassification:** No Action (9/15/2005)
Type: Pond **Start Date:** 1/1/1980
Status: Inactive **End Date:** 1/1/1995

Description: The site is a large, unlined soil bermed depression. The basin is currently dry and is not radiologically posted.

Location: The site is located east of the Plutonium Finishing Plant, outside the security fence. It is southeast of the 216-Z-9 trench, on the west side of Camden Ave.

Process Description: The site is an unlined seepage basin that was constructed to receive PFP non-contact condensate and stormwater run off.

Related Sites/Structures: The site is associated with the 234-5 facility.

Waste Type: Steam Condensate
Waste Description: The 216-Z-21 basin received effluent from various sources within the Plutonium Finishing Plant, including High Tank overflow, storm drain run off, ventilation steam condensate, dry air compressor cooling water and ventilation air wash spray pans. These sources do not contain any radionuclides, organics or other waste. The storm drains carried some silt and sand.

Code: 2607-Z **Classification:** Accepted
Names: 2607-Z **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1999

Description: The 2607-Z Septic Tank and drain field lie in a fenced area. The septic tank is constructed of concrete and is a two chamber tank. Three manholes are provided for personnel entry. The drain field measures approximately 86 meters (282 feet) in length and 47 meters (154 feet) in width. The tile field is located inside a fenced area.

Location: This unit lies east of the 236-Z Building and southeast of the 234-5Z Building.

Process Description: The 2607-Z Septic Tank and drain field are designed to accept sanitary sewer effluent from the associated facilities.

Related Sites/Structures: The 2607-Z Septic Tank is associated with the 234-5Z, 2704-Z, 270-Z, 236-Z, 292-Z, 2701-Z, 2701-ZA, and the 2701-ZB Buildings.

Waste Type: Sanitary Sewage
Waste Description: No radionuclides or hazardous chemicals have been associated with this waste unit. Current flow rates indicate that the drain field is not providing adequate effluent treatment. This unit received sanitary sewer effluent at an estimated rate of 6,000 gallons (23,000 liters) per day in 1992.

Code: 2607-Z1 **Classification:** Accepted
Names: 2607-Z1; Septic Tank and Drainfield **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1958

Status: Inactive **End Date:** 1/1/1999

Description: The system (septic tank and drainfield) was constructed in 1958 and was pumped once a week. The drainfield location has been used as a laydown area in the past and the underground laterals may have been damaged.

Location: The site is located west of the 2721-Z Building.

Related Sites/ Structures: The site is associated with 234-5Z Building Annex and 2736-ZB.

Waste Type: Sanitary Sewage
Waste: The waste is sanitary sewage.
Description:

Code: 600-70 **Classification:** Accepted

Names: 600-70; Solid Waste Management Unit (SWMU) #2 - Miscellaneous Solid Waste **Reclassification:** None

Type: Dumping Area **Start Date:** 1/1/1950

Status: Inactive **End Date:**

Description: The site is located on relatively flat terrain except for natural depressions and evidence that trenches may have been dug. Large amounts of construction materials such as concrete, wood, metal, cans, barrels and transite are visible. Numerous areas of burned materials were also observed

Location: The site is located 360 meters (1,181 feet) east of REDOX, outside the 200-W Area perimeter fence.

Waste Type: Barrels/Drums/Buckets/Cans
Waste: Large piles of debris that includes concrete cover blocks, concrete chunks, wood, scrap metal,
Description: cans, buckets, barrels, glass and transite are spread over a large area.

Waste Type: Construction Debris
Waste: Concrete, rebar.
Description:

Waste Type: Misc. Trash and Debris
Waste: Metal lathe turnings, glass, lumber and tar.
Description:

Waste Type: Asbestos (friable)
Waste: Suspected friable asbestos.
Description:

Waste Type: Asbestos (non-friable)
Waste: Transite
Description:

Code: UPR-200-W-3 **Classification:** Accepted

Names: UPR-200-W-3; Railroad Contamination; UN-200-W-3 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1949

Status: Inactive **End Date:**

Description: The T-Plant Railroad Cut is a posted Contamination Area from the tunnel door westward to a chain link gate. A 1.8 meter by 1.8 meter (6 foot by 6 foot) posted Contamination Area is located approximately 6 meters (20 feet) west of the T-Plant chain link fence that crosses the railroad cut track and encloses the T-Plant facility.

Location: The site is located on the T Plant railroad cut track, northwest of the 221-T Canyon Building.

Release Description: On several occasions in 1949, contaminated equipment being hauled to the 200 West Burial Ground from T Plant contaminated ground near the railroad.

Waste Type: Chemicals

Waste Description: The release was undefined radioactive contamination.

Code: UPR-200-W-4 **Classification:** Accepted

Names: UPR-200-W-4; Railroad Contamination; UN-200-W-4 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1949

Status: Inactive **End Date:**

Description: The release is not physically marked or posted.

Location: The contamination spread was located on the railroad tracks extending from the 221-T Canyon Building Tunnel to the Heavy Equipment Burial Ground.

Release Description: In 1949, contamination spread from a burial box that had been transported from the 221-T Canyon Building to the Heavy Equipment Burial Ground. After the box was buried, the bulldozer used to cover the trench was found to be contaminated with dust which had readings up to 10,000 counts/minute. A complete survey was made from the Canyon Building to the Heavy Equipment Burial Ground, which revealed a spread of contaminated particles. The most contamination was found in the vicinity northeast of the burial ground.

Waste Type: Soil

Waste Description: Contamination specks were found along the RR track with readings averaging 7 millirem/hour.

Code: UPR-200-W-14 **Classification:** Accepted

Names: UPR-200-W-14; Waste Line Leak at 242-T Evaporator; UN-200-W-14 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1952

Description: The site is described as the surface above the waste line between the 242-T Evaporator and the 207-T Retention Basin. Since the exact location of this 1952 Unplanned Release is not documented, it was considered possible that one of the areas stabilized in 2001 is in the same location as the 1952 line leak. The mapping coordinates for the 1952 have been estimated from the limited information provided. A WIDS sign has been placed at the approximate location of the release.

Location: The 1952 release occurred in an underground pipeline causing water to be observed on the surface, east of the 241-TY Tank Farm. The exact location was not documented. A hand drawn sketch in HW-60807 places the release location near the 241-TY east fence. The mapping coordinates have been estimated.

failed or ruptured. The rupture was apparently allowing process waste to bypass the crib soil column and flow directly into the groundwater. The well was promptly backfilled with sand.

Process Description: The test well originally consisted of a 20.3 centimeter (8 inch) steel casing driven to a depth of 45.7 meters (150 feet). In January of 1955, the well was extended an additional 50 meters (163 feet), beneath the groundwater table which was at a depth of about 65.5 meters (215 feet) in 1955.

Related Sites/ Structures: The release is associated with the 216-S-1 & 2 cribs and well 299-W22-3.

Waste Type: Process Effluent

Waste Description: The 216-S-1 and 216-S-2 Cribs received cell drainage from the D-1 Receiver Tank and redistilled condensate from the D-2 Receiver Tank in the 202-S Canyon Building. The inorganics found at the site include: aluminum, nitrate, nitric acid, and sodium. The radionuclides found at this site are: cobalt-60, americium-241, cesium-137, uranium, and plutonium. An unknown volume of this waste entered the groundwater beneath the crib through a rupture in the well casing.

During the time between the last normal reading from the well (June 1955) and the time the incident was discovered, about 7,500,000 liters (2,000,000 gallons) of liquid waste, with an estimated gross beta activity of 7,500 curies had passed into the crib. Also, within this span of time about 40 grams (1.4 ounces) of plutonium had entered the crib.

Code: UPR-200-W-39	Classification: Accepted
Names: UPR-200-W-39; 224-U Buried Contamination Trench; UN-200-W-39	Reclassification: None
Type: Unplanned Release	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1954

Description: The release site is not marked because the 224-UA Building was built over the release location.

Location: According to available references, the release occurred on the southeast side of the 224-U building. The disposal trench is located under the 224-UA (Calcliner Building) addition.

Release Description: A leak from 224-U, during March 1954, spread to an area southeast of the 224-U Building. The contamination was placed in a trench that measured 3.1 meters (10 feet) wide by 15.2 meters (50 feet) long. The contamination was covered with 0.9 meters (3 feet) of clean soil.

Related Sites/ Structures: The release is associated with the 224-U Facility.

Waste Type: Process Effluent

Waste Description: The release was described as a leak from 224-U. The effected soil was placed in a nearby trench. A later reference described the contamination as uranium, less than 10 nanocuries/gram. No volume estimate is provided.

Code: UPR-200-W-41	Classification: Accepted
Names: UPR-200-W-41; Railroad Contamination; REDOX Railroad Cut Contamination; UN-200-W-41	Reclassification: None

Release Description: On October 24, 1957, a burial box, used to transport failed equipment from REDOX to the T Plant Canyon, was inadvertently pulled from the rail car when one of the box sling cables caught on a railroad tie, or possibly a switch frog. The area was contaminated up to 2 rads/hour. (Note: HW-53449 says the box was in route to U Plant)

Waste Type: Soil

Waste Description: The release site is soil contaminated with beta/gamma with readings maximum readings up to 2 rads/hour.

Code: UPR-200-W-46 **Classification:** Accepted

Names: UPR-200-W-46; Contaminated Railroad Track; H-2 Centrifuge Burial; UN-200-W-46 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1957

Status: Inactive **End Date:**

Description: The railroad track from the 202-S Tunnel to the first gravel road intersection has been covered with clean backfill material. The railroad cut located inside the facility fence is posted as a "Contamination Area." The section of covered track from the fence to the first gravel road intersection is posted as an "Underground Radioactive Material" area.

Location: Burial operation of the H-2 Centrifuge from REDOX resulted in spotty contamination in the REDOX, 234-5Z, and 224-U Plant areas. General low level smearable contamination was also found along the railroad right-of-way to the burial ground.

Release Description: Problems began when the H-2 Centrifuge was placed in a burial box in the REDOX Railroad Tunnel on December 30, 1957. After a short period of time fumes were observed coming from the centrifuge. Corrective measures to control the escape of fumes were attempted but were generally unsuccessful. After about four hours of this condition, fumes escaped the tunnel and began circulating throughout the REDOX Building via the ventilation system. By 4:30 A.M., December 31, 1957, respiratory protection was required for all personnel entering the north side of REDOX or the 233-S Building. Later, the respiratory protection requirements were extended to the south operating areas of REDOX. Considerable surface contamination was deposited in and around REDOX, including construction work areas outside the building. The centrifuge was transported by train to the burial ground. The burial box was observed to be "puffing" slightly as it proceeded to the burial site but no contamination was observed along the railroad right of way. It was buried at about 10:00 A.M on December 31, 1957. Dose rates related to the centrifuge burial were documented as 185 millirads/hour at 177 meters (580 feet), and about 2 millirads/hour at 0.8 kilometers (0.5 mile). Radiation fields averaging 1 rad/hour during backfilling of the centrifuge box in the burial ground prevented the box from being completely buried in one day. Two employees received face and nostril contamination during the backfill operation. Two days later, radiation surveys revealed a general low level smearable contamination along the railroad right-of-way.

Waste Type: Equipment

Waste Description: The waste was contaminated fumes emitting from a centrifuge, with beta/gamma readings up to 1 rad/hour noted during burial. The centrifuge was ruthenium contaminated.

Code: UPR-200-W-48 **Classification:** Accepted

Names: UPR-200-W-48; Contaminated Railroad Track Near 221-U; UN-200-W-48 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1958

Status: Inactive**End Date:****Description:** The area is no longer marked or posted.**Location:** The contamination spread occurred at the west end of the 221-U railroad cut at Bridgeport Avenue, west of 221-U.**Release Description:** On July 9, 1958, a survey of the railroad area revealed a spread of contamination in the vicinity of the road intersection with the 221-U railroad. The incident occurred when a jumper, wrapped in plastic, was transferred from a flat-bed truck to a railroad flat-car at the railroad crossing. The jumper was transferred from the truck to the railroad car by a crane and moved into the 221-U railroad tunnel. Dose rates up to 9 rad per hour over an area of about 93 square meters (1,000 square feet) were detected. The contamination spread was caused by the plastic wrapping on the jumper being damaged during transfer.**Waste Type:** Chemicals**Waste Description:** The release site contained beta/gamma with readings to 9 rads/hour that spread while moving a plastic wrapped, waste transfer jumper off a flat bed truck. It is not known what facility the jumper came from.

Code: UPR-200-W-51**Classification:** Accepted**Names:** UPR-200-W-51; UPR-200-W-52; Release from 241-S Diversion Box; UN-200-W-51**Reclassification:** None**Type:** Unplanned Release**Start Date:** 1/1/1958**Status:** Inactive**End Date:****Description:** The release site is not currently marked or posted. The area where this release had been located (in 1958) is near an area that was surface stabilized in 1992 (UPR-200-W-165).**Location:** The contamination spread southward from the 241-S-151 Diversion Box (inside the 241-S tank farm) to approximately 91.4 meters (100 yards) beyond the 200 West Area fence. The plume was approximately 100 meters (300 feet) wide.**Release Description:** On September 12, 1958, high pressure steam was applied to the D-8 line of the 241-S Diversion box in an attempt to unplug it. The pressure bled back into the diversion box and caused a release of contamination. A follow up survey revealed contamination readings up to 1 rad/hour immediately around the box. Contamination levels 30 meters (100 feet) south of the diversion box were 50 millirad per hour. A narrow strip of contamination extended southward, across Tenth Street, with contamination levels of 4,000 counts per minute. The contamination continued southward approximately 91.44 meters (100 yards) beyond the 200 West Area fence. The particles outside of the 200 West Area fence read on the order of 5,000 counts per minute. The contaminated areas were posted and the gross contamination was flushed with water.**Related Sites/Structures:** The site is associated with the 241-S-151 Diversion Box, UPR-200-W-52, UPR-200-W-114 and UPR-200-W-165.**Waste Type:** Process Effluent**Waste Description:** Beta/gamma particulates with readings up to 50 millirads/hour within 100 feet (30.48 meters) of the diversion box and readings on Tenth Street to about 4,000 counts/minute and 5,000 counts per minute outside the fence were documented. Beta/gamma readings of up to 1 rad/hour were identified immediately around the 241-S-151 Diversion Box. Specific contaminants were not identified.**The Following Sites Were Consolidated With This Site:**

Names: UPR-200-W-63; Road Contamination Along the South Shoulder of 23rd Street; UN-200-W-63 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1966

Status: Inactive **End Date:**

Description: The release site is not currently marked.

Location: The contamination spread effected the road surface of 23rd Street in 200 West Area. ARH-2015 and ARH-2757 state the contamination was spread began 152.4 meters (500 feet) west of the west railroad crossing on 23rd Street and extended (eastward) to the intersection of Bridgeport and 23rd Street, along the south shoulder of 23rd Street. The document also gives approximate Hanford Site coordinates of N43175, W74025/N43175, W77500.

Release Description: On September 21, 1966, strontium-90 in the form of particulate matter spread from a used diversion box jumper as it was being transported from the 200 West Dry Waste Burial Ground to the 221-T Canyon. The jumper had just previously been removed from the 241-TX-153 Diversion Box. Spotty contamination on 23rd Street was found along the road and shoulder. Speck contamination approximated one per square yard of ground surface along the shoulder of 23rd Street.

Related Sites/Structures: It is possible this release is associated with the radiologically posted areas 200-W-90.

Waste Type: Chemicals

Waste Description: The contamination was in the form of strontium-90 with an activity of about 1 curie. Spots of contamination up to 500 millirads/hour were removed from the road.

Code: UPR-200-W-65 **Classification:** Accepted

Names: UPR-200-W-65; Contamination in the T-Plant Railroad Cut; UN-200-W-65 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1969

Status: Inactive **End Date:**

Description: The railroad cut is currently posted as a Contamination Area, extending from the tunnel door westward to a chain link gate and fence.

Location: The contamination was found in the T Plant railroad cut, that is located on the west side of the 221-T facility adjacent to the railroad tunnel.

Release Description: On October 27, 1969, contamination was found during a routine survey of the 221-T Plant railroad cut. Spots of contamination from 5,000 counts per minute to 150 millirads/hour were found between the rails of the spur line and adjacent to the spur line. One area, about 45.72 meters (50 yards) from the tunnel door, was generally contaminated over an area measuring 0.9 meters (3 feet) by 3 meters (10 feet). From this area west, the contamination spots were spaced a few inches to a few feet until approximately 114.3 meters (125 yards) from the tunnel door, where the contamination was non-detectable. The exact source of the contamination is unknown, but the location limits the cause to a rail car carrying radioactive material which was not effectively contained.

Process Description: Contaminated equipment was sent to T Plant on railcars for repair and decontamination.

Waste Type: Chemicals

Waste Description: Beta/gamma with readings from 5,000 counts/minute to 150 millirads/hour.

Beta-gamma contamination up to 600 millirads/hour was found on the road.

Code: UPR-200-W-73 **Classification:** Accepted

Names: UPR-200-W-73; Contaminated Railroad Track at 221-T; UN-200-W-73 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:**

Description: The railroad cut adjacent to the 221-T tunnel is currently posted as a Contamination Area. The rail spur leading into the 2706-T facility is currently not posted. The Unplanned Release area is not specifically marked or posted.

Location: The contamination was located on the railroad tracks that connect the 221-T Building Tunnel to the 2706-T Building.

Release Description: On October 16, 1974, a contamination spread from a leaking multi-purpose transfer box was discovered. During a routine survey in the 221-T Building Tunnel, on October 14, 1974, contamination levels up to 3,800 millirads/hour were detected on the bed of the multi-purpose transfer box railroad car. Decontamination of the rail car was scheduled for October 15, 1974. During the decontamination effort, a hair-line crack was observed in a weld of the outer shell of the transfer box. Radiation readings on the transfer box were reduced to 350 millirads/hour and 600 counts per minute smearable on October 16, 1974. The railcar was moved to the 2706-T Building so repairs could be made. A follow-up survey of the railcar at 2706-T indicated that additional contamination had seeped out. Radiation readings on the rail car had increased to 50,000 counts per minute smearable. A survey of approximately 365.76 meters (400 yards) of railroad track between 221-T Building Tunnel and the 2706-T Building revealed spots of contamination up to 40 millirads/hour. The cause of the leakage was migration of decontamination solution to the hair-line crack area and subsequent leaking due to rail movement of the transfer box.

Process Description: Contaminated equipment was transferred to T Plant on railcars for repair and decontamination.

Waste Type: Chemicals

Waste Description: Spotty beta/gamma contamination with readings to 40 millirads/hour on the ground.

Code: UPR-200-W-78 **Classification:** Accepted

Names: UPR-200-W-78; UN-200-W-78; UO3 Powder Spill at 224-U **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1970

Status: Inactive **End Date:**

Description: The site is no longer marked or posted.

Location: The release caused an area, located 36 meters (40 yards) south of the Uranium Tri-Oxide barrel storage area, to become contaminated.

Release Description: On August 21, 1970 a radiation survey done with a truck mounted road monitor. The equipment detected an area measuring approximately 3.72 square meters (40 square feet) contaminated with levels up to 20,000 counts/minute. It is assumed that some uranium powder spilled prior to March 1969, when the last pallets were moved from 224-U.

Waste Type: Chemicals
Waste Description: Uranium trioxide powder was spilled on the ground. Contamination up to 20,000 counts per minute was found.

Code: UPR-200-W-99 **Classification:** Accepted
Names: UPR-200-W-99; 241-153-TX Diversion Box Contamination Spread; UN-200-W-99; UN-216-W-7 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1966
Status: Inactive **End Date:** 1/1/1966

Description: The area on the east of Camden Avenue, east of the 241-TX Tank Farm was stabilized with soil and grass. It is marked with "Underground Radioactive Material" signs.

Location: The release site is located east of the 241-TX Tank Farm, extending approximately 69 to 91 meters (75 to 100 yards) east of Camden Avenue.

Release Description: UPR-200-W-99 occurred on September 21, 1966. Two plumes of airborne contamination from the 241-TX-153 Diversion Box floated northeast and southeast. The releases contaminated the ground and road on both sides of Camden Avenue. The total length of contamination was identified to be 228 meters (750 feet) north and south along Camden Ave. The contamination extended a maximum of 91 meters (300 feet) east of Camden Ave. The maximum contamination found was 700 millirem per hour.

Related Sites/ Structures: UPR-200-W-99 was associated with the 241-TX-153 Diversion Box and Camden Avenue.

Waste Type: Process Effluent
Waste Description: Airborne particulates containing approximately 1 curie of strontium-90, with maximum readings of up to 700 millirads/hour, contaminated a large area around the diversion box.

Code: UPR-200-W-101 **Classification:** Accepted
Names: UPR-200-W-101; 221-U Acid Spill R-1 Through R-9; UN-200-W-101; UN-216-W-9 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1957
Status: Inactive **End Date:** 1/1/1957

Description: The release site was posted with "Surface Contamination" warning signs. The contaminated ground was covered with sand and gravel. A larger contaminated area on the east side of 221-U was surface stabilized in 1998 (UPR-200-W-162). This unplanned release area was located within the UPR-200-W-162 posted area. After being covered with clean material, the posting was changed to Underground Radioactive material. UPR-200-W-101 is not separately marked or posted within the area.

Location: UPR-200-W-101 occurred at the northeast end of the 221-U Building (sections R-1 through R-9) in the 200 West Area.

Release Description: UPR-200-W-101 occurred in March 1957, when reclaimed acid was spilled onto the ground at the northeast end of the 221-U Building. Approximately 1 curie of fission products was released. An area 19.8 meters (65 feet) by 27.5 meters (90 feet) was covered with 3 inches of sand and gravel after the occurrence.

Process Description: Reclaimed acid was distributed via overhead pipelines between 224-U and 211-U.

DESCRIPTION:

Related Sites/ Structures: UPR-200-W-101 was associated with sections R-1 through R-9 of the 221-U Building and UPR-200-W-162.

Waste Type: Chemicals

Waste Description: At the time of discharge, the reclaimed acid contained approximately one curie of strontium-90.

Code: UPR-200-W-103 **Classification:** Accepted

Names: UPR-200-W-103; 216-Z-18 Line Break; Pipe Line Leak; UN-200-W-103; UN-216-W-13 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1971

Status: Inactive **End Date:** 1/1/1971

Description: The release site is posted with Underground Radioactive Material (URM) warning signs. Contamination still remains under the clean soil. A WIDS number sign has been placed inside the URM to mark the approximate release location.

Location: UPR-200-W-103 occurred within the Z Plant exclusion area, approximately 1.8 meters (6 feet) south and 3.7 meters (12 feet) west of the southwest corner of the 236-Z Building in the 200 West Area.

Release Description: The 216-Z-18 Crib line broke near the southwest corner of the 236-Z Building. An excavation of the area uncovered gross alpha contamination in the soil.

Related Sites/ Structures: UPR-200-W-103 is associated with the 216-Z-18 Crib line (200-W-174-PL), the 234-5 Building, and the 236-Z Building.

Waste Type: Process Effluent

Waste Description: The release contained approximately 10 grams of plutonium with gross alpha contamination greater than 6,000,000 disintegrations per minute.

Code: UPR-200-W-111 **Classification:** Accepted

Names: UPR-200-W-111; Sludge Trench at 207-U; UN-216-W-21 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1960

Status: Inactive **End Date:**

Description: The site is a trench near the south wall of the 207-U South Retention Basin. The site had been posted with "Surface Contamination" signs. In 1997, contaminated soil in the vicinity of the 207-U Retention Basin was scraped and consolidated around the basin perimeter. The contaminated soil was covered with clean backfill. The radiological posting was changed to "Underground Radioactive Material."

Location: The site is approximately 3 meters (10 feet) from the concrete wall on the south side of the 207-U South Retention Basin in the 200 West Area.

Release Description: Sludge was scraped from the bottom of the south 207-U Retention Basin and placed in a narrow trench adjacent to the south wall of the basin. The sludge was covered with 1.2 meters (4 feet) of clean soil.

Related Sites/ Structures: UPR-200-W-111 was associated with the 207-U South Retention Basin.

Process Description: After the uranium was removed, the reclaimed nitric acid was stored in the 211-UA tanks. It was transferred from 224-U to 211-UA via overhead lines. The slightly radioactive nitric acid was recycled back to REDOX and PUREX. In the 1960's and 1970's it was returned to the separations facilities in railcars. It was pumped out of the 211-UA tanks into the railcars via underground lines and a pump pit. Some leakage was associated with the pumping process and caused low level radioactive contamination around the area. The reclaimed nitric acid storage was moved from 211-UA to a holding tank within the 224-U facility in the 1980's and the railcar unloading platform was abandoned. Some residual acid and waste water, contaminated above crib release limits, continued to be stored in the 211-UA tanks. All the acid and waste water was removed from the tanks prior to being transitioned to the new Environmental Restoration Contractor in 1994. Although the tanks were emptied, the acid pump pit and underground lines had not been flushed. Leaking valves and seals and residual contamination in the pump pit caused low level radioactive contamination to spread around the tanks and railcar unloading platform. The area was posted as a Contamination Area again in the early 1990's. The lines and pump pit were flushed in 1998 and the surface contamination was covered with gravel. The area was changed to an Underground Radioactive Material Area.

Related Sites/ Structures: UPR-200-W-118 is associated with the 211-U and 211-UA Chemical Tank Farms.

Waste Type: Chemicals

Waste Description: The waste consisted of radioactive reclaimed nitric acid that spilled to the soil.

Code: UPR-200-W-138	Classification: Accepted
Names: UPR-200-W-138; UPR-200-W-22; 221-U Vessel Vent Blower Pit French Drain; UN-200-W-138; UN-200-W-22; UN-216-W-11	Reclassification: None
Type: Unplanned Release	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1953

Description: The site was described as the ground near the R-3 entrance to the 221-U Building. The area has been surface stabilized and posted with Underground Radioactive Material signs. The Unplanned Release is not separately marked or posted.

Location: UPR-200-W-138 occurred at the northwest corner of the 221-U Building, near the R-3 entrance. It is located inside the larger, surface stabilized area, UPR-200-W-162.

Release Description: Uranyl nitrate hexahydrate (UNH) solution overflowed into the 221-U Building Vessel Vent Blower Pit, then onto the ground through the French Drain.

Related Sites/ Structures: UPR-200-W-138 was associated with the 221-U Building Vessel Vent Blower Pit and the larger surface stabilized area UPR-200-W-162. It may also be associated with the 216-U-7 french drain.

Waste Type: Process Effluent

Waste Description: An estimated 140 kilograms (300 pounds) of uranium nitrate hexahydrate (UNH) solution, containing 14 kilograms (30 pounds) of uranium, was released to the ground through the French Drain. The information for this release is vague. Some documentation indicates the french drain involved was the 216-U-7, but drawing reviews indicate the blower pit is located north of 216-U-7. The blower pit drained to the 241-WR vault. If the event involved surface liquid being released, it is possible it flowed southward and could have effected the 216-U-7 drain.

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was originally defined as a large, irregularly shaped area of surface soil contamination located north and east of the 241-T Tank Farm. The areas of soil contamination have been scraped and consolidated onto the west slope of the 216-T-14 through 216-T-17 Trenches and also into the 207-T Retention Basin. The unplanned release is no longer separately marked or posted.

Location: In 1985, the original area of soil contamination was described as being located north and east of 241-T Tank Farm, west of the 216-T-14 through 216-T-17 Trenches and surrounding the 207-T Retention Basin. In 1996, additional soil contamination was found east of the 207-T Retention Basin and was also considered to be UPR-200-W-166.

Release Description: The site consisted of spotty contamination which is suspected to have originated from 241-T Tank Farm.

Process Description: Contamination in the soil surrounding the exterior of the 241-T Tank Farm and the 207-T Retention Basin ranged from 25,000 to 250,000 diintegration per minute. The source of the contamination is suspected to be years of operating activities in the tank farm and dried particles blowing out of the retention basin.

Related Sites/ Structures: UPR-200-W-166 was associated with the 216-T-14 through 216-T-17 Trenches, 241-T Tank Farm, the 207-T Retention Basin and 200-W-53.

Waste Type: Soil

Waste Description: The waste consisted of spotty contamination which is suspected to have originated from the 241-T Tank Farm.

300-FF-1

Code: 300 ASH PITS **Classification:** Accepted

Names: 300 Ash Pits; 300 ASH PITS; 300 Area Ash Pits **Reclassification:** Closed Out (12/17/1997)

Type: Coal Ash Pit **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1994

Description: The unit consists of two separate excavations that are 4.6 to 6.1 meters (15 to 20 feet) deep and 7,400 square meters (80,000 square feet) in area.

Location: The site is located in the 300 Area, south of the 316-1 Process Pond and west of the 300 Area Filter Backwash Pond (300 FBP).

Process Description: The 300 Area coal-fired power house generated coal ash starting in about 1944. The ash was suspended in a water slurry and sluiced to the South Process Pond (SPP) until 1951. When the coal fly ash was dry, it was hauled to several locations, including these disposal pit located west of the 300 Area. These pits received about 56,000,000 liters per year (15,000,000 gallons per year) of fly ash slurry during operations

Waste Type: Ash

Waste Description: Coal fly ash was periodically sluiced from the 384 Powerhouse to the pits with water at the rate of 57 million liters/year (15 million gallons/year). Analysis of the fly ash according to 173-303 WAC indicated it was non-Extraction Procedure toxic. Filter backwash water was diverted to the east ash pit from 1992 to June 1995 to allow for the construction of a liner in the filter backwash pond and resolve permitting is

Closure Info: During the 300-FF-1 Phase 1 remedial investigations (RI), samples of ash showed that metals concentrations were below cleanup standards. However, the ash pits were constructed in an area that at one time was part of the SPP. The RI did not collect samples from soils below the ash pit sediments that could contain contaminants from the SPP. Therefore, the 300-FF-1 Record of Decision required remedial action at the ash pits to verify no contaminants below the ash pits remained from previous SPP operations.

Six sample locations were randomly identified at the ash pits, and samples were taken below the ash at a depth about 4.6 meters (15 feet) below surface grade. Field screening was performed at about 0.3 meter (1 foot) intervals in the ash, but did not identify any contaminants of concern above the cleanup levels. Samples were taken below the layers of ash, and the pits backfilled

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. IC information in the closure documents for some 300 Area sites, including this one, is incomplete. ICs limiting land use to industrial uses are required, as are controls preventing uncontrolled drilling or excavating. The ICs for this site have been revised accordingly.

Code: 300 FBP **Classification:** Accepted

Names: 300 FBP; 300 Area Filter Backwash Pond **Reclassification:** No Action (11/7/2000)

Type: Surface Impoundment **Start Date:** 1/1/1987

Status: Inactive **End Date:** 1/1/1998

Description: This site has been reclassified as "no Action." The unit consists of two subsites; one is a single, rubber lined basin measuring 97.5 meters (320 feet) by 65 meters (213 feet, 7.6 meters (25 feet) deep. From 1987 to 1992, the basin operated as an unlined percolation pond, which is

the second subsite. In 1992, the basin was lined with a synthetic liner on a concrete foundation.

Location: The site is located north of the 338 Building and east of the 300 Area Ash Pits, near the banks of the Columbia River. The basin is enclosed by a locked chain link fence.

Process Description: Before the pond was lined, filter backwash was discharged to it and allowed to percolate to groundwater. After 1995, the backwash was held in the lined pond to clarify. The clarified water was sent to the 300 Area TEDF (Treated Effluent Disposal Facility). The Hanford Site Waste Management Units Report reports that the unit received water and nonhazardous alum from backwash filters used to filter water for sanitary and process use. Analysis of the backwash showed it to be nonhazardous. The accumulated sediment in the ponds is not regulated and could be disposed of in a landfill.

Related Sites/ Structures: The site is associated with the 384 Powerhouse and the 300 Area Treated Effluent Disposal Facility (TEDF).

Waste Type: Water

Waste Description: The unit receives 76 million liters/year (20 million gallons/year) of water and alum backwashed from filters. Analysis of the backwash has shown it to be nonhazardous.

This Site has the Following SubSites:

Code: 300 FBP:1

Names: 300 FBP:1; 300 FBP (Unlined)

Code: 300 FBP:2

Names: 300 FBP:2; 300 FBP (Lined)

Code: 300 FBP:1

Classification: Accepted

Names: 300 FBP:1; 300 FBP (Unlined)

Reclassification: No Action (2/19/1998)

Type: Surface Impoundment

Start Date:

Status: Inactive

End Date:

Description: The subsite represents the unlined pond that operated from 1987 to 1992. This component of the 300 FBP is included as a "no action" site within the 300-FF-1/300-FF-5 Record of Decision.

Closure Info: No remediation was performed.

The SubSite is Part Of:

Code: 300 FBP

Names: 300 FBP; 300 Area Filter Backwash Pond

Code: 300 FBP:2

Classification: Accepted

Names: 300 FBP:2; 300 FBP (Lined)

Reclassification: No Action (11/7/2000)

Type: Surface Impoundment

Start Date:

Status: Inactive

End Date:

Description: This subsite is the lined filter backwash pond. This site is not addressed within the 300-FF-1/300-FF-5 Record of Decision.

Closure Info: No remediation was performed.

The SubSite is Part Of:

Code: 300 FBP
Names: 300 FBP; 300 Area Filter Backwash Pond

Code: 300 RFBP **Classification:** Accepted
Names: 300 RFBP; East Bay of South Process Pond; **Reclassification:** Closed Out (7/23/2003)
Pond 5; 300 Area Retired Filter Backwash Pond
Type: Pond **Start Date:** 1/1/1975
Status: Inactive **End Date:** 1/1/1987

Description: The site has been remediated and closed out. When the South Process Pond became inactive in 1975, the east lobe started to be used by the 300 Area Water Treatment Facility as a filter backwash pond.

Location: The unit was located west of the 300 Area, in the east lobe of the 300 Area South Pond.

Process Description: The 300 RFBP and the 316-1 South Process Pond, collectively referred to as the 316-1 South Process Pond site, are the site of former high-volume liquid waste disposal activities located north of the 300 Area complex, near the Columbia River. The easternmost boundary of the 316-1 South Process Pond is approximately 49 meters (160 feet) west of the shoreline of the Columbia River. The 316-1 South Process Pond site was built in 1943 and was the first 300 Area process liquid disposal unit. It was originally a single, large infiltration pond to which dikes were later added, forming three settling ponds and a large main infiltration pond. The east lobe of the site was used by the 300 Area water treatment plant as a filter backwash pond (WIDS site 300 RFBP). Combined process wastes discharged from the fuel fabrication facilities to the South and North Process Ponds ranged from 1,514,000 to 11,360,000 liters/day (400,000 to 3,000,000 gallons/day). During their operational life, the process ponds received thousands of kilograms of uranium as dissolved material and finely divided solids. Much of the uranium was carried with the infiltration water, but some remained in the pond soils. Discharging of waste to the process ponds ended in 1975.

Related Sites/Structures: This site was associated with the South Pond (316-1); the Contaminated Soil West of the South Process Pond (300-262); and unplanned release (UPR) sites UPR 300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37, and UPR-300-FF-1.

Waste Type: Process Effluent

Waste Description: The unit received 3.8E+07 to 7.6E+07 liters/year (1E+07 to 2E+07 gallons/year) of water and nonhazardous alum from backwashing filters. Analysis of the backwash has shown it to be nonhazardous.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: 300-3 **Classification:** Accepted
Names: 300-3; 300-FF-1 Aluminum Hydroxide **Reclassification:** No Action (7/9/1997)
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is a wooden structure consisting of several horizontal (0.30 to 0.46 meters [1 to

1.5 ft] diameter) cedar logs forming a vertical wall.

Location: This site is about 100 meters (330 feet) northwest of the 316-1 South Process Pond.

Process Description: Photos from 1956 indicate the site was possibly used to receive sodium aluminate/aluminum hydroxide scrapings from the South and North Process Ponds.

Waste Type: Chemicals

Waste Description: Sample analysis of the white, chalky material was consistent with aluminum hydroxide, or hydrous aluminum oxide, but the uranium levels were very small. Uranium content for one sample was 58 picocuries/gram and another was 30 picocuries/gram. Uranium concentrations in pond scrapings are usually higher.

Code: 300-44

Classification: Accepted

Names: 300-44; R-32; UN-300-FF-1; UPR-300-FF-1

Reclassification: Closed Out (12/17/1997)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This site is southwest of 618-4 Burial ground, and has been remediated and closed out.

Location: The site is near the southwest end of the 618-4 Burial Ground. The surface area was derived from a Global Position Survey (GPS) of the site boundary.

Related Sites/Structures: The site is associated with WIDS sitecode UPR-300-FF-1.

Waste Type: Soil

Waste Description: The soil contamination appears to be the result of shallow buried materials.

Closure Info: A layer of overburden ranging in depth from 0.3 to 0.9 meters (1 to 3 feet) was removed prior to the excavation and stockpiled. Only a additional 0.3 meters (1 foot) was removed to complete the excavation, based on radiological surveys. Contaminated soil was disposed at the Environmental Restoration Disposal Facility. Verification samples were taken; two from the bottom of the excavation and two from the stockpiled overburden, and analyzed for 300-FF-1 Operable Unit contaminants of concern.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. IC information in the closure documents for some 300 Area sites, including this one, is incomplete. ICs limiting land use to industrial uses are required, as are controls preventing uncontrolled drilling or excavating. The ICs for this site have been revised accordingly.

Code: 300-49

Classification: Accepted

Names: 300-49; Landfill 1a; UN-300-FF-1; UPR-300-FF-1

Reclassification: Closed Out (5/28/2003)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and closed out. The site was a large rectangular area with visible

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- Description:** debris on the surface and areas of subsidence. After excavation and closure activities the area will be re- graded.
- Location:** The site was located southeast of 618-5 Burial Ground, near the Columbia River bank.
- Related Sites/ Structures:** The site was associated with WIDS sitecode UPR-300-FF-1.
- Waste Type:** Misc. Trash and Debris
- Waste Description:** Material visible on the surface included empty acid and mercury bottles, ceramics, and other glassware that appeared to be of laboratory origin, metal, and a partially buried 208-liter (55-gallon) drum. Materials that are radiologically contaminated include soil, tumbleweeds, pipes, ceramics, glass, and a small amount of yellow material that resembles "yellow cake" (a complex uranium compound, the product of chemically refining natural uranium).
- Closure Info:** The cleanup verification package (CVP-2000-00020) has documented that the 300-49 site has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established in the Final Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units (ROD) (EPA 1996) and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) (DOE RL-96-70).

Site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified in the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (1997 RDR/RAWP) consisted of the following: cobalt-60, uranium-234, uranium-235, uranium-238, polychlorinated biphenyls (PCBs). COPC's: arsenic, thallium, benzo(a)pyrene, chrysene. Of the PCBs analyzed, only Aroclor-1254 was detected in cleanup verification samples and was therefore evaluated as a site COC.

The COPC arsenic was not detected in cleanup verification samples at concentrations above Washington State background of 20 mg/kg (Washington Administrative Code 173-340) (the maximum detected value was 5.5 mg/kg) and is therefore not included as a COC in the evaluation of the site for cleanup verification. The COPCs thallium and the two polynuclear aromatic hydrocarbons (benzo[a]pyrene and chrysene) were not detected in cleanup verification samples at the detection limits specified in the RDR/RAWP and are therefore not included as COCs in evaluation of the site for cleanup verification.

An additional contaminant (lead) was identified from analysis of material excavated during remediation and evaluated as a site COPC. Lead was detected at levels above Hanford Site background of 10.2 mg/kg in cleanup verification samples and is therefore evaluated as an additional site COC for cleanup verification of the Landfill 1A site.

Landfill 1A (300-49) and Landfill 1B (300-50) have been surface stabilized.

Cleanup verification samples were taken on June 28, 2000. The site excavation and overburden soil sample data were recorded in HEIS as SAF B00-037.

At the completion of the remedial action, the total excavation was approximately 6,906 square meters (74,340 square feet) in area with a maximum depth of approximately 3 meters (10 feet). Approximately 17,761 metric tons (19,578 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility. All visible debris was removed from the Landfill 1A site, and the site was excavated to native soil. An additional 5,644 metric tons (6,221 tons) of material (overburden) identified as potentially clean was stockpiled at the site for potential use as backfill.

Results of the sampling, laboratory analysis, and data evaluations of the Landfill 1A site indicate that all remedial action objectives and goals for direct exposure, protection of

groundwater, and protection of Columbia River have been met.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. This site attained rural-residential standards: therefore, industrial land use controls are not necessary for this site.

Code:	300-50	Classification:	Accepted
Names:	300-50; Landfill 1b; UN-300-FF-1; UPR-300-FF-1	Reclassification:	Closed Out (5/29/2003)
Type:	Dumping Area	Start Date:	
Status:	Inactive	End Date:	
Description:	The site has been remediated and closed out. The site was an area of surface disturbance. After excavation and closure activities were completed the area was included in the 2004, 300-FF-1 Regrading Plan.		
Location:	The site was located directly south of 618-5. It was bounded on the south by the north perimeter fence of the North Process Pond (316-2), and on the west by the east perimeter fence of the Process Trenches (316-5).		
Related Sites/ Structures:	The site was associated with WIDS sitecode UPR-300-FF-1 and 300-49 (Landfill 1a).		
Waste Type:	Misc. Trash and Debris		
Waste Description:	A large number of discrete objects were detected by ground penetrating radar.		
Closure Info:	Remedial action objectives for the Landfill 1B site were established by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These objectives are documented in the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units (ROD) (EPA, 1996) and the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (1997 RDR/RAWP) (DOE/RL96-70).		

The selected remedial action for the Landfill 1B site included excavation to the extent required to meet specified soil cleanup levels and disposal of contaminated excavation materials at the Environmental Restoration Disposal Facility. The remedial action also included the removal and disposal of solid waste and all construction debris. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established in the 1997 RDR/RAWP and updated in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (2002 RDR/RAWP) (DOE/RL-2001-47). Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified from knowledge of the processes used in the 300 Area and previous 300-FF-1 Operable Unit investigations were listed in Table 2-1 of the 1997 RDR/RAWP.

The COCs and COPCs for this site identified in the 1997 RDR/RAWP consist of the following: COCs: cobalt-60, uranium-234, uranium-235, uranium-238, Polychlorinated biphenyls (PCBs). COPCs: thallium, benzo(a)pyrene, chrysene. Of the PCBs analyzed for, only aroclor-1254 and aroclor-1260 were detected in cleanup verification samples and are therefore evaluated throughout the cleanup verification package as COCs. The COPCs thallium and the two polynuclear aromatic hydrocarbons (benzo[a]pyrene and chrysene) were not detected in cleanup verification samples at the detection limits specified in the RDR/RAWP and are therefore not included as COCs in evaluation of the site for cleanup verification.

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the RAGs. At the completion of remedial action, the total excavation was approximately 10,498 square meters (113,000 square feet) in area with a maximum depth of approximately 3.1 meters (10 feet). Approximately 35,652 metric tons (39,300 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility. All visible debris was removed from the Landfill 1B site, and the site was excavated to native soil. Overburden material identified as potentially clean was stockpiled at the site for potential use as backfill at this waste site.

The results of the sampling, laboratory analysis, and data evaluations of the Landfill 1B site indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of Columbia River have been met.

Cleanup verification samples were collected from the excavation and overburden soil and analyzed for the established contaminants of concern. The excavation soil sample were collected on July 5, 2000. The overburden soil samples were collected on June 28, 2000. The sample results can be located on the HEIS database under the SAF number B00-038.

The CVP demonstrates that remedial action at the Landfill 1B site has achieved the RAOs and corresponding RAGs established in the approved ROD, the 1997 RDR/RAWP, and the 2002 RDR/RAWP. The remaining soils at the Landfill 1B site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the Landfill 1B site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the ERDF. These results also indicate that residual concentrations in remaining site soil will support future land uses that can be represented (or bounded) by the industrial land-use scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The CVP demonstrates acceptability for industrial land use; therefore, institutional controls limiting land use to industrial are required. Institutional controls preventing uncontrolled drilling or excavating are also required. The Landfill 1B site is verified to be remediated in accordance with the ROD and may be backfilled.

Code: 300-51	Classification: Accepted
Names: 300-51; Landfill 1c; UN-300-FF-1; UPR-300-FF-1	Reclassification: No Action (7/9/1997)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The debris has been removed. The site is no longer marked or posted.	
Location: The site is located at a small point of land directly east of the northeast corner of 316-2 (North Process Pond).	
Related Sites/Structures: The site is associated with WIDS sitecode UPR-300-FF-1.	
Waste Type: Misc. Trash and Debris	
Waste Description: The site contained radiologically contaminated surface debris.	
Closure Info: The debris at Landfill 1C (300-51) has been removed. This site was formerly part of UPR-300-FF-1.	

Code: 300-52	Classification: Accepted
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Names: 300-52; 300 Area Sanitary Trenches **Reclassification:** No Action (7/9/1997)

Type: Trench **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1996

Description: The 300 Area Sanitary Trenches site includes two septic tanks and unlined trenches that were connected to the 300 Area Sanitary Sewer System.

Location: The Sanitary Trenches are located north of the 316-1 Process Pond and south of the North Process Pond Scraping Disposal Area (618-12).

Process Description: While in operation, the site received sanitary waste from throughout the 300 Area and small discharges of chemical waste from the 3713 Sign Shop. On October 1, 1996 the 300 Area Sanitary Sewer System began to discharge to the City of Richland's sewage system. The pipeline to the 300 Area Sanitary Trenches was permanently isolated by welding a plate in place and filling manhole #6 with concrete.

Waste Type: Sanitary Sewage

Waste Description: The trenches received sanitary waste from 300 Area facilities.

Waste Type: Chemicals

Waste Description: Prior to 1985, discharges from the 3713 Sign Shop included an estimated 1 gallon (3.8 liters) per week of miscellaneous photochemicals used in the process. The trench has also received trace nonhazardous concentrations of carry over fixers, developers, inks, thinners, and solvents from sign developing operations and silkscreen cleaning.

Closure Info: The effluent pipes to the trenches were isolated in October 1996. Prior to being backfilled in 1999 surface debris (fencing and fence posts) was pushed into the trenches.

Code: 316-1 **Classification:** Accepted

Names: 316-1; South (Old) Pond; 300 Area South Process Pond **Reclassification:** Closed Out (7/23/2003)

Type: Pond **Start Date:** 1/1/1943

Status: Inactive **End Date:** 1/1/1975

Description: The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

The site is no longer marked or posted. The pond was a 32,000 square meter (8-acre), unlined infiltration pond containing five separate pond sections. Ponds 1, 2, and 3 were separated by two 9.1-meter (30-foot) dikes. Pond 4, the largest pond, was separated from Ponds 1, 2, and 3 to the west by a 4.9-meter (16-foot) dike and from Pond 5 to the east by 3.1 meters (100 feet) of land. The dikes were bulldozed into three sections, and the fill was used to cover loose material.

Location: The unit was located east of the 306 Building and west of the Columbia River.

Process Description: The 316-1 South Process Pond and 300 RFBP sites, collectively referred to as the 316-1 South Process Pond site, are the site of former high-volume liquid waste disposal activities located north of the 300 Area complex, near the Columbia River. The easternmost boundary of the 316-1 South Process Pond is approximately 49 meters (160 feet) west of the shoreline of the Columbia River. The 316-1 South Process Pond site was built in 1943 and was the first 300 Area process liquid disposal unit. It was originally a single, large infiltration pond to which dikes were later added, forming three settling ponds and a large main infiltration pond. The east lobe of the site was used by the 300 Area water treatment plant as a filter backwash pond

(WIDS site 300 RFBP). Combined process wastes discharged from the fuel fabrication facilities to the South and North Process Ponds ranged from 1,514,000 to 11,360,000 liters/day (400,000 to 3,000,000 gallons/day). During their operational life, the process ponds received thousands of kilograms of uranium as dissolved material and finely divided solids. Much of the uranium was carried with the infiltration water, but some remained in the pond soils. Discharging of waste to the process ponds ended in 1975.

Related Sites/ Structures: This site was associated with Retired Filter Backwash Pond (300 RFBP); the Contaminated Soil West of the South Process Pond (300-262); and unplanned release (UPR) sites UPR 300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37, and UPR-300-FF-1.

Waste Type: Process Effluent

Waste Description: The site originally received cooling water and low-level liquid wastes from the fuel fabrication facilities and early laboratories (313, 314, 3706 and 321 Buildings). Contaminants from these facilities included uranium, copper cobalt and small amounts of plutonium. Later, laboratory facility wastes went first to the 307 Retention Basins. Waste above discharge limits was diverted to holding tanks for disposal in the 200 Areas. The process ponds received waste via the 307 Retention Basins from 1963 to 1975.

Due to remedial activities, the uranium inventory at this site has been reduced. According to Mike Schwab (2000), an estimated 40,000 kilograms of uranium contained in soil was scraped from the pond and transported to the Environmental Restoration Disposal Facility (ERDF), near 200 West Area.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47,600 square meters (512,000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: 316-2	Classification: Accepted
Names: 316-2; North (New) Pond; 300 Area North Process Pond	Reclassification: Closed Out (8/24/1999)
Type: Pond	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1974

Description: This site consisted of seven separate sections separated by 3.7-meter (12-foot) wide dikes, with the entire 40,000-square meter (10-acre) area, surrounded by a dike 4.6 meters (15 feet) wide and approximately 3.0 meters (10 feet) high.

The site has been remediated and closed out. The radiological posted was removed. The pond is no longer marked or posted.

Location: The unit is located northeast of the 306 Building and north of the 316-1 Pond.

Related Sites/ Structures: Associated structures include: five 86-centimeter (34-inch) diameter by 7.3-meter (24-foot) long flumes. Two were filled with an unknown material and abandoned.

Waste Type: Process Effluent

Waste Description: The site originally received cooling water and low-level liquid process wastes from the fuel fabrication facilities and the early laboratories (313, 314, 3706 and 321 Buildings). Later, laboratory facility wastes went first to the 307 Retention Basins. Waste above discharge limits was diverted to holding tanks for disposal in the 200 Areas. The process ponds received

laboratory waste via the 307 Retention Basins from 1963 to 1975.

Due to remedial activities, the uranium inventory at this site has been removed. According to Mike Schwab (2000), an estimated 30,000 kilograms of uranium contained in soil was scraped from the pond and transported to the Environmental Restoration Disposal Facility (ERDF), near 200 West Area.

Closure Info: 316-2, 618-12 and UPR-300-7 were addressed as a group. The information below documents information for the group of sites.

Sample analysis identified four "subareas" with results above cleanups standards. These areas were excavated. Surface sampling and sampling from test pits was also done.

Code: 316-5	Classification: Accepted
Names: 316-5; 3904 Process Waste Trenches; 300 APT; 300 Area Process Trenches	Reclassification: Closed Out (8/13/1998)
Type: Trench	Start Date: 1/1/1975
Status: Inactive	End Date: 1/1/1994

Description: The site has been remediated and is no longer marked or posted. Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area. The maximum excavation depth was 14 feet deep.

The site consisted of two trenches running north-south, 18 meters (60 feet) apart (between centerlines). The bottom dimension of each trench was 468 meters (1,535 feet) long, 3.0 meters (10 feet) wide and 3.7 meters (12 feet) deep, with a side slope of 1:1.5. Separating the trenches is an earth dike, 15 meters (50 feet) wide at the bottom (top width varies) and 3.7 meters (12 feet) high.

The site was partly remediated through an expedited response action (ERA) in 1991. Remediation was completed in 1997 and the site was clean closed through RCRA and closed out under CERCLA regulations.

Location: The unit is located north of the 300 Area.

Release Description: Sixteen unplanned releases are associated with this site: UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27, UPR-300-28, UPR-300-29, UPR-300-30, and UPR-300-47. These sites were closed out when the cleanup verification package for the Process Trenches was approved.

Waste Type: Process Effluent

Waste Description: This unit served as the discharge site for the 300 Area Process Sewer system. The site received approximately 9.8E+06 liters (2.6E+06 gallons) of water per day. This water was chlorinated by the water filter plant for the 300 Area and contained minerals added to the water during use. Water discharged to the process sewer is used primarily for cooling purposes and is not modified. Other sources of discharge include steam condensates, janitorial solutions from washing and waxing floors, water treatment (primarily salt), laboratories, process water from fuel fabrication and other aqueous solutions not designated as dangerous wastes by WAC-173-303. The annual waste quantity is 4.5E+08 kilograms (1E+09 pounds) per year and reflects the total flow to the unit, not a volume of dangerous waste discharged to the unit. No dangerous wastes have been discharged to the unit since November 1985. All discharge to the trenches was discontinued on December 29, 1995. Discharges after that date are sent to the 300 Area

Treated Effluent Disposal Facility.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: 618-4	Classification: Accepted
Names: 618-4; Burial Ground No. 4; 318-4	Reclassification: Closed Out (7/12/2004)
Type: Burial Ground	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1961

Description: The site has been remediated and closed out. The waste unit was a single disposal pit.

Location: The burial ground was located approximately 0.5 kilometers (1/3 mile) north of the 300 Area northern boundary fence.

Process Description: The site received dry waste from the 300 Area operations.

Waste Type: Misc. Trash and Debris

Waste Description: The site contains an unknown quantity of uranium-contaminated miscellaneous materials.

During remedial activities, drums of depleted uranium packed in oil were uncovered. The presence of these drums was not previously known, therefore, the documented uranium inventory for this burial ground did not include these (estimated to be up to 1500) barrels of depleted uranium. The inventory contained in the drums has been estimated to be 110,600 kilograms (243,800 pounds) (Schwab 2000).

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: In 1998, drums of unknown material were uncovered during remedial action activities. It is suspected the drums contain depleted uranium filings and mineral oil

Closure Info: Remedial action objectives and goals for the 618-4 Burial Ground were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives were based on industrial land use and are documented in the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units (ROD).

Excavation operations were driven by remedial action objectives for removal of the burial ground contents as well as direct exposure limits, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals were established in the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (DOE-RL 1997) and updated in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (DOE RL 2004).

Arsenic, lead, and total uranium were identified as the contaminants of concern (COCs) for statistical verification sampling based on widespread distribution throughout the burial ground from the type and quantity of waste material encountered during excavation operations. Evaluation of verification sample results for the 618-4 Burial Ground indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the

Columbia River have been met for industrial land use.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established COCs. Sample numbers and a summary of the results were listed in Appendix A of the CVP, however the results have not been loaded into HEIS.

At the completion of field operations in 2003, the total excavation was approximately 7,342.6 meters squared (79,043 square feet) in area with a maximum depth of approximately 11 meters (36 feet) below the surrounding grade. Approximately 46,585 metric tons (51,360 tons) of bulk soil and debris were excavated from the site and disposed of at ERDF. In addition, 786 drums containing depleted uranium waste were excavated from the site and transported to ERDF for interim staging and/or disposal. Overburden material and excavated soil identified as potentially clean were stockpiled at the site for subsequent use as backfill material.

This CVP demonstrates that remedial action at the 618-4 Burial Ground has achieved the cleanup objectives established in the ROD (EPA 1996). Residual soil at the 618-4 Burial Ground has been sampled, analyzed, and modeled. Results indicated that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Consequently, the 618-4 Burial Ground is verified to be remediated in accordance with the ROD and may be backfilled.

Because residual soil concentrations indicated that cleanup levels for more stringent land uses may have been achieved for the 618-4 Burial Ground, a supplemental evaluation was performed against the unrestricted land-use cleanup objectives established in the 300-FF-2 ESD (EPA 2004). Results of the evaluation demonstrated that remedial actions at the site have achieved all of the objectives for unrestricted land uses. Consequently, no institutional controls are required at the site.

Code: 618-12	Classification: Accepted
Names: 618-12; North Process Pond Scraping Disposal Area	Reclassification: Closed Out (8/29/1999)
Type: Burial Ground	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1964
Description:	The pond had been backfilled with ashes. The backfilled area measured approximately 248 by 141 meters (814 by 462 feet). The site was closed out in conjunction with the North Process Ponds in 1999. Contaminated material was excavated and transported to ERDF. The site is not marked or posted.
Location:	The North Process Pond Scraping Disposal Area extends approximately 61 meters (200 feet) south of the North Process Ponds.
Process Description:	The scraping disposal area was used for disposal of uranium-contaminated soil from the bottom of the North Process Pond and from beneath the 321 Building during excavation for hydraulic core mockup
Waste Type: Soil	
Waste Description:	This site was used for disposal of uranium-contaminated soil that was scraped from the 316-2 Pond (North Process Pond) and some uranium-contaminated soil that was removed from beneath the 321 Building during excavation for hydraulic core mockup.
Closure Info:	316-2, 618-12 and UPR-300-7 were addressed as a group. The information below documents information for the group of sites.

Sample analysis identified four "subareas" with results above cleanups standards. These areas were excavated. Surface sampling and sampling from test pits was also done.

Code: 628-4	Classification: Accepted
Names: 628-4; Landfill 1D	Reclassification: Closed Out (7/1/2003)
Type: Burn Pit	Start Date: 1/1/1962
Status: Inactive	End Date: 1/1/1974

Description: The site has been remediated and closed out.

Location: The site was located just north of the west end of 300-52 (300 Area Sanitary Trenches).

Related Sites/ Structures: The unit was used as an alternate burning site in conjunction with the burning in Burial Ground 5 (618-5) to allow the units to cool between burnings.

Waste Type: Misc. Trash and Debris

Waste Description: The unit was used mainly for burning paper, wood, paint cans, and other operations debris; however, some incidental radioactive materials may have also been burned.

Closure Info: Remedial action objectives for the Landfill 1D site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These objectives are documented in the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units (ROD) (EPA 1996) and the 300-FF-1 Remedial Design Report/Remedial Action Work Plan (1997 RDR/RAWP) (DOE RL 1997).

The selected remedial action for the Landfill 1D site included excavation to the extent required to meet specified soil cleanup levels and disposal of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Areas of the Hanford Site. The remedial action also included the removal and disposal of solid waste and construction debris. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established in the 1997 RDR/RAWP and updated in the Remedial Design Report/ Remedial Action Work Plan for the 300 Area (2002 RDR/RAWP) (DOE RL 2002).

Waste site contaminants of concern (COCs) and contaminants of potential concern (COPCs) identified through process knowledge and previous 300-FF-1 Operable Unit investigations were listed in table 2-1 of the 1997 RDR/RAWP (DOE RL 1997) and included the COCs cobalt-60, uranium-234, uranium-235, uranium-238, and polychlorinated biphenyls (PCBs) (aroclor-1242, aroclor-1248, and aroclor-1254) and the COPCs arsenic, thallium, benzo(a)pyrene, and chrysene. An additional contaminant (lead) was identified from analysis of material excavated from the site during remediation and was evaluated as a site COPC.

Results of the sampling, laboratory analysis, and data evaluations indicate that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of Columbia River have been met.

At the completion of the remedial action, the total excavation was approximately 2,100 meters squared (22,600 square feet) in area with a maximum depth of approximately 5.7 meter (19 feet). Approximately 5,635 metric tons (6,198 tons) of material from the site were disposed at the Environmental Restoration Disposal Facility. All visible debris was removed and the site was excavated to native soil. Overburden material identified as potentially clean was stockpiled at the site for potential use as backfill.

The remaining soils at the Landfill 1D site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the Landfill 1D site containing COCs at concentrations exceeding RAGs have been excavated and disposed of at the Environmental Restoration Disposal Facility. These results also indicate that residual concentrations in remaining site soil will support future land uses that can be represented (or bounded) by the industrial land-use scenario, and that residual concentrations throughout the site are protective of groundwater and the Columbia River. The CVP demonstrates acceptability for industrial land use; therefore, institutional controls limiting land use to industrial are required. The Landfill 1D site is verified to be remediated in accordance with the ROD (EPA 1996) and may be regraded or backfilled.

The site meets cleanup standards and has been reclassified as "closed out" in accordance with the Hanford Federal Facility Agreement and Consent Order (Ecology et al. 1998) and the Waste Site Reclassification Guideline TPA-MP-14 (RL TPA-90-0001) (DOE-RL 1998).

Code: UPR-300-FF-1 **Classification:** Accepted

Names: UPR-300-FF-1; 300-FF-1 Hot Spots; Surface Radiation Survey for 300-FF-1; UN-300-FF-1 **Reclassification:** Closed Out (7/23/2003)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site has been remediated and closed out.

Location: The posted release sites were widely spaced in the area north of the 300 Area fence.

Related Sites/ Structures: The release sites were located in the 300-FF-1 Operable Unit and associated with WIDS sites 300-44, 300-49, 300-50, 300-51, the 316-1 South Process Pond and 316-2 North Process Pond.

Waste Type: Soil

Waste Description: Primarily, contamination was associated with the soil; however, some contaminated metal and other materials were also found. GM/P-11 instrument readings range from 100 to 50,000 counts/minute. Analysis of samples showed that the radiation levels were caused primarily by the presence of uranium. Some soil samples also contained relatively high concentrations of copper.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-8 **Classification:** Accepted

Names: UPR-300-8; Caustic Spill from 311 Tank Farm to Process Sewer **Reclassification:** Closed Out (5/14/1998)

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:** 1/1/1980

Description: This release was confined to the 300 Area Process Trench.

Location: UPR-300-8 originated at the caustic storage tank in the 311 Tank Farm and was confined to the 300 Area Process Trench.

Release Description: The release occurred from September 20-22, 1980. A defective valve in the storage tank steam

Description: sparge line allowed steam condensate to overflow the caustic storage tank contents into the process sewer system.

Related Sites/ Structures: UPR-300-8 was associated with the caustic storage tank in the 311 Tank Farm and the 316-5 Process Trenches.

Waste Type: Chemicals

Waste Description: The release consisted of 50% sodium hydroxide solution. The pH in the process sewer was 11.95.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-9	Classification: Accepted
Names: UPR-300-9; Nitric Acid Leak from 306-W to the Process Sewer	Reclassification: Closed Out (5/14/1998)
Type: Unplanned Release	Start Date: 1/1/1976
Status: Inactive	End Date: 1/1/1976

Description: This release originated in Room 120 of the 306-W Building and drained into the 300 Area process drainage system.

Location: UPR-300-9 originated in Room 120 of Building 306-W and drained to the process sewer leading to the north process trench.

Release Description: Nitric acid solution drained from a storage tank in Room 120 of the 306 Building into the 300 Area process drainage system.

Related Sites/ Structures: UPR-300-9 was associated with Room 120 of Building 306-W and the process sewer leading to the 316-5 process trenches.

Waste Type: Chemicals

Waste Description: The release consisted of nitric acid solution containing 267.9 pounds (121.5 kilograms) of depleted uranium.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-15	Classification: Accepted
Names: UPR-300-15; Uranium Bearing Acid Release from 313 to the Process Sewer	Reclassification: Closed Out (5/14/1998)

UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-20 **Classification:** Accepted
Names: UPR-300-20; Acid Release to the Process Sewer **Reclassification:** Closed Out (5/14/1998)
Type: Unplanned Release **Start Date:** 1/1/1980
Status: Inactive **End Date:**
Description: The release originated at the 313 Building Uranium Recovery Area and was confined to the 300 Area Process Trenches (316-5).
Release Description: On 8-19-80, an overflow of a storage tank in the 313 Building resulted in an overflow of the catch barrel into the process sewer system. The release was documented on Occurrence Report 80-26.
Process Description: An overflow of a storage tank in the 313 Building resulted in an overflow of the catch barrel into the process sewer system, releasing an unknown quantity of uranium-bearing nitric acid and surfuric acid into the 316-5 Process Trench.

Waste Type: Chemicals
Waste Description: Nitric and sulfuric acids with uranium in solution, quantity unknown.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-21 **Classification:** Accepted
Names: UPR-300-21; Nitric Acid Release to the Process Sewer **Reclassification:** Closed Out (5/14/1998)
Type: Unplanned Release **Start Date:** 1/1/1980
Status: Inactive **End Date:** 1/1/1980
Description: The release originated in the 333 Building and was confined to the 300 Area Process Trench.
Location: UPR-300-21 originated in the 333 Building Chemical Bay Area, but was confined to the 300 Area Process Trench.
Release Description: Nitric acid fill lines to Tanks 13, 15, and 16 in the 333 Building were removed. Some residual

Description: nitric acid from these lines was discharged into the process sewer.

Related Sites/ Structures: UPR-300-21 was associated with Tanks 13, 15, and 16 in Building 333 and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste contained a small quantity of nitric acid.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-22	Classification: Accepted
Names: UPR-300-22; Acid Release to the Process Sewer	Reclassification: Closed Out (5/14/1998)
Type: Unplanned Release	Start Date: 1/1/1980
Status: Inactive	End Date: 1/1/1980

Description: The release site originated in the 333 Building and was confined to the 300 Area Process Trench.

Location: UPR-300-22 originated in the 333 Building Chemical Bay Area, but was confined to the 300 Area Process Trench.

Release Description: Acid Etch Tanks No. 13 and 15 were leaking, discharging acid into the process sewer.

Related Sites/ Structures: UPR-300-22 was associated with Tanks 13 and 15 in Building 333 and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste consisted of a small quantity of etch acids (nitric and hydrofluoric acids).

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-23	Classification: Accepted
Names: UPR-300-23; Acid Release to the Process Sewer	Reclassification: Closed Out (5/14/1998)
Type: Unplanned Release	Start Date: 1/1/1980
Status: Inactive	End Date: 1/1/1980

Description: The release site was confined to the 300 Area Process Trench and originated at the 333

Building.

Location: UPR-300-23 originated in the 333 Building nitric and sulfuric acid fill lines and was confined to the 300 Area Process Trench

Release Description: Leak inspection revealed two leaks in the nitric and sulfuric acid fill lines.

Related Sites/ Structures: UPR-300-23 was associated with nitric and sulfuric acid fill lines and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste consisted of a small quantity of incoming etch acids (nitric and sulfuric acid).

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-24

Classification: Accepted

Names: UPR-300-24; Acid Release to the Process Sewer

Reclassification: Closed Out (5/14/1998)

Type: Unplanned Release

Start Date: 1/1/1980

Status: Inactive

End Date: 1/1/1980

Description: The release originated at the 333 Building Waste Acid System and was confined to the 300 Area Process Trench.

Location: UPR-300-24 originated in the 333 Building Waste Acid System, but was confined to the 300 Area Process Trench.

Release Description: Leak inspection revealed two small drip leaks around a newly installed etch tank.

Related Sites/ Structures: UPR-300-24 was associated with the 333 Building Waste Acid System and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste consisted of a small quantity of waste etch acids (nitric and hydrofluoric acid).

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-25

Classification: Accepted

Names: UPR-300-25; Release to the Process Sewer

Reclassification: Closed Out (5/14/1998)

Related Sites/ Structures: UPR-300-28 was associated with the 334A Storage Tanks, 334A Containment Pit, and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The release consisted of solution containing hydrofluoric, nitric, and sulfuric acids with copper, uranium, and zirconium in solution.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-29

Classification: Accepted

Names: UPR-300-29; Release to the Process Sewer

Reclassification: Closed Out (5/14/1998)

Type: Unplanned Release

Start Date: 1/1/1975

Status: Inactive

End Date: 1/1/1975

Description: This site originated in the Waste Acid System in the 333 Building and was routed to the 300 Area Process Trench.

Location: UPR-300-28 originated as leaks in the PVC chemical waste piping system in the 333 Building. The UPR was routed to the 300 Area Process Trench.

Release Description: Leak testing of the system revealed three leaks in the PVC piping system. In addition, one leak was found in the incoming nitric acid supply line.

Related Sites/ Structures: UPR-300-29 was associated with the PVC chemical waste drain piping system in the 333 Building and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste consisted of an unknown quantity of waste etch acids containing hydrofluoric, nitric, sulfuric, and chromic acids with copper, uranium, and zirconium in solution.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-30

Classification: Accepted

Names: UPR-300-30; Acid Release to the Process Sewer

Reclassification: Closed Out (5/14/1998)

Type: Unplanned Release

Start Date: 1/1/1975

Status: Inactive

End Date: 1/1/1975

Description: The release originated at the Waste Acid System in the 333 Building and was routed to 300 Area Process Trench.

Location: UPR-300-30 originated in the 333 Building and was routed to the 300 Area Process Trench.

Release Description: A chemical reaction occurred when a carbonate-bearing solution was added to the waste acid solution. This caused foaming and eventually an overflow of the process tanks that discharged to the process sewer

Related Sites/ Structures: UPR-300-30 was associated with the waste receiving tank and chemical processing tanks in the 333 Building and the 300 Area Process Trench.

Waste Type: Chemicals

Waste Description: The waste consisted of a small quantity of waste etch acids and spent film chemicals containing hydrofluoric, nitric, sulfuric, and chromic acids.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-300-32 **Classification:** Accepted

Names: UPR-300-32; Acid Leaks at the 333 Building **Reclassification:** Closed Out (7/23/2003)

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: The site has been remediated and closed out.

Location: UPR-300-32 occurred within the uranium bearing system in Building 333 and was routed to the 300 Area Process Pond.

Release Description: Leak testing of the system revealed one leak in the piping, three leaking transfer pumps, and five leaks in the uranium mill tank.

Related Sites/ Structures: UPR-300-32 was associated with piping, transfer pumps, the uranium mill tank at the 333 Building, and the 300 Area Process Pond.

Waste Type: Chemicals

Waste Description: The waste consisted of an unknown quantity of uranium etch acids containing nitric and sulfuric acid with uranium in solution.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-33 **Classification:** Accepted

Names: UPR-300-33; Waste Leak at the 333 Building **Reclassification:** Closed Out (7/23/2003)

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: The site has been remediated and closed out.

Location: UPR-300-33 occurred in the acid drain system and incoming acid fill line in the 333 Building and was routed to the 300 Area Process Pond.

Release Description: A leak test in the chemical waste drain system revealed 16 leaks from the 333 Building to the 334-A Building. Additionally, 5 leaks were found in the incoming acid fill lines (presumably nitric or sulfuric acid system).

Related Sites/Structures: UPR-300-33 was associated with the acid drain system and acid fill lines in the 333 Building and the 300 Area Process Pond.

Waste Type: Chemicals

Waste Description: The waste consisted of an unknown quantity of waste etch acids containing hydrofluoric, nitric, and chromic acids with copper, uranium, and zirconium in solution.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-34 **Classification:** Accepted

Names: UPR-300-34; Release to the Process Pond **Reclassification:** Closed Out (7/23/2003)

Type: Unplanned Release **Start Date:** 1/1/1973

Status: Inactive **End Date:** 1/1/1975

Description: The site has been remediated and closed out.

Location: UPR-300-34 was the result of the failed limestone neutralization tank at the 333 Building causing the acid stream to be routed to the Process Pond, north of the 300 Area.

Release Description: On August 1, 1973, failure of the limestone neutralization tank resulted in a discharge of acidic waste solutions to the ground beneath the tank (see 300-21) and the routing of the acid waste to the process pond. The spent etch acid solution potential contaminants are described in the Waste Characterization Report for Phase II of the Decontamination and Inspection Plan for the 333 Building and the 334-A Facility. Potential contaminants of concern are those generated by the 333 N-Fuels WATS processes. These can include nitrate and sulfate salts of hexavalent chromium, uranium, copper, aluminum, beryllium, nickel, manganese, hexafluorozirconates, and iron. The potential acids involved include nitric acid, sulfuric acid, and hydrofluoric acid.

Process Description: Prior to August, 1973, spent etch acids from the 333 N-Fuels manufacturing process drained via a polyvinyl chloride (PVC) line in the pipe trench (see 300-258) to an underground 14,380 liter (3800 gallon) tank (see WIDS 300-21) on the east side of the 333 Building. The waste acid was then pumped to an overhead waste acid storage tank (see WIDS 334 TFWAST) and from there it was pumped via a 5.1 centimeters. (2 inches.) PVC pipe in the Pipe Trench to the 313 Building for neutralization and waste disposal. On August 1, 1973, the spent etch acid waste solutions were rerouted to the process sewer which discharged to the 300 Area Process Pond pending the replacement of the failed underground waste acid receiving tank (WIDS 300-21). Sodium hydroxide was added to the Process Sewer during each discharge of spent acid solutions to neutralize (i.e. in-line) the waste acid solutions. pH control was used to maintain the discharges from the Process Sewer at a high pH. The 334-A Facility was put into service

in January 1975 with two acid receiving tanks (see WIDS 334-A-TK-B and C). The 334-A Facility received the spent etch acid solutions from the 333 Building via drain pipes in the Pipe Trench. In-line neutralization in the Process Sewer was discontinued with the availability of the 334-A Facility. The site of the limestone neutralization tank was partially excavated during removal of the failed tank. It is assumed that some of the acid-contaminated soil beneath the tank was removed and the subsoil area was neutralized with water and sodium bicarbonate. Records for the leak cleanup activities are being sought. The subsoil site was partially excavated for the installation of the foundation of the 334-A Facility. The 334-A Facility included a below grade tank pit area with three tanks, pumps, and associated piping (see 334-A-TK-B and 334-A-TK-C).

Related Sites/ Structures: UPR-300-34 was associated with the 333 Building, the limestone neutralization tank (see Site Code 300-21), the 300 Area Process Sewer, and the 316-1 Process Pond and UPR-300-32 through UPR-300-37.

Waste Type: Chemicals

Waste Description: An unknown quantity of waste etch acids were discharged to the soil. The waste etch acids contained hydrofluoric, nitric, and chromic acids with copper, uranium, and zirconium in solution.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-35	Classification: Accepted
Names: UPR-300-35; Leak at the 333 Building	Reclassification: Closed Out (7/23/2003)
Type: Unplanned Release	Start Date: 1/1/1973
Status: Inactive	End Date: 1/1/1973

Description: The site has been remediated and closed out.

Location: UPR-300-35 occurred in the acid overflow alarm system behind Tank 32 in the 333 Building Uranium Bearing Acid Facility and in a uranium bearing acid transfer pump. The unplanned release was routed to the 300 Area Process Pond (316-1).

Release Description: A leak was discovered in the overflow alarm system in the uranium mill tank. The uranium acid transfer pump was also discovered to be leaking.

Related Sites/ Structures: UPR-300-35 was associated with the overflow alarm system in uranium mill Tank 32, a uranium-bearing acid transfer pump, 316-1 South Process Pond and UPR-300-32 through UPR-300-37.

Waste Type: Chemicals

Waste Description: The waste consisted of an unknown quantity of uranium-bearing etch acids containing nitric and sulfuric acids with uranium in solution.

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000

sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-36 **Classification:** Accepted
Names: UPR-300-36; Acid Leak at the 333 Building **Reclassification:** Closed Out (7/23/2003)
Type: Unplanned Release **Start Date:** 1/1/1973
Status: Inactive **End Date:** 1/1/1973
Description: The site has been remediated and closed out.
Location: UPR-300-36 occurred in the acid drain system and incoming nitric acid lines of the 333 Building. The waste was routed to 316-1, 300 Area Process Pond.
Release Description: Leak testing of the acid drain system showed nine leaks. Four leaks were also found in the incoming nitric acid lines.
Related Sites/Structures: UPR-300-36 was associated with the acid drain system and incoming nitric acid lines in the 333 Building Waste Acid System, 316-1, the South Process Pond and UPR-300-32 through UPR-300-37.
Waste Type: Chemicals
Waste Description: The waste consisted of an unknown quantity of waste etch acids containing hydrofluoric, nitric, and chromic acids with copper, uranium, and zirconium in solution.
Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-37 **Classification:** Accepted
Names: UPR-300-37; 333 Building Leaks **Reclassification:** Closed Out (7/23/2003)
Type: Unplanned Release **Start Date:** 1/1/1972
Status: Inactive **End Date:** 1/1/1972
Description: The site has been remediated and closed out.
Location: UPR-300-37 occurred in the 333 Building Waste Acid System and was routed to the 316-1, 300 Area Process Pond.
Release Description: Leak testing of the waste line revealed several large and numerous small leaks that discharged directly to the process sewer.
Related Sites/Structures: UPR-300-37 was associated with acid tank drains in the 333 Building Waste Acid System and the 316-1, 300 Area Process Pond and UPR-300-32 through UPR-300-37.
Waste Type: Chemicals
Waste Description: The waste consisted of an unknown quantity of waste etch acids containing hydrofluoric, nitric, and chromic acids with copper, uranium, and zirconium in solution.
Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: UPR-300-47 **Classification:** Accepted

Names: UPR-300-47; 309 Building; Chiller System; Ethylene Glycol Release; Glycol Spill from the 309 **Reclassification:** Closed Out (5/14/1998)

Type: Unplanned Release **Start Date:** 1/1/1993

Status: Inactive **End Date:** 1/1/1993

Description: The release site was the sump in the machinery room at the 309 Building. The release site was cleaned up and waste generated during the cleanup was disposed of properly on May 7, 1993.

Location: UPR-300-47 originated at the number 3 water chiller, drained to the sump, and discharged to the process sewer in the 309 Building.

Release Description: On April 30, 1993 at approximately 1:30 a.m., a leak from the 309 Building cooling system was identified. About 2:00 a.m., the automatic sump pump in the 309 Building was turned off. The sump had collected the ethylene glycol and discharged approximately 800 gallons (3,030 liters) of 38 percent ethylene glycol solution to the process sewer before being turned off. At approximately 3:45 a.m. operations personnel observed green liquid coming from the process trench weir box. The release was due to failure of the expansion joint in the number 3 water chiller.

Related Sites/Structures: UPR-300-47 was associated with the 309 Building cooling system, sump, process sewer and process trenches (316-5).

Waste Type: Chemicals

Waste Description: The waste consisted of 38 percent ethylene glycol solution.

Closure Info: 316-5, UPR-300-8, UPR-300-9, UPR-300-15, UPR-300-19, UPR-300-20, UPR-300-21, UPR-300-22, UPR-300-23, UPR-300-24, UPR-300-25, UPR-300-26, UPR-300-27 and UPR-300-28, UPR-300-29, UPR-300-30 and UPR-300-47 were addressed as a group. The information below documents information for the group of sites.

Sample analysis found the north end of the process trenches to be contaminated above cleanup levels. This area was excavated. The southern portion of the trenches were below cleanup levels. No soil excavation was required in this area.

Code: UPR-600-15 **Classification:** Accepted

Names: UPR-600-15; Contaminated Material found at 618-4; UN-600-15 **Reclassification:** No Action (7/12/2004)

Type: Unplanned Release **Start Date:** 1/1/1979

Status: Inactive **End Date:** 1/1/1979

Description: The area is posted as "Underground Radioactive Materials". The release site was an area of soil outside the entrance to the 618-4 Burial Ground. The new fence was built in 1974; however, it was installed in a new location which left the release site outside of the burial ground boundaries. The previous fenced area included the release site.

Location: UPR-600-15 occurred in an area of soil running north and south of the west boundary fence of the 618-4 Burial Ground in the 600 Area.

Release Description: Burial Ground.

Related Sites/ Structures: UPR-600-15 was associated with the 618-4 Burial Ground.

Waste Type: Chemicals

Waste Description: The contamination came from buried fuel elements containing 0.15 percent uranium-235. A dose rate of 4,000 millirads/hour was detected on the soil surface.

300-FF-2

Code:	300 RLWS	Classification:	Accepted
Names:	300 RLWS; 300 Area Radioactive Liquid Waste Sewer; 300 Area RLWS	Reclassification:	None
Type:	Radioactive Process Sewer	Start Date:	1/1/1979
Status:	Inactive	End Date:	1/1/1998
Description:	The 300 Area Radioactive Liquid Waste Sewer (RLWS) consists of a network of underground, double-encased stainless-steel pipe (encased in reinforced-fiberglass or plastic pipe as secondary containment) draining to the 340 Vault. Leak detection systems are housed in the outer encasement. Fifteen valve boxes are spaced along the gravity-drained pipeline between generating facilities and the 340 Vault. On October 1, 1998, the 300 RLWS was isolated from the 340 Complex and generating facilities. The west leg of the RLWS collected discharges from the 329, 326, 325, 325-A and 327 buildings. The east leg collected effluent from the 324 building. Both legs join at valve box VB-8, between the 307 basins and the 340 Building. From VB-8 the flow drains to VB-9, and from VB-9 effluent drains to the 340 Vault. Generating facilities are isolated from the RLWS by closed valves outside of each facility. The 340 Vault tanks and the 340-A tanks are also valve-isolated from the RLWS.		
Location:	The unit is located beneath the 300 Area, connecting the 325, 325-A, 324, 326, 327, and 329 Buildings with the 340 Facility Complex. Coordinates provided by Fluor Hanford as the main source to the pipeline system are: N 115930.4 E 594171.2 These coordinates are for a location on the south side of the 340 Building complex.		
Process Description:	The sewer system is designed to transfer radioactive liquid wastes from the generating facilities to the 340 Complex. The 340 Complex receives and samples the effluent. High activity effluent is transferred to the 200 Area for storage and disposal.		
Related Sites/ Structures:	Structures associated with the system include the 324, 325, 325-A, 326, 327, and 329 Buildings. Valve boxes VB-1 through VB-15 regulate flow through the system. From VB-9, the RLWS flows into the 340 Vault tanks. At each generating facility, instrumentation and a valve connect the Retention Process Sewer (RPS) to the RLWS. Prior to RLWS isolation in 1998, if the instrumentation detected activities in RPS waste higher than the alarm point, the valve routed the RPS waste into the RLWS. A transfer station at the 307 retention basins was also available to route RPS waste to the RLWS.		
Waste Type:	Process Effluent		
Waste Description:	The sewer received radioactive liquid waste from various 300 Area research and development laboratories. Wastes consisted of radioactive effluent with small quantities of various chemicals, decontamination solutions, acids and bases. Effluent was typically derived from Hanford Site groundwater samples, tank waste samples, contaminated sediments, destructive examination of nuclear fuels, R&D process wastes, and residual waste from waste treatment studies. The waste was sampled at the 340 complex and stored for less than 90 days. Waste was then transported to the 200 West Area for storage or disposal.		

Code:	300 RRLWS	Classification:	Accepted
Names:	300 RRLWS; Contaminated Sewer; Crib Waste System; Intermediate Level Radioactive Liquid Waste System; 300 Area Retired Radioactive Liquid Waste Sewer System; 300 Area Retired RLWS	Reclassification:	None

Type:	Radioactive Process Sewer	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1975
Description:	The 300 Area Retired Radioactive Liquid Waste Sewer (RRLWS) is a network of 5-, 8-, 10-, and 15-centimeter (2-, 3-, 4-, and 6-inch) single-walled stainless steel piping and carbon steel fittings buried between 3 and 6 meters (10 and 20 feet) below grade. A separate 8-centimeter (3-inch) carbon steel transfer line installed in 1960 connected the 309 Building to the 340 Complex. No isolation valves, radiation monitors, or other leak detection capabilities were built into the RRLWS system. Since the potential for corrosion was low, the retired system was abandoned in place.		
Location:	The unit lies below grade in the 300 Area. Brass monuments locate several of the sewer clean outs. Coordinates provided by Fluor Hanford as the main source to the pipeline system are: N 115930.4 E 594171.2 These coordinates are for a location on the south side of the 340 Building complex.		
Process Description:	The unit is retired and does not receive effluent. While in service, the system transferred radioactive liquid waste from laboratories and facilities in the 300 Area to the 340 Complex for sampling and disposal.		
Related Sites/Structures:	Structures associated with the retired system include the 340 Complex, which received and treated effluent from the sewer system; the 308, 309, 324, 325, 326, 327, and 329 Buildings, which discharged effluents to the system; and the brass monuments located above eleven of the sewer clean outs.		
Waste Type:	Process Effluent		
Waste Description:	The unit received radioactive wastes from various 300 Area facilities including the fuel fabrication and research and development laboratories. Wastes discharged to the sewer included water and small quantities of chemicals, decontamination solutions, aqueous fuel fabrication solutions, acids, and bases. Wastes discharged to the system by the 309 Building included reactor operational wastes such as resin backwash and deionizing solutions. The system handled approximately 100,000 liters per month (25,000 gallons per month) of beta-gamma waste with an upper radiation level of 20 rem per hour. A 1992 video survey shows that highly corrosive materials were transferred by this system. The survey also suggests that mercury contamination and high radiation levels are present.		

Code:	300 VTS	Classification:	Accepted
Names:	300 VTS; In-Situ Vitrification (ISV) Test Site; 300 Area Vitrification Test Site	Reclassification:	Interim Closed Out (3/6/2006)
Type:	Process Unit/Plant	Start Date:	1/1/1983
Status:	Inactive	End Date:	1/1/1986
Description:	The site has been remediated and interim closed out. The site consisted of a mobile pilot plant trailer, a Terra-Vit melter structure, Large-Scale ISV Off-Gas Assembly (hood), storage units, metal sheds, sea-land units, spare parts and other support structures, most of which were removed in 1999. The vitrified material and soil, miscellaneous equipment, empty barrels, crates, metal scaffolding, and pallets of miscellaneous materials were also removed. Five in-situ vitrified monoliths (up to 1000 tons) had been in the ground on the west side of the site. One of these monoliths was located below the Large-Scale Off-Gas Hood. Within the test site was a fenced concrete pad where an electrical substation had been located. The electrical transformer pad was a separate waste site, (300-231, Vitrification Test Site Transformer Pad, Substation C3-S15). The transformers have been removed.		
Location:	The area was located west of Route Four South, across from the 300 Area and 9 meters (30		

feet) south of 618-7 Burial Ground.

Process Description: The site was used in the 1980's and 1990's as a field demonstration site for the melting of soils containing waste simulatates. Tests using PCB's and limited tests with very low levels of radioactivity were conducted at the site. The site was used by Pacific Northwest National Laboratory (PNNL) between 1983 and 1986 as a field demonstration site for in situ vitrification (ISV) of soils containing simulated waste. After the vitrification tests were conducted in the 1980s, all contaminated soil and equipment was removed from the site. In 1993 a large-scale melter (the Terra-Vit) was constructed at the site but never used. During 1998 and 1999 the ISV site was cleaned up by PNNL for transfer to the Bechtel Hanford, Inc. surveillance and maintenance program. In-situ vitrification (ISV) was a thermal treatment process that converted contaminated soils and sludges into a glass and crystalline product. An electrical current was passed among an array of four electrodes imbedded in the contaminated soil or sludge, melting and glassifying it. The process continued outward and downward until the appropriate vitrification depth was obtained. Radioactive mixed waste (RMW) and dangerous waste constituents were stabilized in the glass and crystalline product. Organic contaminants were destroyed by pyrolysis, and the pyrolysis products oxidized as they migrated to the surface. An off-gas assembly was used to collect and treat off-gases to ensure complete containment of the waste materials. PNNL operated four treatability testing units (bench-, engineering-, pilot-, and large-scale). The engineering and bench-scale units were located in the 324 Building. The pilot and large-scale units were transportable within the Hanford Site. The maximum design capacity of the large-scale unit (at the ISV site) was 64,345 liters (17,000 gallons) per day.

Related Sites/ Structures: The site was associated with the 300 Area Thermal Treatment Research and Development Facilities and 300-231.

Waste Type: Soil

Waste Description: The site contains soil and vitrified blocks remaining from testing

Waste Type: Soil

Waste Description: Vitrification was performed on wastes containing americium, plutonium, cesium, cobalt, strontium, and ruthenium. After these tests were performed, the site was cleaned up to regulatory limits and the area released. Other simulated waste tests were performed which produced solid waste materials including five monoliths weighing up to 1000 tons. These large monoliths remain in the ground as of 7/29/98. All simulated in-situ vitrification tests were performed using chemical additives which will require a waste disposition review as part of the site characterization process.

Empty ethylene glycol drums remain at the site. Some cooling systems may still contain glycol.

Waste Type: Equipment

Waste Description: The site contains excess piping, drums, electrodes, bricks, transformers, HEPA filters, off-gas handling units, cement/grout materials, glass frit, and storage sheds. Some of the material on outside pallets is deteriorating because of weathering.

Closure Info: The Cleanup Verification Package for the 300 VTS Waste Site (CVP) has documented that the site was remediated in accordance with the Record of Decision for the 300-FF-2 Operable Unit, Hanford Site (ROD), as modified by the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision (ESD). Remedial action at the site has achieved the Remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) established in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

Remedial action at the 300 VTS site began in December 2004. The ISV melter structure was demolished using mechanical shears. The off-gas containment hood was sheared and sent to

ERDF for disposal. The support frame was sheared and the scrap metal recycled. Test equipment and buried vitrified monoliths have been demolished or excavated, removed from the site, and recycled or disposed. The rubble was then sent to 600-246, (Gravel Pit #9, Inert/Demolition Waste Landfill) for disposal. All rubble met the requirements of the February 2005 inert landfill regulation (Washington Administrative Code [WAC] 173-350-410).

Two test trenches were also excavated, the locations of which were based on historical information and geophysical anomalies. No soil contamination, except cesium-137, which was below the RAGs, was found in the test trenches. Final cleanup verification samples were collected on August 22, 2005, to confirm acceptability of residual contaminant concentrations in the soil. Based on the overall footprint of the area and depth of excavation, the site was classified as one shallow zone decision unit. The waste site contaminants of potential concern (COPCs) were identified in the 300 Area Remedial Action Sampling and Analysis Plan (SAP). Following excavation of the site, final contaminants of concern (COCs) included: americium-241, cesium-137, cobalt-60, plutonium-238, plutonium-239/240, ruthenium-106 and strontium-90.

The final verification samples (J03WW7 through J03WW9 and J03WX0 and J03WX1) were collected on 8/22/05 and submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as described in the SAP. The remaining soil at the site has been sampled, analyzed, and evaluated.

A total of 83 metric tons (91 US tons) of structural steel was recycled from the demolition of the Terra-Vit melter and off-gas hood support structure. Disposal of the off gas containment structure resulted in 10 metric tons (11 US tons) of material being sent to ERDF. A total of 5,218 metric tons (5,752 US tons) of vitrified soil was excavated and sent to Gravel Pit #9, Inert/Demolition Waste Landfill (600-246) for disposal.

Results indicated that the site supports future land uses that can be represented (or bounded) by the unrestricted land-use scenario and the residual concentrations at the site poses no threat to groundwater or the Columbia River. The site has no deep zone. Consequently, the 300 VTS site is verified to be remediated in accordance with the ROD and the ESD and may be backfilled.

Code: 300-1	Classification: Accepted
Names: 300-1; Old North Richland Automotive Maintenance Yard	Reclassification: No Action (2/24/1999)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The site was the proposed location of the Environmental and Molecular Sciences Laboratory (EMSL) until excavations for construction began. During excavations, it was discovered that a Native American burial ground is in the area.	
Location: The site is located east of the George Washington Way extension and south of the 300 Area fence line, inside the chained off area.	
Waste Type: Misc. Trash and Debris	
Waste Description: The area was used by North Richland residents to conduct automotive repairs and recreational activities. No evidence exists that radiological contamination may be at the site. Debris removed from the area in late 1993 included empty bottles, lumber, empty cans of automotive oil, 19-liter (5-gallon) cans and buckets, an 46-centimeter (18-inch) wooden wire spool, an automotive front grill, old automotive oil filters, etc.	
Closure Info: Due to the culturally sensitive issues in this area, the decision makers associated with the 300-	

milligrams/kilogram. No spills to the soil have been documented by BPA. On October 18, 1990, the removal crew discovered radioactive yellow cake uranium clinging to the below ground portions of the footings.

Process Description: The DOE 351 Substation was operated by the Bonneville Power Administration (BPA) from March 30, 1973 until February 11, 1991, when all BPA equipment was removed. Mineral oil containing polychlorinated biphenyls (PCBs) and solvents were used during routine equipment maintenance. No spills to the soil were documented by the Bonneville Power Administration (BPA). Four capacitors (capacitors 3 and 31 north phase and capacitors 17 and 18 middle phase) were deenergized and removed in August 1989 because of insulating oil leaks. There is no evidence, however, that fluid leaked onto the ground from any of the removed capacitors. See analytical results for soil samples. On October 17, 1990, removal of all BPA equipment was begun. On October 18, 1990 the removal crew discovered radioactive yellow cake uranium clinging to the below ground portions of the footings. The uranium is most likely associated with DOE-RL's fuel fabrication activities in the 300 Area and not any BPA related activities. Work was suspended until the area could be evaluated. Removal of the items (excluding the uranium contaminated footings) was completed on February 11, 1991.

Waste Type: Chemicals

Waste Description: The waste is uranium contaminated soil. According to the referenced document, there is a potential for spillage of polychlorinated biphenyl (PCB) to the soil. This statement was based on four samples that contained PCBs in the range of 1 to 3 milligrams per kilogram. The 300-FF-2 Record of Decision for this site also lists solvents as a potential contaminant.

Code: 300-5

Classification: Accepted

Names: 300-5; 3709A Fire Station; 300 Area Fire Station Fuel Tanks

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site was two underground fuel tanks, the pump island, ancillary piping, and contaminated soil. An unknown quantity of contaminated soil, under the fuel dispensing island at the 3709-A Building (300 Area Fire Station) was discovered on April 10, 1992. The fueling facility consisted of two 1893 liter (500 gallon) underground storage tanks (USTs), one containing unleaded gasoline (Tank 300-FS-15), the other diesel (Tank 300-FS-16), and approximately 9.1 meters (30 feet) of piping that lead to the fuel dispenser and island. The release was due in part to sections of corroded flex piping (with multiple pinhole size perforations) located directly under the pump island and also possibly from loose pipe/pump fittings. The pump island was removed immediately following the removal of the tanks and piping. Evidence that confirmed the release consisted of petroleum product odors that were detected by personnel immediately following the lifting of the pump island. The release was additionally confirmed by sampling performed during the site assessment. The system was undergoing permanent closure due to a failed tightness test conducted on August 26, 1991. These tanks were removed on April 14, 1992. The site is not marked in the field. Based on maps and descriptions, the site is under a paved portion of the access driveway on the southeast side of 3709A Building. A section of the asphalt has been patched where the tanks were dug up.

Location: The site is in the 300 Area, adjacent to the 3709A Fire Station on the south side, south and west of the east wall of 3709A. From this site it is approximately 28 meters (92 feet) to groundwater monitoring well #399-5-4B.

Release Description: The leaks are associated with two 1890 liter (500 gallon) tanks and were discovered during a tightness test of the tanks in August 1991. One of the tanks contained gasoline and the other,

diesel fuel. The release was due in part to sections of corroded flex piping located directly under the pump island and also possibly from loose pipe/pump fittings.

Process Description: The gasoline and diesel tanks were used to refuel vehicles. The leaks were likely caused by corroded flex pipes and leaks in the fittings.

Related Sites/ Structures: The site was associated with the 300 Area Fire Station, also known as building 3709A.

Waste Type: Oil
Waste Description: One of the storage tanks contained gasoline and the other contained diesel fuel.

Code: 300-6	Classification: Accepted
Names: 300-6; 366/366A Fuel Oil Bunkers	Reclassification: Interim Closed Out
Type: Storage Tank	Start Date: 1/1/1964
Status: Inactive	End Date: 1/1/1998

Description: The site appears as a large excavated area with soil staged adjacent to the excavation. The soil will eventually be used as fill. The area is isolated by a rope and orange safety fence.

Location: The site is in the 300 area on the south side of the 3715 and 303J buildings.

Process Description: Prior to excavation, the oil bunkers had consisted of four separate underground concrete fuel oil tanks (bunkers). The site was north of a low berm wall (about 0.6 meters [2 feet] tall) and appeared on the surface as a rectangular concrete pad with manhole access plates and equipment and piping on the surface. Bunker 366 was under the west end of the concrete pad, and 366A was under the east end. Fuel oil tanks #1 and #2 were designated 366, while tanks #3 and #4 were designated as 366A. The soil on the south side of the fuel bunkers appeared black, due to coal residue from the coal storage area that had been located here. Prior to 1964, the 384 Powerhouse was fueled with coal. The bunkers were installed to store fuel oil for the 384 powerhouse boilers when they were converted to oil burners. The first of the tanks was installed in 1964 to support the first oil-fired boiler at the 384 Powerhouse that same year. The additional three underground fuel oil tanks were constructed between 1970 and 1974 to support the conversion of coal fired boilers to oil. The tanks were originally unlined and used to store Bunker C Oil or Fuel Oil #6. A liner was installed in each tank when the decision was made to utilize #2 Diesel Oil in 1972. In approximately 1980, the powerhouse switched back to Bunker C Oil because of the increased cost of diesel. The liners were left in place. During the time when #6 fuel was being used, the fuel from the underground tanks was continually heated using closed-loop steam lines in the tanks. The fuel oil was pumped from the main tanks (the bunkers) into the day tanks (site code 300-223) for additional heating prior to use for steam production in the powerhouse. The fuel oil becomes a very thick tar-like substance when left unheated and loses the ability to flow. In 1991 the liner material had begun to deteriorate and sections of the liner were plugging up the suction heater, causing the pumps to cavitate. Also, the steam coils on the fuel bundles had deteriorated to the point that they were discharging steam into the fuel. There was also a significant build-up of sludge in the bottom of the tanks. A project was then completed to remove all of the sludge from the tanks and remove the liners and the river rock under the liners from the tanks. Several motors, heaters and other equipment pieces were also replaced under the same project. Since they were not required under regulation, neither the rock nor the liners were replaced.

Related Sites/ Structures: The site was related to the 384 Powerhouse, the 384 Powerhouse Fuel Oil Day Tanks #1 and #2

(WIDS Site 300-223), and ancillary piping (300-273).

Waste Type: Oil
Waste Description: Prior to the tanks and residual fuel being removed, the bunkers stored product fuel oil for use in the 384 powerhouse boilers.

Code: 300-7 **Classification:** Accepted

Names: 300-7; Possible Early Burial Ground Site;
Undocumented Solid Waste Burial Ground
Adjacent to 618-8 **Reclassification:** None

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: The site is a small rise that extends to the north and west from the 300 Area North Parking Lot. It forms an irregular shaped polygon where the north edge of the parking lot is the south edge of the waste site. The site can be seen as a scarred area in several historical photographs (EMO-1026, pages A.26, A.30, A.34 labeled Burial Ground 8). Surface debris piles can be seen and subsurface disturbances have been identified with Ground Penetrating Radar. Currently, the site is covered with natural vegetation. Some of the visible surface debris consists of concrete, trash and cables. The area of subsurface anomalies is not marked.

Location: The site is located north of the 300 Area North Parking Lot, adjacent to and west of the north end of 618-8 Burial Ground. The results of a Global Positioning survey done in 1998 enlarged the footprint of the site.

Waste Type: Construction Debris
Waste Description: The site contains solid construction debris, such as concrete, metallic waste, asbestos, and uranium contamination.

Code: 300-8 **Classification:** Accepted

Names: 300-8; Aluminum Recycle Storage Area;
Aluminum Shavings Area; North of Railroad and
North of 618-8 **Reclassification:** Interim Closed Out (10/28/2005)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The has been remediated and interim closed out. The Aluminum Recycle Staging area consisted of six irregularly shaped Soil Contamination Areas located along the railroad track north of 300 Area. The contamination areas were on both sides of the railroad track and separated by unposted dirt roads.

Location: The site was located north of 300 Area and 618-8. It was west of the 316-5 Process Trenches. It consisted of a posted Soil Contamination Area adjacent to the rail spur. Another posted Soil Contamination Area was north of the rail road spur, across a dirt road.

Process Description: The site was used to stage scrap metal from the 300 Area. In 1962, recycling of aluminum scrap began. The material was staged until a sufficient quantity was collected for offsite salvage vendors to propose bids. The accumulated metal piles and the process of loading it onto rail cars scattered metal shavings over a large area. Some of the metal was radiologically contaminated with low levels of uranium and beryllium.

Waste Type: Misc. Trash and Debris
Waste Description: The area was used to stage uranium contaminated aluminum scrap to be sold to salvage

Description: contractors. Other contaminants include aluminum-silicon alloy and beryllium contaminated aluminum.

Closure Info: The Cleanup Verification Package for the 300-8 Waste Site (CVP-2005-00007), documented that remedial action objectives and goals have been achieved and meet the cleanup standards specified in the Record of Decision for the 300-FF-2 Operable Unit (ROD) and Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP). Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River.

Remedial action at the site was conducted from December 2004 to May 2005. Excavation of the site included the removal of small quantities of miscellaneous metal construction-type debris (e.g., nuts, bolts), aluminum metal shavings, and soil. No indications of liquid waste disposal or land disposal restricted materials were observed during excavation.

Initially, material within the site boundaries was removed to a depth of 0.3 meters (1 foot). Following excavation, geophysical surveys and ground-truthing excavations indicated that significant quantities of metal shavings, on the order of one to a few per square meter, remained at the site. Consequently, an additional 0.3 meters (1 foot) of material was removed from the entire area. Following this excavation, additional geophysical surveys were performed at thirty-five randomly located 3- by 3 meters (10 by 10 feet) test areas within the waste site boundaries. Within the 324 meters squared (3,488 square feet) surveyed, fewer than 10 discrete pieces of metallic debris were detected. Based on these results and ground-truthing excavations, it was concluded that remediation was complete.

Final cleanup verification samples, including QA/QC samples, were collected on July 27 and 28, 2005, to confirm acceptability of residual contaminant concentrations in the soil. Based on the overall footprint of the area and depth of excavation, the waste site was classified as four shallow zone decision units. The final verification HEIS samples, J03VD4 through J03VD9 and J03VF0 through J03VF9, were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as described in the 300 Area Remedial Action Sampling and Analysis Plan (SAP).

The contaminated materials, approximately 39,750 metric tons (43,820 U.S. tons) of material, was removed for disposal at the ERDF. Results of post-remediation geophysical surveys demonstrated that only trace levels of metallic debris remained at the site. The remaining soil at the site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Consequently, the 300-8 waste site is verified to be remediated in accordance with the ROD.

Because residual soil concentrations indicated that cleanup levels for more stringent land uses may have been achieved for the 300-8 waste site, a supplemental evaluation was performed against the unrestricted land-use RAGs established for the 300 Area in the ESD. This evaluation demonstrated that the results of verification sampling do not preclude any future uses (as bounded by the rural-residential scenario) and allow unrestricted use of shallow zone soils. In consideration of this and because the site has no deep zone, no institutional controls are required at the 300-8 waste site.

Code: 300-9	Classification: Accepted
Names: 300-9; Possible Early Burial Ground Sites North of RR and North of 618-8; Solid Waste Burial Ground	Reclassification: None
Type: Burial Ground	Start Date: 1/1/1943

Status: Inactive**End Date:** 1/1/1945

Description: The location of the site referred to as the Early Burial Ground is not well documented. It has been confused with the 618-8 Burial Ground and the Undocumented Solid Waste Burial Ground (site code 300-7) located adjacent to 618-8. A suspect location was identified in the 300-FF-2 Technical Baseline Report using a historical aerial photograph (negative #2530 taken in 1954), but additional review of the information determined that site to be a borrow pit. Other historical aerial photographs (negative #9619 taken in 1962) were studied and determined two other suspect areas. These locations were selected for geophysical surveys during the 300-FF-2 Operable Unit Limited Field Investigation activities. Later, an aerial photograph taken in 1948 was found (picture number 89711).

Location: The exact location of this site has never been confirmed. It was only described as a trench located 686 meters (750 yards) north of the 300 Area. Hand drawn sketches in two documents (HW-39076 and a letter report from AJ Stevens to AR Keen) indicate the location is north of the 300 area, east of the railroad tracks.

Waste Type: Misc. Trash and Debris

Waste Description: Actual burial inventory is unknown. Process knowledge suggests the waste would consist of the uranium contaminated waste from very early 300 Area experimental processes.

Waste Type: Misc. Trash and Debris

Waste Description: Uranium contaminated aluminum shavings are scattered on the surface of the site. Other surface contaminants may include aluminum-silicon alloy and beryllium contaminated aluminum.

Code: 300-10**Classification:** Accepted**Names:** 300-10; Burial Trench West of Process Trenches**Reclassification:** Closed Out (12/17/1997)**Type:** Burial Ground**Start Date:** 1/1/1950**Status:** Inactive**End Date:**

Description: The northwest corner terminates very near a dirt road that intersects the midpoint of the west 316-5 Process Trenches. A field walkdown done on 11/18/94 reported the site appeared as a soil covered field with natural vegetation. The site has been remediated and closed out, and revegetated with crested wheatgrass.

Location: The site is adjacent to the west side of the 316-5 Process Trenches.

Closure Info: During the preparation of the RDR/RAWP, a decision was made to include this site with the remediation activities of the 316-5 Process Trenches in the 300-FF-1 Operable Unit work scope. The contaminated soil was removed and disposed of in the Environmental Restoration Disposal Facility (ERDF). Analysis of verification samples of the remaining soil show the area to be below cleanup standard levels. The area no longer poses a threat to human health or the environment and a December 17, 1997 (date approved) TPA change form (Control Number 116) lists the site as Closed Out.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. IC information in the closure documents for some 300 Area sites, including this one, is incomplete. ICs limiting land use to industrial uses are required, as are controls preventing uncontrolled drilling or excavating. The ICs for this site have been revised accordingly.

Code: 300-11**Classification:** Accepted**Names:** 300-11; 382 Pumphouse UGT; 382-1;**Reclassification:** None

Pumphouse Underground Gasoline Tank**Type:** Unplanned Release **Start Date:** 1/1/1943**Status:** Inactive **End Date:** 1/1/1992**Description:** The site was releases to the soil that were discovered following the removal of an underground gasoline tank in September 1992. The tank had failed a leak test. The tank was removed, however, the contaminated soil has not been cleaned up. See Section on Cleanup Activities. The site is not marked in the field and currently appears as a graveled lot adjacent to the 382 Building. Originally, there were 3 tanks at this location, Tanks 382-1, 382-2, and 382-3. Tanks 382-2 and 382-3 were excavated and removed in 1994. A full site assessment (WAC 173-360-385) was performed for these tanks. There was no contamination found in the soil. (See Site Comment Section and Field Work - Analytical Sampling for these two tanks).**Location:** The site is in the 300 Area, near the intersection of Wisconsin and Apple Streets. The three underground gasoline storage tanks were near the northwest corner of the 382 Pumphouse Building. The 382-1 tank was located at the northwest corner of the building. The 382-2 tank was located on the west side of the 382 Building about 3 meters (10 feet) south of the 382-1. The 382-3 tank was located on the west side of the 382 Building 4 meters (13 feet) west of the 382-2 fuel tank.**Release Description:** When tank 382-1 was removed, an unknown quantity of contaminated soil was discovered under the south end of the tank. The south end of the excavation corresponded to the fill-pipe end of the tank. Soil samples and field-screening samples were analyzed using an innumoassay field test kit for petroleum products. Soil collected from the south end of the tank excavation contained greater than 1,000 parts-per-million (ppm) Total Petroleum Hydrocarbons (TPH). Soil collected from the north end of the tank excavation was below the regulatory limit of 100 ppm TPH.**Process Description:** The underground gasoline fuel storage tanks were used to store leaded and unleaded gasoline for use by the emergency gasoline engine powered pumps in the 382 Building.**Related Sites/ Structures:** These tanks (382-1, 382-2, and 383-3) were related to the adjacent 382 Pumphouse Building.**Waste Type:** Oil**Waste Description:** The gasoline fuel storage tanks were used to store leaded and unleaded gasoline for use by the emergency gasoline engine powered pumps in the 382 Building. Tank 382-1 was removed in 1992. Tanks 382-2 and 382-3 were removed in 1994.

Code: 300-15 **Classification:** Accepted**Names:** 300-15; 300 Area Process Sewer System **Reclassification:** None**Type:** Process Sewer **Start Date:** 1/1/1943**Status:** Active **End Date:****Description:** The site is an underground process sewer extending throughout the 300 Area for the disposal of process wastes such as steam condensate, cooling water and non-regulated liquids. The piping consists primarily of 20 centimeter (8 inch) vitrified clay pipes with acid-proof joints. Many other materials have been used in more recent retrofits and system modifications, including cast-iron, stainless-steel, carbon steel, and polyvinyl chloride. Large sections of the process sewer were re-lined with cured-in-place epoxy during the 1995 Project L-070 system upgrade. These process sewer feeder pipes join larger 46 centimeter (18 inch) diameter vitrified clay pipes that discharge to the Treated Effluent Disposal Facility (TEDF) Sump northeast of 306E Building. Prior to 1995, the system discharged to the 316-5 Process Trenches, which were constructed in

1975. Before 1975 the process sewers discharged to the north and south process ponds (WIDS Sitecodes 316-2 and 316-1).

Project L-070 upgraded the 300 Area process sewer and retention process sewer systems with a combination of vacuum, gravity and pressurized piping. The process sewer had the ability to discharge up to 760 liters per minute (200 gallons per minute), though rates of 4900 liters per minute (1300 gallons per minute) were observed during the late 1980's. Other ancillary systems are also part of the 300 process sewer. These systems include the flow monitoring stations, catch basins, sample ports, pumps, and the lift stations.

Location: The site is located in the 300 Area and is a network of underground piping extending throughout the area.

Release Description: In October 1950, a sub-contractor was excavating around the process sewer line from the Metal Fabrication Plant at a location between the fabrication plant and the instrument shop. The excavation work was necessary to encase the clay tile pipe in concrete. The excavator broke a sanitary line connected to a 20 centimeter (8 inch) 303 Area process waste line. During the line break investigation, a dose rate of 50 mr/hr was noted on an upright timber protruding from the soil, located northwest of the process line excavation. Work was stopped and inquiries were made regarding the wooden structure and contamination. It was determined that a temporary experimental autoclave had been installed at this location in 1944. It had a settling tank that had been connected to a small wooden crib. The structure was not recorded on any drawings and was not marked or posted. (See site code 300-282).

Process Description: There are three primary contributors to the 300 Area process sewer wastewater: purified potable water, equipment cooling water, and contributors with some chemical contamination. Flows from buildings are combined into one or two main waste pipes before exiting the building. Steam production activities accounted for a significant part of the waste water produced. These activities produced large quantities of waste cooling water and significant amounts of waste brine solution. A smaller portion of the flow is from laboratory sinks and drains connected to the sewer. Past activities from the fuel fabrication facilities in the 313 and 333 Buildings were the most significant sources of chromium, copper, uranium, nitrate, sulfate, and fluoride ions, as well as caustics and degreasing solvents (e.g. perchloroethylene and 1,1,1-trichloroethane) entering the process sewer. In 1978, administrative controls were established that required the end-of-pipe discharge to meet drinking water standards. In 1985 additional administrative controls were placed into effect to gain greater control of the waste water. These included discontinuing chemical discharges from chemical and biological laboratories, fuels fabrication, photographic processing, and many maintenance operations. In 1995 discharges to the 316-5 trenches were halted. Instead, discharges were transferred via a new pipeline to the 300 Area TEDF for treatment and discharge to the Columbia River.

Related Sites/ Structures: Unplanned Release site 300-34 and 300-282 are associated with this process sewer. A portion of this pipeline was co-located with the 618-1 Burial Ground.

The following facilities have discharged effluent to the 300 Area process sewer: 303F, 303J, 303M, 304, 305, 305B, 306E, 306W, 308, 309, 311, 313, 314, 318, 320, 321, 323, 324, 325, 326, 327, 329, 331, 331D, 331E, 331J, 333, 334, 335, 336, 337, 338, 340, 382, 384, 3100, 3706, 3707C, 3708, 3709, 3716, 3717, 3717B, 3717F, 3720, 3722, 3730, 3732, 3745A, 3745B, 3746A., 3802A, 3902A, and 3902B.

Project L-070 disconnected the following buildings from the Process Sewer system: 303F, 303J, 303M, 304, 305B, 308, 311, 321, 331D, 331E, 331J, 334, 335, 3707C, 3708, 3716, 3717, 3717B, 3717F, 3722, 3732, 3802A, 3902A, 3902B.

Other facilities related to the process sewer include the retention process sewer, the 307

Retention Basins, the process ponds, the 316-5 process trenches, the 300 Area TEDF, the TEDF Sump, and the TEDF transfer lines.

Waste Type: Process Effluent

Waste Description: Process sewer waste typically included: potable water, cooling water, precipitation runoff (which includes 4 stormwater catch basins next to the 3701U building, H-3-304714 Sht. 3 Rev. 1), waste brine solution (sodium chloride with magnesium salts), chromium, copper, uranium nitrate, sulfate, and fluoride ions. Effluent is traditionally composed of three sources: potentially contaminated effluent, sanitary water, and cooling water.

Nearly 70 percent of the process sewer effluent results from once-through cooling for HVAC systems, pumps, compressors, and other equipment. More than 80 percent of the discharge points contribute less than 19 liters per minute (5 gallons per minute) of effluent to the process sewer. Discharge rates were reported as high as 4900 liters per minute (1300 gallons per minute) in the 1980's, while current figures estimate flow rates of less than 760 liters per minute (200 gallons per minute).

Four chief chemical contaminants in the process sewer have been lead, silver, acetone, and cyanide. Silver was most likely contributed from the 3705 photographic processes. Cyanide compounds were detected downstream of the 384 powerhouse, and are attributable to either coal dust or the regeneration salt and softening resin used in water conditioning. Most of the lead is believed to have entered the process sewer from prior 3709 building (paint shop) processes. Acetone releases appear to have occurred in small quantities when labware was washed.

Code: 300-16

Classification: Accepted

Names: 300-16; Contamination Found During Utility Pole Replacements; Solid Waste Near 314 Building

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of utility poles that surrounded the 314 Building. The poles were cutoff at ground level in 2005 and are no longer visible from the surface (DAN-2743). Three utilities poles have been identified. Each were assigned to a separate subsite: 300-16:1, Utility Pole Northwest of 314 Building 300-16:2, Utility Pole East of 314 Building 300-16:3, Utility Pole Southeast of 314 Building

Location: The utility poles are located around the 314 Building.

Release Description: In May 1994, subsurface contamination was discovered at the site when a damaged power pole was being replaced. A truck driver had backed into a utility pole located southeast of the 314 Building. The incident caused enough damage to require the pole to be replaced. Underground radiological contamination was discovered during the replacement of the damaged utility pole. When the pole was pulled from the ground, "yellow cake" (a combination of uranium and sulfuric acid) was found to be attached to the subsurface portion of the pole, indicating subsurface contamination at this location.

Process Description: The site was identified in 1994 by Roger Carpenter while preparing the 300-FF-2 Operable Unit Technical Baseline Report (BHI-00012). The information that he obtained from interviews was documented in an email (Email05051994). The interviewees reported that a driver backed into a steam utility pole and caused enough damage that the pole required replacement. When the old pole was pulled out of the ground it was discovered that "yellow cake" (uranium/sulfuric acid combination) was adhering to the subsurface portion of the pole. The exact location of the incident was unknown but was reported to be near the 314 Building. The technical baseline

report identified the pole in Figure 3-65. This pole corresponds with the location of 300-16:3.

Related Sites/ Structures: These incidents are associated with the contamination found along Ginko Street, recorded in 300-28 and also 300-24.

Waste Type: Soil

Waste Description: On March 6, 1992, May 4, 1994, September 22, 1995 radioactive contamination (yellow-cake uranium) was discovered on the bottom ends of several utility poles that had been removed.

This Site has the Following SubSites:

Code: 300-16:1

Names: 300-16:1; Utility Pole Northwest of 314 Building

Code: 300-16:2

Names: 300-16:2; Utility Pole East of 314 Building

Code: 300-16:3

Names: 300-16:3; Utility Pole Southeast of 314 Building

Code: 300-16:1

Classification: Accepted

Names: 300-16:1; Utility Pole Northwest of 314 Building

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of the buried remains of a telephone pole northwest of the 314 Building.

A routine radiation survey for electrical upgrades in the 300 Area revealed contamination on a telephone pole on May 17, 1994 (Radiological Survey Report 165951). The radiation survey report indicated that the contamination level was 7,000 counts per minute on the top of the pole. The contamination at the bottom of the pole was measured at 3,500 counts per minute.

Location: The site was located northwest of the 314 Building just south of 305-B Storage Facility.

The SubSite is Part Of:

Code: 300-16

Names: 300-16; Contamination Found During Utility Pole Replacements; Solid Waste Near 314 Building

Code: 300-16:2

Classification: Accepted

Names: 300-16:2; Utility Pole East of 314 Building

Reclassification: Interim Closed Out (9/29/2011)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite has been remediated. The site consisted of the buried remains of a utility pole east of the 314 Building. One of three utility poles in the 300-16, Solid Waste Near 314 Building, Contamination Found During Utility Pole Replacements waste site was located within the footprint of the current excavation for the 314 Buildings waste sites.

Location: The site was located east of the 314 Building.

Process Description: On September 22, 1995 a telephone pole located on the east side of the 314 Building was removed. The lower four feet was found to be contaminated (Radiological Survey Report 194873). The radiation survey report indicated that the contamination level was 8,000 counts per minute on the base of the pole.

Related Sites/ Structures: These incidents are associated with the contamination found along Ginko Street, recorded in waste sites 300-28 and 300-24.

Closure Info: 300-16:2, 300-24, 300-80, and 300-218 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009 to May 20, 2010. The excavation (Figures 2 and 3) reached a maximum depth of 3.0 m (9.8 ft) near the center and southwest corner of the collective waste sites (Figure 4). Approximately 6,275 m³ or 14,995 tons of materials were removed from the waste sites' excavation and direct loaded for disposal at the ERDF. There is no waste staging pile area footprint or overburden soil stockpile associated with these waste sites. The utility pole that was associated with the 300-16:2 subsite was removed. The autoclave pit underlying the former 314A Building was removed. The structures associated with the 300-80 drain were removed. The concrete slabs associated with the 314, 314A, and 314B Buildings have been removed.

During remediation, a suspected french drain was found at the base of the exterior stairwell on the southwest edge of the 314 Building slab. Discussions with the EPA concluded that this drain could be remediated concurrently with the 314 Building waste sites. This suspected french drain was removed. Two pits within the main 314 Building extended below the level of the current excavation. Discussions with EPA concluded that the remaining portions of these pits could remain in place. The 300-285 (300FF2-018; FD 32), 300FF2-270 and 300-240 underground injection control (UIC), wells, are within the footprint of the 314 excavation layback. The listed UIC wells are not part of the waste site. They are listed for tracking purposes. The UIC wells have a "Not Accepted" classification status and are still present at the site.

All the foundation debris such as concrete, metal rebar, miscellaneous piping (e.g., steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Post-excavation radiological survey of the 314 Building slab was performed in June 2010. Additional radiological surveys of the 300-16:2 utility pole were performed in March 2011. The field radiological measurements survey results did not identify any residual radiological contamination above background levels.

The SubSite is Part Of:

Code: 300-16

Names: 300-16; Contamination Found During Utility Pole Replacements; Solid Waste Near 314 Building

Code: 300-16:3

Classification: Accepted

Names: 300-16:3; Utility Pole Southeast of 314 Building

Reclassification: Interim Closed Out (11/28/2011)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of the buried remains of a telephone pole south of the 314 Building.

Location: The site is located within the 300-28 waste sites. The site was located south of the 314 Building between the 303-A and 3722 buildings.

Process Description: On March 6, 1992 a 5 ft (1.5 m) telephone pole located south of the 314 Building was removed.

Description: The pole was found to be contaminated (RSR 37049). The radiation survey report indicated that

the contamination level was 3,000 counts per minute. The 300-FF-2 Operable Unit Technical Baseline Report (BHI-00012) identified this pole in Figure 3-65.

Related Sites/ Structures: These incidents are associated with the contamination found along Ginko Street, recorded in waste sites 300-28 and 300-24.

Closure Info: 300-28, 300-43, 300-48, 300-249, and 300-16:3 were addressed as a group. The information below documents information for the group of sites.

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 bank cubic meters (BCM) (3,811 bank cubic yards [BCY]) of contaminated soil and debris. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF).

Remediation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste site excavations included removal of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Buildings concrete slabs. The manholes and intersections of the 300-15 process sewer were excavated and removed from within the excavation boundaries. All the foundation debris such as concrete, metal rebar, miscellaneous piping (steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Although remediation and verification sampling was performed for the 300-161 waste site, it was then noted that 300-161 waste site was reclassified as a rejected site and therefore did not require remediation and site closure process. The 300-161 waste site was removed from this RSVP. The 300-60, 300-61, 300-62, 300-161, 300-162, 300-176, 300-193 and 300-237 rejected waste sites were removed with the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites excavation layback.

The SubSite is Part Of:

Code: 300-16

Names: 300-16; Contamination Found During Utility Pole Replacements; Solid Waste Near 314 Building

Code: 300-18

Classification: Accepted

Names: 300-18; SCA #4; Surface Contaminated Area #4

Reclassification: Interim Closed Out (8/25/2005)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out.

Location: The site was located south of 600-117, the 300 Area Treated Effluent Disposal Facility.

Waste Type: Misc. Trash and Debris

Waste Description: The site contained contaminated soil, metal shavings, nuts and bolts and concrete reading 3,000 to 4,000 disintegrations/minute beta-gamma.

Closure Info: The Cleanup Verification Package (CVP) 2005-00004 documents that the waste site was remediated in accordance with the Record of Decision for the 300-FF-2 Operable Unit, (ROD). Remedial action objectives (RAOs) and remedial action goals (RAGs) for the site were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

Because residual soil concentrations indicated that cleanup levels for more stringent land uses may have been achieved for the site, a supplemental evaluation was performed against unrestricted land-use cleanup objectives established in the Explanation of Significant Differences for the 300-FF-2 Operable Unit Record of Decision.

Cleanup verification samples (J036W6 through J036W9 and J036X0 and J036X1), were collected on May 25, 2005, in accordance with the Sampling and Analysis Plan (SAP). The samples were analyzed for the identified contaminants of concern (COC) which included: arsenic, barium, beryllium, cadmium, chromium and lead. Each verification sample was collected as a composite sample formed by combining soil collected at four random locations within the sampling area (excluding the quality assurance/quality control samples).

Results of the evaluation demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 meters [15 feet] deep). This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Excavation was driven by RAOs for direct exposure, protection of groundwater, and protection of the Columbia River. Preliminary waste site COCs were identified in the 300 Area Remedial Action (SAP). The site may be backfilled with clean soil to match surrounding grade elevation.

Code:	300-22	Classification:	Accepted
Names:	300-22; 309 Building B-Cell Cleanout Leak	Reclassification:	None
Type:	Unplanned Release	Start Date:	9/20/1962
Status:	Inactive	End Date:	9/20/1962
Description:	The site is an unplanned release from a parted hose coupling that contaminated the ground outside the emergency airlock of the 309 Building on September 20, 1962. The site is covered with new asphalt. The asphalt area is roped off and trucks are not allowed on the asphalt. The rupture loop annex is present below ground at the site.		
Location:	The spill occurred outside the emergency airlock to the Plutonium Recycle Test Reactor (PRTR), also known as the 309 Building. The emergency airlock is located on the northwest side of the reactor dome, just above ground level.		
Release Description:	During decontamination procedures at the 309 Building on September 20, 1962, a hose that was backflushing waste from the B-Cell to a waste trailer uncoupled at a joint near the emergency airlock. At the time of the incident, an area of ground 6.1 meters (20 feet) by 2.4 meters (8 feet) was roped off and tagged. Contamination readings reached 80,000 counts per minute on the ground near the spill.		
Process Description:	The Plutonium Recycle Test Reactor (PRTR) was a heavy water moderated, light water cooled, nuclear reactor. The PRTR was operated in support of the Plutonium Utilization Program to develop an optimum reactor fuel design for recycling plutonium to stretch the uranium fuel supply for commercial nuclear reactors. The B-Cell was the 7.5 m (24.5 ft) wide area between the outer containment wall and the outer reactor shield wall on the northwest quadrant of the PRTR below the main floor (5 ft to 32 ft.) It contained the in-vessel rupture loop equipment, the gas loop equipment, and the cooling blowers for the Hot Fuel Exam Facility. The release occurred during a decontamination of the B-Cell.		
Related Sites/ Structures:	The release is associated with the B-Cell of the 309 Building.		

80 drain were removed. The concrete slabs associated with the 314, 314A, and 314B Buildings have been removed.

During remediation, a suspected french drain was found at the base of the exterior stairwell on the southwest edge of the 314 Building slab. Discussions with the EPA concluded that this drain could be remediated concurrently with the 314 Building waste sites. This suspected french drain was removed. Two pits within the main 314 Building extended below the level of the current excavation. Discussions with EPA concluded that the remaining portions of these pits could remain in place. The 300-285 (300FF2-018; FD 32), 300FF2-270 and 300-240 underground injection control (UIC), wells, are within the footprint of the 314 excavation layback. The listed UIC wells are not part of the waste site. They are listed for tracking purposes. The UIC wells have a "Not Accepted" classification status and are still present at the site.

All the foundation debris such as concrete, metal rebar, miscellaneous piping (e.g., steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Post-excavation radiological survey of the 314 Building slab was performed in June 2010. Additional radiological surveys of the 300-16:2 utility pole were performed in March 2011. The field radiological measurements survey results did not identify any residual radiological contamination above background levels.

Code:	300-28	Classification:	Accepted
Names:	300-28; Contamination Found Along Ginko Street; Solid Waste Site Near 303-G Building	Reclassification:	Interim Closed Out (11/28/2011)
Type:	Unplanned Release	Start Date:	1/1/1994
Status:	Inactive	End Date:	
Description:	The site is contaminated asphalt and soil beneath Ginko Street. Patches of new asphalt are visible where utility trenches were excavated. The dimensions of this waste site were estimated to be approximately 168 m (551 ft) long and 6.5 m (21.3 ft) wide.		
Location:	The site is located inside the 300 Area, along Ginko Street.		
Release Description:	During October 1994, radiological surveys documented the daily activities of the utility installations. The contamination along Ginko Street began southeast of the 314 Building and continued to the southwest corner of the 306-W Building. Contamination levels recorded ranged from 10,000 disintegration per minute to 200,000 disintegrations per minute (beta/gamma).		
Process Description:	The oxide burner operations caused contamination to spread and be deposited around the 314 Building area. Uranium metal dust from the fuel fabrication activities provided a pathway for heavy metal dust to become airborne and accumulated in the soils throughout the northern portion of the 300 Area.		
Related Sites/ Structures:	The contamination is associated with activities in the 314, 333, 3715, 304 and the 303 (A, B, C, G and K) Buildings.		
Waste Type:	Soil		
Waste Description:	The waste is radioactively contaminated soil found just beneath the asphalt paving.		
Closure Info:	300-28, 300-43, 300-48, 300-249, and 300-16:3 were addressed as a group. The information		

below documents information for the group of sites.

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 bank cubic meters (BCM) (3,811 bank cubic yards [BCY]) of contaminated soil and debris. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF).

Remediation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste site excavations included removal of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Buildings concrete slabs. The manholes and intersections of the 300-15 process sewer were excavated and removed from within the excavation boundaries. All the foundation debris such as concrete, metal rebar, miscellaneous piping (steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Although remediation and verification sampling was performed for the 300-161 waste site, it was then noted that 300-161 waste site was reclassified as a rejected site and therefore did not require remediation and site closure process. The 300-161 waste site was removed from this RSVP. The 300-60, 300-61, 300-62, 300-161, 300-162, 300-176, 300-193 and 300-237 rejected waste sites were removed with the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites excavation layback.

Code: 300-29	Classification: Accepted
Names: 300-29; 305-B Berm; Source Location of UPR-600-11 Contaminated Soil	Reclassification: No Action (1/18/2005)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description:	The site is a U shaped soil berm that surrounds the east wing of the 305-B Chemical Waste Storage Building. No radiological postings are currently present.
Location:	The 305 building is on the east side of the Alaska Street inside the 300 Area. The berm was around the 305-B Chemical Waste Storage Building, east of the 305-B main building. The berm that surrounded the building covered a surface area of 184 square meters.
Release Description:	On May 29, 1980, the JA Jones subcontractor workers had excavated 76.5 cubic meters (100 cubic yards) of soil from the 305-B berm before the contaminated rubble was detected and work was stopped. The contaminated material had been taken to the JA Jones Pit #1, which was designated as a non-radioactive landfill. Work was stopped immediately after the contamination was identified and the appropriate personnel were notified. Low-level beta-gamma contamination (600 - 4000 counts per minute) was discovered in a small amount of blacktop rubble on the south side of the berm.
Related Sites/ Structures:	The associated structure was the 305-B Chemical Waste Storage Building, UPR-600-11 and JA Jones Pit #1 (600-1).
Waste Type:	Soil
Waste Description:	The waste is radioactively contaminated soil (reported 5/29/80).
Closure Info:	Following the identification of contaminated material in 1980, work was stopped and the area

carefully surveyed. All of the remaining contaminated blacktop was removed from the berm and the area was released from radiation zone status. Additional excavated material was surveyed by a Radiation Monitor. A radiological survey done in August 1998 did not find any detectable contamination on the berm surface.

Code:	300-32	Classification:	Accepted
Names:	300-32; 333 Building; 333 N Fuels Manufacturing Building; New Fuel Cladding Facility, 333 Building Remaining Soils	Reclassification:	None
Type:	Fabrication Shop	Start Date:	1/1/1961
Status:	Inactive	End Date:	
Description:	The 333 building was demolished in 2006. The foundation slab remains and is posted as a Radiologically Controlled Area (RCA). The 333 building was a large steel frame building with double metal insulated panel exterior walls. The foundation and floors were concrete. The roof covering consisted of metal "Accustideck" insulated foam board covered with four-ply graveled asphalt roofing. A high bay through the length of the building accommodated bridge cranes and a monorail hoist.		
Process Description:	The contamination in the 333 building includes all of the fuel components and chemicals used in the fuel rod fabrication process. Uranium Fuel for N Reactor was enriched to 95% uranium-235, and with 13% enriched to 1.25 uranium-235. A small amount of natural uranium was used. As well as beryllium, copper, zirconium, tin, iron, chromium and silicon. Nitric, sulfuric, hydrofluoric and other acids were used. TCE and other degreasers were used.		
	The co-extrusion process steps included the following steps. The components were inspected and cleaned with nitric, nitric-hydrofluoric, and Chromic-nitric-sulfuric acid (combined in a commercial product called Zinctone). The components were extruded in an extrusion press. The components were machined to create fuel sections. Nitric acid was used to remove copper-silicon residues. Nitric-sulfuric acid was used to chemically mill excess uranium on fuel element ends. The element was etched with nitric-hydrofluoric acids and brazed with a specific beryllium-Zircaloy-2 alloy. The fuel supports or projections were welded on and the element underwent audioradiography. The element received a final etch with nitric-hydrofluoric acid. The element then underwent autoclave testing and inspection and was stored as finished fuel.		
Related Sites/ Structures:	The 333 Building is related to the 334-A Chemical Waste Receiving Station, the 334 Chemical Handling Building, 313 Sludge Recovery, and the Waste Acid Treatment System.		
Waste Type:	Chemicals		
Waste Description:	Chemical wastes included nitric, sulfuric, hydrofluoric, chromic-nitric-sulfuric and other acids, along with degreasers trichloroethylene in the 1960's and early 1970's and perchloroethylene and 111-trichloroethane in the 1970's and 1980's. Heat treatment salts included sodium nitrate, sodium and potassium nitrite, and sodium and potassium chloride. Additionally, many alcohol and acetone cleansers were used throughout the building's history.		

Code:	300-33	Classification:	Accepted
Names:	300-33; 306W Metal Fabrication Development Building Releases	Reclassification:	Interim Closed Out (11/22/2010)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The site is the contaminated soil around and under the 306W Building. The area around the		

306W building is paved and posted as having underground radioactive contamination.

Location: The site is located in the main 300 Area on the north side of Ginkgo Street between Wisconsin and California Streets.

Release Description: Multiple leaks and fires occurred over the years in and around the 306 building, in barrels and waste "load luggers" containing uranium, thorium, heavy metals, and other fuel component scrap. These fires oxidized and volatilized uranium and other wastes: long-lived contamination, which can be recirculated today, settled in building sumps, crevices, and nearby soil.

Process Description: The 306W Building was completed in 1956 and named the Fuel Element Pilot Plant. The facility was constructed to support the 313 Building operations. It was expanded in 1960 to contain the co-extrusion fabrication processes for N Reactor fuels fabrication. In 1972, the east half, the new half, was designated as 306E and that portion of the building became the Hanford Engineering Development Laboratory (HEDL) operated by Westinghouse Electric Corporation. The west portion of the building, which is older, was named 306W and was allocated to Pacific Northwest Laboratories (PNL).

Related Sites/Structures: The site is related to the 306W Building, 333 building, 300 Area process sewer, and 300 area sanitary sewer.

Waste Type: Soil

Waste Description: The waste is contaminated soil under the paved areas surrounding the 306W building.

Closure Info: 300-33, 300-256 and 300-41 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2010-058) for 300-33, 300-256, and 300-41 waste sites have documented that these sites have met both the industrial and rural-residential scenario remedial action objectives (RAOs) as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (300 Area RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (300-FF-2 ROD). Verification sampling data, site evaluations, and supporting documentation illustrate that the site has been successfully remediated and that there are no residual hazardous/dangerous materials present above RAOs in the soil. Therefore, the sites are protective of human health, groundwater, and the Columbia River.

The waste sites consisted of the contaminated soil around and under the 306W and 306E Building, the neutralization tank, and valve pit.

Demolition of the 306E, 306W, and 306E-BA facilities, which overlaid these waste sites, was completed between November 2006 and December 2007. Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank, valve pit, soil, and other debris within the footprint of the 306E/W Building including the partial removal and backfill of the 306E Building assembly pit. All debris and excavation materials have been removed to the Environmental Restoration Disposal Facility.

The 300-FF-2 ROD lists the COPCs for the sites using descriptive and non-analyte-specific terms. The 300-FF-2 ROD lists uranium, thorium, heavy metals (lead), and acids as COPCs for the 300-33 waste site. The COPCs listed for the 300-256 waste site are uranium, thorium, heavy metals, chemicals, cleansers, solvents, reagents, and PCBs. The COPCs for the 300-41 waste site are anions. Based on the chemical composition of the items on these lists, a single list of

specific analyses was developed to capture the COPCs for the three waste sites.

Verification sampling was performed on May 6, 2010, to support a determination that residual contaminant concentrations at these sites meet the cleanup criteria specified in the 300 Area RDR/RAWP and the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units. The verification sample results were provided within the 95% upper confidence limit (UCL) calculation in Appendix B of the RSVP and indicate that the remedial action achieved compliance with the RAOs for the sites.

The laboratory-reported verification data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation in Appendix B of the RSVP.

Verification sampling results also indicated that the residual contaminant concentrations achieved do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils. Site contamination did not extend into the deep-zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	300-34	Classification:	Accepted
Names:	300-34; 300 Area Process Sewer Leak (Found During Project L-070 Excavation at Manhole PS-87)	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1995
Status:	Inactive	End Date:	
Description:	The site was a release to soil that was discovered during excavation to install a new manhole (PS-87). PS-87 is a 0.7 meter (2.3 feet) diameter sewer opening with a round metal cover at grade. The cover is labeled "Confined Space" and "Radioactive Material Internally Contaminated."		
Location:	Manhole PS-87 is located on the south side of Apple Street, inside the 300 Area. It is directly north of main entrance to 3506-B. The manhole is in a parking area for buildings 3506-A and 3506-B. A recent view of the manhole cover was obscured by sand and gravel.		
Release Description:	On December 12, 1995, during an excavation for the 300 Area Process Sewer Upgrade (Project L-070), contaminated soil was found at a depth of 3.6 meters (12 feet) near manhole PS-87. The maximum contamination identified in the dirt was 10,000 disintegrations per minute. Contaminated soil was removed from the excavation and placed into drums. After excavation and repairs were completed, the soil was put back in place. A leak from a cracked portion of the Process Sewer is suspected to have resulted in the contaminated soil. The cracked portion had been patched with grout a long time ago, possibly when it was originally installed. The broken pipe was replaced with a section of polyvinyl chloride (PVC) piping.		
Process Description:	The source of the contamination release is believed to be a crack in the 300-15 Process Sewer, a vitrified clay pipe that held radioactive liquid.		
Related Sites/ Structures:	The site is associated with the 300 Area Process Sewer (300-15), and Manhole PS-87.		
Waste Type:	Soil		
Waste Description:	Soil contaminated with radioactive material was found at about the 3.65 meter (12 foot) depth		

during excavation and installation of manhole PS-87, Project L-070 (300 Area Process Sewer Upgrade). Maximum soil contamination levels were beta-gamma 10,000 disintegrations per minute. Soil sample results reported 525 picocuries per gram Total Beta and 91 picocuries per gram Total Alpha.

Code: 300-40 **Classification:** Accepted

Names: 300-40; Corrosion of Vitrified Clay Process Sewer Pipe **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:**

Description: Currently, the site appears as an uneven gravel covered area. It is bounded by a concrete curb and concrete pad on the west and a rail spur on the east. The southern section of the site is made up of the area around 303-F and the 311 Tank Farm. The northern end of the site is covered by the 3712 building.

Location: The site is located directly north of the 311 Tank Farm and south of the 3712 Building.

Release Description: During removal of the 311 Stillhouse in 1980, it was discovered that the vitrified clay process sewer line was severely corroded. The section between the neutralization pit and the 3712 manhole was corroded to a point where the entire lower half of the pipe was missing. It was estimated that at least 60 meters (200 feet) of the pipe is in similar condition. Current documentation suggests that wastes were released to the soil column from badly corroded sections of the process sewer piping between the 311 Tank Farm and 3712. The extent of soil contamination is unknown. No occurrence report has been located for this site.

Process Description: This section of pipe was part of the 300 Area process sewer until it was isolated. This leg of pipe collected rain water drainage from the 311 Tank Farm and the 303-F floor drains. The piping also collected effluent from the 311 Stillhouse.

Related Sites/ Structures: The site is associated with the 311 Tank Farm drains and the 300 Area Process Sewer.

Waste Type: Process Effluent

Waste Description: Potential wastes received in this piping system would consist of chemicals used in the 313 Building fuels manufacturing process. These include nitric acid, sodium hydroxide, alcohol, trichloroethylene, phosphoric acid, Duponol-M-3, hydrofluorosilicic acid, thorium, uranium, cutting oils, etc.

Code: 300-41 **Classification:** Accepted

Names: 300-41; 306E Neutralization Tank; Underground Lime Tank and Valve Pit **Reclassification:** Interim Closed Out (11/22/2010)

Type: Neutralization Tank **Start Date:**

Status: Inactive **End Date:**

Description: The site includes a neutralization tank and valve pit. The valve pit is constructed of concrete and is covered by a 2.18 meter (7.15 foot) diameter metal lid. The top of the pit is flush with the ground surface on its north side and approximately 5 centimeters (2 inches) above grade on its south side. A rectangular hatch in the lid allows access to the pit. The hatch is labeled "Confined Space." It appears as though there are three ports in the lid where pipes or hoses could enter the pit. These three ports are currently closed. The pit is surrounded by sand and four metal safety posts. All that is visible of the neutralization tank is a riser that appears to be

made of metal; the riser appears to be discolored by rust. The riser is covered by a 0.72 meter (2.36 foot) diameter metal lid, that is greater in diameter than the riser itself. The lid is labeled "Neutralization Tank" in fading black paint. The lid is held in place by a metal bar, bolts and wing nuts. The metal bar has discolored the lid with rust. The top of the lid is 0.42 meters (1.4 feet) above the ground surface, which is sand.

- Location:** The site is located west/northwest of the northeast corner of the 306E Building.
- Release Description:** From 1956 to 1967, and once after 1967, the neutralization tank and valve pit intercepted and neutralized nitric acid-bearing chemical wastes before discharge to the process sewer. In 1976, the pit was inspected, along with the process waste sump, sewer manholes, and the inlet box to the process sewer leaching trenches, after several hundred gallons of slightly enriched uranyl nitrate hexahydrate solution was spilled in the sump. The investigation found that much uranium and thorium contamination lies in and beneath the entire 306 Building floor, slab, pipe trenches, and sewer lines. No significant accumulation was found in the pit and sewer manholes. In 1979, a HEDL Radiological Engineering report stated, among other things, "The lime pit...contain[s] uranium and thorium sludge." The soil contamination is addressed by WIDS Site 300-42.
- Related Sites/Structures:** The site is associated with the 306E Fabrication and Testing Laboratory Releases (WIDS Site 300-42) and 306E Building - HVAC Condensate, Miscellaneous Stream #454 (WIDS Site 300-71), and the process sewer (WIDS Site 300-15).
- Waste Type:** Chemicals
- Waste Description:** The neutralization tank and valve pit intercepted and neutralized nitric acid-bearing chemical wastes before discharge to the process sewer. In 1979, a HEDL Radiological Engineering report stated, among other things, "The lime pit...contain[s] uranium and thorium sludge."
- Closure Info:** 300-33, 300-256 and 300-41 were addressed as a group. The information below documents information for the group of sites.
- The Remaining Sites Verification Package (RSVP-2010-058) for 300-33, 300-256, and 300-41 waste sites have documented that these sites have met both the industrial and rural-residential scenario remedial action objectives (RAOs) as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (300 Area RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (300-FF-2 ROD). Verification sampling data, site evaluations, and supporting documentation illustrate that the site has been successfully remediated and that there are no residual hazardous/dangerous materials present above RAOs in the soil. Therefore, the sites are protective of human health, groundwater, and the Columbia River.
- The waste sites consisted of the contaminated soil around and under the 306W and 306E Building, the neutralization tank, and valve pit.
- Demolition of the 306E, 306W, and 306E-BA facilities, which overlaid these waste sites, was completed between November 2006 and December 2007. Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank, valve pit, soil, and other debris within the footprint of the 306E/W Building including the partial removal and backfill of the 306E Building assembly pit. All debris and excavation materials have been removed to the Environmental Restoration Disposal Facility.
- The 300-FF-2 ROD lists the COPCs for the sites using descriptive and non-analyte-specific terms. The 300-FF-2 ROD lists uranium, thorium, heavy metals (lead), and acids as COPCs for the 300-33 waste site. The COPCs listed for the 300-256 waste site are uranium, thorium, heavy metals, chemicals, cleansers, solvents, reagents, and PCBs. The COPCs for the 300-41 waste

site are anions. Based on the chemical composition of the items on these lists, a single list of specific analyses was developed to capture the COPCs for the three waste sites.

Verification sampling was performed on May 6, 2010, to support a determination that residual contaminant concentrations at these sites meet the cleanup criteria specified in the 300 Area RDR/RAWP and the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units. The verification sample results were provided within the 95% upper confidence limit (UCL) calculation in Appendix B of the RSVP and indicate that the remedial action achieved compliance with the RAOs for the sites.

The laboratory-reported verification data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation in Appendix B of the RSVP.

Verification sampling results also indicated that the residual contaminant concentrations achieved do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils. Site contamination did not extend into the deep-zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code:	300-43	Classification:	Accepted
Names:	300-43; Unplanned Release Outside the 304 Building	Reclassification:	Interim Closed Out (11/28/2011)
Type:	Unplanned Release	Start Date:	1/1/1972
Status:	Inactive	End Date:	1/1/1989
Description:	The site is uranium contaminated soil around the 304 building (formerly the 304 Concretion Facility) in the 300 Area. The site also includes residual contamination remaining in the 304 Storage Area (304 SA). The 304 Building is posted "Fixed Contamination Area." Sections of concrete and asphalt on the north side of the building are painted gray and posted "Fixed Contamination Area," including the fenced area. The painted and posted "Fixed Contamination Area" continues in a thin strip along the west side of the building, then grows to include a concrete or asphalt pad on the south side of the building. A thin strip of gray paint continues along the east side of 304, ending at the south wall of the change room. This painted area on the east side of the building is not posted "Fixed Contamination Area," but the unpainted asphalt further east is. The signs in the unpainted asphalt are approximately in line with the east edge of the 304 change room. A row of "Radiologically Controlled Area" signs runs along the south side of the 304 and 303A Buildings with the signs facing to the south.		
Location:	The contamination is on the east, south, and west sides of the demolished 304 Building.		
Release Description:	Until 1989, the walls of the facility were not sealed to the concrete pad and there were numerous small holes in the walls. During concretion operations the floors and walls of the facility were washed down daily. This washing and splashing against the walls may have carried contamination out of the building. Additionally, there was no provision to contain this wash water at either of the large door openings. The fenced north pad also has no containment system for spills, wash water, or precipitation runoff.		
Process Description:	During concretion operations, the 304 Facility floor was washed down daily with water. Because the steel walls of the main building were not sealed to the concrete wall base until 1989 (and there were numerous small holes in the walls) rinse water splashing against the steel walls might have carried contamination out of the building. In addition, there were no berms at the north and south doors to stop washdown water from leaving the building. The north fenced pad		

does not have a berm to contain spills or precipitation.

Related Sites/ Structures: The site is related to operations in the 304 Building and Storage Area.

Waste Type: Soil

Waste Description: The waste is uranium contaminated soil remaining following operations of the 304 CF and 304 SA facilities. Sampling and analysis during TSD closure activities for the 304 CF and 304 SA showed uranium contamination at levels up to 256 micrograms/gram for shallow soils at the exterior storage pad.

Closure Info: 300-28, 300-43, 300-48, 300-249, and 300-16:3 were addressed as a group. The information below documents information for the group of sites.

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 bank cubic meters (BCM) (3,811 bank cubic yards [BCY]) of contaminated soil and debris. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF).

Remediation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste site excavations included removal of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Buildings concrete slabs. The manholes and intersections of the 300-15 process sewer were excavated and removed from within the excavation boundaries. All the foundation debris such as concrete, metal rebar, miscellaneous piping (steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Although remediation and verification sampling was performed for the 300-161 waste site, it was then noted that 300-161 waste site was reclassified as a rejected site and therefore did not require remediation and site closure process. The 300-161 waste site was removed from this RSVP. The 300-60, 300-61, 300-62, 300-161, 300-162, 300-176, 300-193 and 300-237 rejected waste sites were removed with the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites excavation layback.

Code: 300-45	Classification: Accepted
Names: 300-45; Location 3: Bird Droppings Area (Southwest Corner of the 316-5 Process Trenches Fence Line); SCA #1; Surface Contamination Area	Reclassification: Closed Out (12/17/1997)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: Heavy vegetation growth and anthills are in the area. The area has been downposted and released, and is no longer marked or posted. It was remediated in 1997 and closed out.	
Location: The site was located adjacent to the southwest corner of the 316-5 Process Trench fence.	
Release Description: It has been determined the area consisted of contaminated soil caused by the spread of radioactive rabbit feces.	
Waste Type: Soil	

**Waste
Description:**

Closure Info: One composite sample from the material was collected by the sampling team on 1/20/95, effectively removing much of the contamination. Scattered low-level contamination still remained. During the preparation of the Remedial Design Report/Remedial action Work Plan (RDR/RAWP)(DOE/RL-96-70), a decision was made to include this site with the remediation activities of the 316-5 Process Trenches in the 300-FF-1 Operable Unit work scope.

In 1997 the contaminated soil was removed and disposed of in the Environmental Restoration Disposal Facility (ERDF). Analysis of verification samples of the remaining soil show the area to be below cleanup standard levels. The area no longer poses a threat to human health or the environment and a December 17, 1997 (approval date) TPA change form (Control Number 118) lists the site as Closed Out.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. IC information in the closure documents for some 300 Area sites, including this one, is incomplete. ICs limiting land use to industrial uses are required, as are controls preventing uncontrolled drilling or excavating. The ICs for this site have been revised accordingly.

Code: 300-46	Classification: Accepted
Names: 300-46; Soil Contamination Surrounding 3706 Building	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description:	This site estimates the extent of uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. The ground surrounding the 3706 building is not posted as a radiologically controlled area. The 3706 Building is posted "Fixed Contamination Area." Numerous pipes were observed exiting the exterior walls on all sides of the building. Several of these pipes were associated with rust stains on the side of the building and the nearby ground. Several french drains were also observed on all sides of the building. Twenty recognized miscellaneous streams fall within the current extent for this site.
Location:	The 3706 building is located in the 300 Area on the southeast corner of Apple Street and Alaska Street.
Release Description:	Contamination of the area surrounding the 3706 Building is believed to have resulted primarily from the operations and associated spills and releases. Although radiological surveys near and around the 3706 Building have not detected any radiologically contaminated soil, subsurface contamination is suspected. Contamination within the 3706 building that may have contributed to outdoor contamination is described in the "Past Practices Technical Characterization Study - 300 Areas - Hanford Site", WHC-MR-388. According to the report, the 3706 Building is contaminated with both radiological and chemical constituents, including high-activity substances. These wastes are composed of all components of the bismuth phosphate, REDOX, PUREX, and RECUPLEX processes along with laboratory cleansers, reagents and drying agents, as well as plutonium, uranium, thorium, and beryllium. Mercury deposits from multiple laboratory uses also were very prevalent. Additional chemical wastes result from bioassay and environmental sample analyses. Among these substances were sodium thiosulfate, hydroxylamine hydrochloride, barium chloride, barium nitrate, magnesium perchlorate, sodium iodine, sodium carbonate, thenoyltrifluoroacetone, thenoyltrifluoroacetone-benzene solutions, boric acid, silver nitrate, cupric oxide, arsenic nitrate, zinc nitrate, ammonium chloride, tartaric acid, and cupferron. Other wastes result from the spread of irradiated metal dusts and fines from the machining and grinding of metallurgical test samples. Contamination results from

both inadequate containment systems and from spills, overflows, vaporizations, spreads of radioactive dusts and fines, and other incidents involving the loss of control of radioactive materials. The 3706 Building was never connected to the RLWS. All non-sanitary wastes from the structure were disposed to the 300 Area process sewer system. In the case of uranium, as with early work with uranium in other HEW facilities, few special precautions for work with radioactive substances were taken. Uranium contamination, especially dusts and fines from metallurgical testing, was spread from the hands, shoes, hair, and clothing of personnel into the 300 Area sanitary sewer system.

Process Description: The original mission of the 3706 Building was to perform small-scale experiments with both low- and high-activity radioactive materials in support of all HEW production activities. The largest portion of staff and facilities in the building performed radiochemical trials aimed at improvements in the bismuth phosphate process. During the war years, some of the important variables and factors studied in the 3706 Building were the substitution of potassium permanganate for sodium dichromate as an oxidizing agent for plutonium, variations in acid strengths in several steps of the separations process, a decrease in the "digestion time" in the reduction step, methods for improving the centrifugability of lanthanum fluoride, the solubility of plutonium compounds and other substances in process solutions, methods of counting specific plutonium activity, characterization of fission products and plutonium decay products, the effects of hydrazine and lead in the dissolution process, and process equipment decontamination and corrosion studies. Other large sections of staff time and laboratories in the 3706 Building were devoted to metallurgical examination of irradiated fuel elements from the reactors, fuel development for the 313 Building, "physical technical" examination of graphite from the experimental levels of the 100 Area piles, special sample analyses from the 231 Plutonium Isolation Building in the 200 Areas separations plants, spectroscopy and radiocounting activities, and multifaceted sample analyses for the H. I. Division's environmental and personnel survey programs. In 1954, the 3706 Building underwent a major decontamination and remodeling effort, in which many of the laboratories were converted to offices. However, control (sampling) laboratories for fuel fabrication operations continued to operate in the building through the mid-1960's until they were transferred to the 3720 Building. Uranium fuel slugs, uranium powder, beryllium, and thorium continued to be handled, primarily in Laboratories 207-224, throughout this period. Rooms were renumbered in the building in early 1956, and the structure received a new roof in 1959. By 1964, the 3706 Building was called the General Services Building. Although it still contained some analytical laboratories, a majority of its space was devoted to mail services, duplicating, photographic, and drafting services, a first aid station, 300 Area patrol headquarters, and other administrative and clerical functions. During the 1970's and 1980's, the 3706 Building underwent several other minor remodelings as all laboratory work eventually was phased out. Today, the structure is unoccupied.

Related Sites/ Structures: The 3707C building was once connected to the 3706 building. The 3707C was demolished in 1996. Nineteen miscellaneous streams are documented around the 3706 and 3706A Buildings in the "Inventory of Miscellaneous Streams", Revision 3. These sites are identified in WIDS as site codes 300-131 through 300-149.

Waste Type: Chemicals

Waste Description: Contamination of the area surrounding the 3706 Building is believed to have resulted primarily from operations and associated spills and releases. Although radiological surveys near and around the 3706 Building have not detected any radiologically contaminated soil, subsurface contamination is suspected. The 3706 Building is contaminated with both radiological and chemical constituents, including high-activity substances. These wastes are composed of all components of the bismuth phosphate, REDOX, PUREX, and RECUPLEX processes along with laboratory cleansers, reagents and drying agents, as well as plutonium, uranium, thorium, and beryllium. Mercury deposits from multiple laboratory uses also were very prevalent.

Additional chemical wastes include: sodium thiosulfate, hydroxylamine hydrochloride, barium chloride, barium nitrate, magnesium perchlorate, sodium iodine, sodium carbonate, thenoyltrifluoroacetone, thenoyltrifluoroacetone-benzene solutions, boric acid, silver nitrate, cupric oxide, arsenic nitrate, zinc nitrate, ammonium chloride, tartaric acid, and cupferron. Other wastes result from the spread of irradiated metal dusts and fines from the machining and grinding of metallurgical test samples. Contamination results from both inadequate containment systems and from spills, overflows, vaporizations, spreads of radioactive dusts and fines, and other incidents involving the loss of control of radioactive materials.

The Following Sites Were Consolidated With This Site:

Code: 300-131
Names: 300-131; 3706 Fire Sprinkler System Water; Miscellaneous Stream #515

Code: 300-132
Names: 300-132; 3706 Building Steam Condensate; Miscellaneous Stream #368

Code: 300-133
Names: 300-133; 3706 Building Steam Condensate; Injection Well #27; Miscellaneous Stream #367

Code: 300-134
Names: 300-134; 3706 Building Steam Condensate; Miscellaneous Stream #362

Code: 300-135
Names: 300-135; 3706 Building Steam Condensate; Miscellaneous Stream #365

Code: 300-136
Names: 300-136; 3706 Building Steam Condensate; Miscellaneous Stream #366

Code: 300-137
Names: 300-137; 3706 Building Steam Condensate; Miscellaneous Stream #440

Code: 300-138
Names: 300-138; 3706 Building Steam Condensate; Miscellaneous Stream #360

Code: 300-139
Names: 300-139; 3706 Building Steam Condensate; Miscellaneous Stream #357

Code: 300-140
Names: 300-140; 3706 Building Steam Condensate; Miscellaneous Stream #356

Code: 300-141
Names: 300-141; 3706 Building Steam Condensate; Injection Well #29; Miscellaneous Stream #439

Code: 300-142
Names: 300-142; 3706 Building Steam Condensate; Injection Well #30; Miscellaneous Stream #369

Code: 300-143
Names: 300-143; 3706 Building Steam Condensate; Miscellaneous Stream #361

Code: 300-144
Names: 300-144; 3706 Building Steam Condensate; Miscellaneous Stream #358

Code: 300-145
Names: 300-145; 3706 Building Steam Condensate; Injection Well #25; Miscellaneous Stream #438

Code: 300-146
Names: 300-146; 3706 Building Stormwater Runoff; Miscellaneous Stream #364

Code: 300-147
Names: 300-147; 3706 Building Stormwater Runoff; Miscellaneous Stream #363

Code: 300-148
Names: 300-148; 3706 Building Stormwater Runoff; Injection Well #22; Miscellaneous Stream #359
Code: 300-149
Names: 300-149; 3706A Building Steam Condensate; Injection Well #28; Miscellaneous Stream #432
Code: 300-150
Names: 300-150; 3706 Building Steam Condensate; Miscellaneous Stream #430

Code: 300-48 **Classification:** Accepted
Names: 300-48; Thorium Oxide and Fuel Fabrication Chemical Wastes Around 3732 Building, 3732 Building Foundation **Reclassification:** Interim Closed Out (11/28/2011)
Type: Unplanned Release **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1970

Description: This site is the 3732 Building foundation and the surrounding soil contamination. The site appears as a gravel covered mound. There are no hazard postings except for two signs related to the adjacent 303B Building.

Location: The site is located just north of the 3708 Building (south side of Ginko Street), between the 303B and 303C Buildings.

Release Description: The handling of thorium powder targets spread fine and particulate contamination throughout the 3732 building. Decontamination practices included hosing down the facility floors and walls, allowing contaminated liquid to be released to the surrounding soil.

Process Description: The 3732 Process Equipment Development Laboratory was constructed in 1949 as an engineering pilot plant for the triple-dip and lead-dip fuel canning processes. Powdered thorium oxide fuel targets for uranium-233 production were fabricated in the 3732 Building from 1965 to 1967. The thorium oxide program switched to pelletized targets in the 3722 Building in 1968. These new fuel targets were canned in the 3732 Building through 1970.

Related Sites/Structures: This site was associated with the 3732 Building (now demolished), and WIDS Sites 300-192 and 300-193.

Waste Type: Demolition and Inert Waste
Waste Description: The foundation of the 3732 Building was not removed as part of demolition activities. The contamination areas on the foundation were covered with a fixative paint before the site was stabilized.

Waste Type: Soil
Waste Description: The 3732 Building contained standard fuel fabrication chemical wastes, as well as residual thorium oxide contamination in crevices and areas throughout and near the building. The contaminated soil is underground. The practice of flushing contamination on floors outside to the dirt is a possible explanation for the source of the soil contamination.

Closure Info: 300-28, 300-43, 300-48, 300-249, and 300-16:3 were addressed as a group. The information below documents information for the group of sites.

The 300-28, 300-43, 300-48, 300-249, and 300-16:3 excavation of building foundations, associated pipelines, and soils began on June 28 and was completed by July 29, 2010. Due to elevated radiologically contaminated soil found north of 303E Building, additional remediation was performed September 30, 2010, targeting specific locations with elevated readings. The

excavation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites resulted in a total of approximately 2,914 bank cubic meters (BCM) (3,811 bank cubic yards [BCY]) of contaminated soil and debris. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF).

Remediation of the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste site excavations included removal of the 303A, 304, 304A, 303B, 3732, 303C, 3707D, and 303E Buildings concrete slabs. The manholes and intersections of the 300-15 process sewer were excavated and removed from within the excavation boundaries. All the foundation debris such as concrete, metal rebar, miscellaneous piping (steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Although remediation and verification sampling was performed for the 300-161 waste site, it was then noted that 300-161 waste site was reclassified as a rejected site and therefore did not require remediation and site closure process. The 300-161 waste site was removed from this RSVP. The 300-60, 300-61, 300-62, 300-161, 300-162, 300-176, 300-193 and 300-237 rejected waste sites were removed with the 300-28, 300-43, 300-48, 300-249, and 300-16:3 waste sites excavation layback.

Code:	300-53	Classification:	Accepted
Names:	300-53; Unplanned Release East Side of 303-G	Reclassification:	Closed Out (2/12/1999)
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	1/1/1996
Description:	The site was contaminated soil that was discovered on the surface of some slightly eroded soil located within a posted Underground Radioactive Material (URM) Area. The actual erosion was at the end of a concrete splash guard underneath the water discharge pipe. Disruption of the ground surface by the fire suppression system testing exposed sub-surface contamination that had been previously covered with clean soil.		
Location:	The site is located on the east side of the 303-G Building, under the fire suppression water discharge pipe .		
Release Description:	The contaminated area was identified on October 8, 1996. Removable radiological contamination measuring up to 36,000 disintegrations per minute beta-gamma per 100 cubic centimeter were reported on the surface of some slightly eroded soil. The soil area measured about 0.3 meter by 0.9 meter (1 foot by 3 feet). The radiological contamination was exposed when water was discharged from the building's fire suppression system. The water was directed onto a concrete splash guard, but still had substantial velocity when it left the splash guard and contacted the soil. The contaminated soil was exposed because of erosion.		
Waste Type:	Soil		
Waste Description:	The waste was contaminated soil.		
Closure Info:	On October 16, 1996, exposed contaminated soil was cleaned up and covered with clean soil.		
	Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the		

remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code: 300-80 **Classification:** Accepted
Names: 300-80; 314 Building Stormwater Runoff and Steam Condensate; Miscellaneous Stream #268 **Reclassification:** Interim Closed Out (9/29/2011)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The drain structure was removed along with the 314 building foundation and soil. The site was a square concrete structure adjacent to the 314 Building and next to a fenced stairway leading down. The site was covered by a steel plate marked with a sign "Radioactive material, internally contaminated." The site does not appear to be a stormwater drain. It was above the surrounding grade and no drain pipes from the roof enter the site. The "Inventory of Miscellaneous Streams", Revision 3, says the stream has been eliminated because the source has been permanently abandoned and rerouted to the process sewer.

The responsible contractor agrees that the site did previously receive steam condensate, but is unable to verify stormwater discharges. Further inspection under the steel cover and the review of facility drawings are required to verify the function and site type.

Location: The site was on the west side of the 314 Building, adjacent to the wall, 9 meters (27 feet) north of the southwest corner.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The french drain is related to the 314 Building (sitecode 300-218). An area of soil contamination exists outside the 314 Building. This unplanned release (sitecode 300-24) may be the source of the contamination within structure.

Waste Type: Equipment
Waste Description: The structure for this site appears to have become contaminated (see photograph).

Waste Type: Steam Condensate
Waste Description: DOE/RL-95/82, Revision 3 says that the site was used for stormwater runoff and steam condensate. This site does not appear to be used for stormwater runoff, since it is above the surrounding grade and no pipes from a roof enter the site. The stream was eliminated March, 1995 and rerouted to the process sewer.

Closure Info: 300-16:2, 300-24, 300-80, and 300-218 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009 to May 20, 2010. The excavation (Figures 2 and 3) reached a maximum depth of 3.0 m (9.8 ft) near the center and southwest corner of the collective waste sites (Figure 4). Approximately 6,275 m³ or 14,995 tons of materials were removed from the waste sites' excavation and direct loaded for disposal at the ERDF. There is no waste staging pile area footprint or overburden soil stockpile associated with these waste

sites. The utility pole that was associated with the 300-16:2 subsite was removed. The autoclave pit underlying the former 314A Building was removed. The structures associated with the 300-80 drain were removed. The concrete slabs associated with the 314, 314A, and 314B Buildings have been removed.

During remediation, a suspected french drain was found at the base of the exterior stairwell on the southwest edge of the 314 Building slab. Discussions with the EPA concluded that this drain could be remediated concurrently with the 314 Building waste sites. This suspected french drain was removed. Two pits within the main 314 Building extended below the level of the current excavation. Discussions with EPA concluded that the remaining portions of these pits could remain in place. The 300-285 (300FF2-018; FD 32), 300FF2-270 and 300-240 underground injection control (UIC), wells, are within the footprint of the 314 excavation layback. The listed UIC wells are not part of the waste site. They are listed for tracking purposes. The UIC wells have a "Not Accepted" classification status and are still present at the site.

All the foundation debris such as concrete, metal rebar, miscellaneous piping (e.g., steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Post-excavation radiological survey of the 314 Building slab was performed in June 2010. Additional radiological surveys of the 300-16:2 utility pole were performed in March 2011. The field radiological measurements survey results did not identify any residual radiological contamination above background levels.

Code:	300-109	Classification:	Accepted
Names:	300-109; 333 Building Stormwater Runoff; Miscellaneous Stream #455	Reclassification:	Interim Closed Out (8/20/2010)
Type:	Injection/Reverse Well	Start Date:	
Status:	Inactive	End Date:	
Description:	The site consisted of a 10-cm (4-in.) collection line and a french drain disposal system for stormwater collection and disposal north of the 333 Building. This system was designed and installed in 1990.		
Location:	The Inventory of Miscellaneous Streams Report states it is located approximately 18.3 meters (60 feet) north of the 333 Building.		
Process Description:	The Inventory of Miscellaneous Streams Report states the injection well is below grade and drains a network of four catch basins. The network is known as SS-2 in document WHC-SD-L125-ES-001. A 300 Area Storm Water Engineering Study noted that the existing 10-cm (4-in.) collection pipe was undersized for the projected flow. A white PVC pipe emerged laterally from the asphalt in the approximate location described in the Inventory of Miscellaneous Streams (DOE-RL-95-82, Rev. 3).		
Related Sites/ Structures:	The site is associated with the 333 Building and UPR-300-46.		
Waste Type:	Stormwater Runoff		
Waste Description:	The "Inventory of Miscellaneous Streams", Revision 3, states that the site receives less than 1.9 liters per minute (0.50 gallons per minute) of stormwater runoff only.		
Closure Info:	CG 300-109 and UPR-300-46 were addressed as a group. The information below documents information for the group of sites.		

The Cleanup Verification Package (CVP-2010-00004) has documented that the 300-109, 333 Building Stormwater Runoff waste site and UPR-300-46, Contamination North of 333 Building waste site have met the rural-residential scenario remedial action objectives (RAOs) established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (ROD) (EPA 2001). The evaluation shows that the sites have been successfully remediated and that there are no residual hazardous/dangerous materials present above the RAOs in the soil. Therefore, the 300-109 and UPR-300-46 waste sites are protective of human health, groundwater, and the Columbia River.

Remediation of the 300-109 waste site was performed from April 28 through April 29, 2009. The soil and asphalt within the waste site footprint were excavated to an average depth of 2.6 m (8.5 ft) bgs, with a maximum depth of 3.7 m (12 ft) bgs at the location of the drain. The resulting 325 BCM (425 BCY) of soil was disposed at ERDF. The french drain and associated vitrified clay pipe was found and removed during the remediation. The PVC pipe noted in documentation from the 1990s was not found during remediation.

The Contaminants of Potential Concern (COPCs) for the UPR-300-46 and 300-109 waste sites were identified using historical information for the 333 Building storm water system and the contamination associated with the UPR-300-46 spill. The COPCs associated with the 333 Building and the UPR-300-46 spill include uranium-234, uranium-235, uranium-236, uranium-238, technetium-99, and thorium-232. In addition and in consideration of the storm drain receiving runoff from roofs and pavement surfaces, inductively coupled plasma (ICP) metals, PAH, and PCBs were included as COPCs.

Verification sampling for the UPR-300-46 and 300-109 waste sites was performed on January 6, 2010, to support a determination that residual contaminant concentrations at these sites meet the cleanup criteria specified in the RDR/RAWP and the 300-FF-2 ROD. The complete laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to submitting to the Hanford Environmental Information System (HEIS) for archiving and are provided in Appendix B of the RSVP.

This report demonstrates that the 300-109, 333 Building Stormwater Runoff and UPR-300-46, Contamination North of 333 Building sites have met the rural-residential scenario RAOs established in the RDR/RAWP and the ROD. The evaluation shows that the sites have been successfully remediated and that there are no residual hazardous/dangerous materials present above the RAOs in the soil. Therefore, the 300-109 and UPR-300-46 waste sites are protective of human health, groundwater, and the Columbia River.

Code: 300-110	Classification: Accepted
Names: 300-110; 333 Building Stormwater Runoff; Miscellaneous Stream #456	Reclassification: Interim Closed Out (6/29/2010)
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date:
Description: The site is a 0.41 meter diameter drain with a metal grate labeled "Internal Radioactive Contamination" due to its proximity to the WIDS Site 618-1 Burial Ground. The drain had a dirt bottom that is approximately 0.61 (2 feet) below the surface of the asphalt and an overflow line that drains to the process sewer.	
Location: The site was a drain located 12.6 meters (41.3 feet) east of the southeast end of the 333 Building.	
Related Sites/Structures: The site is associated with the 333 Building. This site is associated with an unplanned release	

WIDS Site UPR-300-17. The 618-1 Burial Ground is located adjacent to and just northeast of this unplanned release.

Waste Type: Stormwater Runoff

Waste Description: The "Inventory of Miscellaneous Streams", Revision 3, lists the flow rate as less than 1.9 gallons per minute (0.50 gallons per minute). This document lists the stream as containing stormwater only. The disposal structure is labeled as being internally contaminated.

Closure Info: 618-1, 618-1:1, 618-1:2, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA were addressed as a group. The information below documents information for the group of sites.

The 618-1 Burial Ground, two subsites, three consolidated sites and four co-located sites were remediated as a group. This group included WIDS sitecodes 618-1, 618-1:1, 618-1:2, 333 LHWSA, UPR-300-13, UPR-300-14, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA. Parts of waste sites 300-15, 300-259 and UPR-300-17 were also remediated along with 618-1. Several facilities were built over the top of portions of the 618-1 Burial Ground after it ceased to operate. These facilities were demolished and their debris taken to the Environmental Restoration Disposal Facility (ERDF) prior to the start of the burial ground remediation project.

Cleanup Verification Package CVP-2010-00001 demonstrates that remedial action at the site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established for the industrial land-use scenario in the Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the RDR/RAWP(DOE-RL-2001-47, Rev 3).

Field remediation activities were performed between September 17, 2008 and September 10, 2009, in accordance with the RDR/RAWP. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at Environmental Restoration Disposal Facility (ERDF). No excavated soil was used as clean, uncontaminated backfill.

Excavated material consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, and empty metal containers. Twenty metal drums containing personal protective equipment were removed from the trenches. Several bottles containing liquid and/or powder were also removed.

Some land disposal restricted (LDR) materials like lead solids contaminated with barium and chromium, were identified among the debris. The LDR material was segregated from the bulk soil and non-LDR debris for disposal. The bulk soil and non-LDR debris was sorted and segregated in the burial trenches. After sorting, the remaining bulk soil debris stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions. The released stockpiled material was transported to ERDF for disposal. Land disposal restricted materials that had been segregated for treatment were transported to ERDF under a separate waste profile.

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Contaminants of Potential Concern for the statistical samples included cesium-137, uranium-233/234, uranium-235, uranium-238, barium, beryllium, chromium (total), copper, lead, lithium, mercury, molybdenum, nickel, silver, uranium (total metal), zinc, PCBs, chloride, fluoride, nitrate, nitrite, and sulfate. Arsenic, antimony, boron, cadmium, cobalt, manganese, selenium, and vanadium were evaluated for the expanded inductively coupled plasma metals analytical list.

The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone.

Code: 300-121 **Classification:** Accepted

Names: 300-121; 3621D Building Stormwater Runoff; Injection Well #26; Miscellaneous Stream #403 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain with a concrete base. The site is on a slope so the top of the drain rises between 8 to 27 centimeters (3.1 to 10.6 inches) above the ground surface. Approximately 20 centimeters (7.9 inches) from its top, the drain starts to narrow. The drain is covered by a 1.37 meter (4.49 foot) metal lid. The lid appears to fit flush with the concrete base. The lid is labeled "Confined Space" and has "FD 26" written on it. The site is surrounded by sandy soil and rocks.

Location: The site is west of the southwest corner of the 3621D Building. It is outside the fence that surrounds the building. The 3621D building is located southeast of the intersection of Locust Street and the George Washington Way extension.

Process Description: The drain received effluent from floor drains inside the 3621-D building. All the floor drains inside the 3621-D building have been plugged.

Related Sites/ Structures: The site is associated with the 3621D Building.

Waste Type: Water

Waste Description: The site received condensate from the air receivers inside the 3621D Building. It may also have received any spills that reached the floor drains. There is a potential for contamination from petroleum and from ethylene glycol.

Code: 300-123 **Classification:** Accepted

Names: 300-123; 366 Building Fuel Oil Bunker Loading Station Steam Condensate French Drain; Miscellaneous Stream #342 **Reclassification:** Interim Closed Out

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that received steam condensate from the 366 Building fuel oil bunker loading station. The french drain is a metal culvert that is covered with a 0.69 meter (2.25 foot) diameter diamond plate metal cover with four 1.9 centimeter (0.75 inch) holes in the cover. The lid is discolored by rust. Inside the french drain, there is soil and rock about 1.4 meters (4.5 feet) from the top of the culvert. There are also granular ash deposits on the ground in the general area east northeast of the 384 powerhouse. The soil on the south side of the French Drain has eroded into the excavation for 300-6 exposing the metal culvert.

Location: The site is located southwest of the southeast corner of the 3715 building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: station. In the area were also ancillary piping 300-273 and 300-6, 366/366A Fuel Oil Bunkers.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the site has the potential to be contaminated with fuel oil. When this site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

As part of the DynCorp review, Michelle Gunter was contacted. She recalled a spill to one of the injection wells. Documentation was found for a small spill (less than one gallon) into injection well #342 (300-123). Historical documentation for changes to the "Inventory of Miscellaneous Steams" was reviewed. It was found that streams 653 (300-124), 342, and 344 (300-122) all have the same comment. This may be a mistake in the report. No evidence of discharges to streams 653 and 344 have been found.

Code: 300-175 **Classification:** Accepted

Names: 300-175; 3714 Building Steam Condensate; Miscellaneous Stream #434 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1995

Description: The site was a 36 centimeter (14.2 inch) diameter, concrete french drain with a metal cover on the west side of the demolished 3714 building. The inside had been dry and filled with cobbles. There are no steam lines entering the site, and no steam lines are visible inside the drain. In August 2011, the drain structure was filled with grout.

Location: The 300-174 french drain is located on the west side of the 3714 Building.

Process Description: Steam was produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site was related to the 3714 Building.

Waste Type: Steam Condensate

Waste Description: The waste was nondangerous/nonradioactive steam condensate only. The flow rate when the site was active was less than 0.038 liters (0.01 gallons) per minute.

Code: 300-214 **Classification:** Accepted

Names: 300-214; 300 Area Retention Process Sewer; 300 RPS **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:** 1/1/1953

Status: Active **End Date:**

Description: The site is an underground carbon steel and polyvinyl chloride pipeline connecting the 300 Area laboratory facilities (308, 324, 325, 326, 327, and 329 buildings) to the 307 Retention Basins. The Retention Process Sewer (RPS) provides radioactive monitoring and transport of nonhazardous, potentially radioactive process waste.

Location: and 309 Buildings, discharging to the 307 Retention Basins.

Process Description: The Retention Process Sewer (RPS) collects non-hazardous, potentially radiologically-contaminated waste from the 324, 325, 326, 327, and 329 buildings. When the 308 building was active, it also generated effluent discharged to the RPS. The potentially contaminated effluent is discharged to the 307 Retention Basins. The retention basins are periodically sampled and analyzed. Waste below a predetermined level (5,000 picocuries per liter) is discharged from the basins through the Process Sewer to the 300 Area Treated Effluent Disposal Facility (TEDF). Waste above the discharge criteria is held for transport to the 200 Area double shell tanks. Beta-gamma detectors in the four diverters at the laboratory buildings monitor the RPS waste activity. Prior to October 1, 1998, if the RPS waste was contaminated, it was diverted to the Radioactive Liquid Waste Sewer (RLWS). During normal operations the waste from the RPS is held in one of the 307 Retention Basins for sampling and discharge. If the facility beta-gamma detector alarm trips, all waste flowing in the RPS is rerouted to a different one of the 307 retention basins. This waste will be sampled, analyzed and disposed of accordingly. The 324 and 327 Buildings have opted not to use this method of containment. In the event that the facility RPS beta-gamma detector alarms at either of these facilities, the waste transfer to the RPS is halted and contained at the facility.

Related Sites/Structures: The retention process sewer includes four diverter stations, a sample pit northwest of basin 1, and the 3707-F control shack. The system is related to the 340 Waste Handling Complex, the process sewer, and the 300 RLWS.

Waste Type: Process Effluent

Waste Description: The waste discharged to the Retention Process Sewer (RPS) is nonhazardous, potentially radioactive waste (not to exceed 5,000 picocuries per liter) from the 300 Area Laboratory facilities. In FY1998, approximately 12 million liters (3 million gallons) flowed through the RPS to the 307 Retention Basins.

Code: 300-218	Classification: Accepted
Names: 300-218; 314; 314A and 314B Buildings; Engineering Development Laboratory	Reclassification: Interim Closed Out (9/29/2011)
Type: Fabrication Shop	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1996

Description: The site consists of the 314 Building and the associated 314A and 314B Buildings. Both the 314A and 314B buildings were attached to the 314 Building. Because the 314A building was demolished some time ago, the remaining 314 and 314B buildings are often referred to as the 314 facilities, or collectively as the 314 Building. This site has been demolished down to the slab. This building was one of the original World War II era 300 Area, MED/DuPont structures. Several rectangular additions were constructed along the north and south sides of the 314 building. The building frame work was bolted steel. The gable roof was constructed of corrugated asbestos. Exterior walls and partitions were concrete block. The floor was reinforced concrete with test pits and a basement room at the west end. A small second floor or mezzanine existed at the west end of the building. The principal utilities were sanitary water and sewer, steam, normal building power, compressed air and process sewer. The building had a wet sprinkler system. Air conditioning and heating was provided in the office areas along the north side of the building and in the second floor mezzanine through the use of heat pump systems. Evaporative cooling and heating by steam space heaters was provided within the high/open bay area. Electric service was provided from a 1000 KVA transformer outside the building. Service voltage is 480/277 V. Distribution voltage within the building from dry transformers, is 120/208 V and 120/240 V. A 7.5 ton bridge crane serves the high bay on the south side. The 314A Autoclave Pit was attached on the northeast corner of the 314 Building. The 314A Building

included a basement which became radiologically contaminated by the autoclave operations. The above ground portion of the building was demolished, probably sometime in the 1950s, but the history and details of the 314A Building are not well documented. The basement was left in place, filled with dirt, concreted over and the resulting concrete slab was fenced off. The 314B Stress Rupture Test Facility was attached to the northwest corner of the building and consisted of eight small rooms with blow out roof panels and blast doors for the purpose of conducting high pressure experiments. The facility was placed in standby in June of 1996. The water and sprinkler systems were drained, and the ventilation was shutdown and capped where needed. The facility was cleaned out with the exception of a few large pieces of equipment, which were excessed in place or have storage agreements with the owners. Power remains connected to the facility. Some interest in leasing the facility to a private enterprise has existed, but this may be impractical because of the legacy contamination remaining in the high bay. Permanent equipment for processing, storing and disposing of material or waste consists of pits, sumps, drywells, tanks, trenches, airshafts, and the soil column. All are suspected of being contaminated. Smoke from a fire in the 1950's permanently contaminated surfaces inside the 314 Building, which were painted over to fix the contamination. Water used to fight the fire was at least partially responsible for transporting uranium dust from the milling operation and uranium oxide ash from an oxide burner into the soils surrounding the facility.

Location: The 314 and 314A buildings were located in the northwest section of 300 Area, near the corner of Alaska and Ginko Streets

Release Description: A number of known releases have happened at the 314 building during the period from 1943 to 1971 when the building was used for reactor fuel manufacturing. Many were associated with sludge or turnings fires and autoclave explosions. Others resulted from the lathe and machining operations, extrusion press work, outgassing and other fuel fabrication operations. A fire occurred in the high bay area during the 1950's. The fire spread contamination through the high bay area. Water used to fight the fire contaminated soil around the facility. Historical documents have noted underground radioactive contamination on the west side of the building. Efforts to decontaminate the site included removal of a concrete slab, water drainage trench, and supporting lumber and soil under the slab. Documents also indicate uranium contamination embedded in the concrete walls, floors and overhead piping inside the building, principally in the high bay area. A large fire occurred several years ago and is known to have contaminated the exterior grounds with washdown run off. Historical practices were also known to include washing the floor with hoses and directing the flow outdoors. Other operations with uranium also are known to have contributed to exterior soil contamination.

Process Description: The 314 "Press Building", built in 1944, had numerous uses before being retired. The original mission of the 314 Building was fabrication of uranium metal fuel for single pass production reactors. Processes included uranium casting machining, and chemical milling, however in 1944 the facility was used for outgassing and straightening of fuel rods that were extruded offsite. In 1945, the onsite fuel rod extrusion process began in the 314 building. The uranium billets arrived at the 314 building for extrusion, outgassing and straightening. Then they were sent to the 313 building for machining, canning and inspection. The rods were returned to the 314 building for autoclaving and radiographic testing. Other related operations included chip recover, melt plant operations, and oxide burner operations for uranium recovery from scraps and dust. Later, the facility was used for testing of zirconium fuel cladding alloys. After the closure of the single pass reactors, the 314 building housed several research and craft activities. These included space for test equipment and mockups. The space was used for housing autoclaves, high-pressure and high temperature loops and prototype equipment that was in development and testing. A combined shop and repair area were located in the building. Charging machines and reactor auxiliary equipment were developed in the building. Since the 1970's, laboratory work was done by PNL's Materials Department. This building was one of the original World War II era 300 Area, MED/DuPont structures. Several rectangular additions have been constructed along the north side of both 314 and 314B. The building frame work

was bolted steel. The gable roof was constructed of corrugated asbestos. Exterior walls and partitions were concrete block. The floor was reinforced concrete with test pits and a basement room at the west end. A small second floor or mezzanine existed at the west end of the building. The principal utilities were sanitary water and sewer, steam, normal building power, compressed air and process sewer. The building had a wet sprinkler system. Air conditioning and heating was provided in the office areas along the north side of the building and in the second floor mezzanine through the use of heat pump systems. Evaporative cooling and heating by steam space heaters was provided within the high/open bay area. Electric service was provided from a 1000 KVA transformer outside the building. Service voltage was 480/277 V. Distribution voltage within the building from dry transformers, was 120/208 V and 120/240 V. A 7.5 ton bridge crane serves the high bay on the south side. The 314B Stress Rupture Test Facility was attached to the northwest corner of the building and consisted of eight small rooms with blow out roof panels and blast doors for the purpose of conducting high pressure experiments. The facility was placed in standby in June of 1996. The water systems and sprinkler systems were drained and the ventilation was shutdown and capped where needed. The facility was cleaned out with the exception of a few large pieces of equipment, which were excessed in place or have storage agreements with the owners. Power remained connected to the facility. Some interest was shown in possibly leasing the facility to a private enterprise. However, the legacy contamination remaining in the high bay may prevent this.

**Related Sites/
Structures:** The building is associated with 300-16, 300-24 and 300-28.

Waste Type: Sludge

**Waste
Description:** After the facility demolition in 2006 the pits and trenches were filled with soil. In 1997 sludge and dust residue was observed in the building. Sludge was retrieved from a pit and a trench inside the 314 building in 1996. The sludge contained PCB's, lead and mercury at regulated levels. Other contaminants included uranium, thorium, cadmium, bismuth, aluminum and barium. Contaminated soil is likely to be found around the building exterior.

Waste Type: Equipment

**Waste
Description:** The building had contaminated duct work that was posted and contained a large inventory of fixed uranium contamination. The HEPA filtered exhaust system had the potential for radiological contamination and was posted. There was also contaminated equipment and items that were being stored or had been excessed in place. All equipment was disposed during facility demolition in 2006.

Waste Type: Asbestos (non-friable)

**Waste
Description:** The 314 Building was over 50 years old, and as such, its construction materials contained asbestos, mercury switches, light fixtures containing PCB's, and possibly lead based paints. Asbestos may be found in tile, insulation, and transite. Significant amounts of asbestos exist in the materials of construction such as the roof, pipe insulation, etc. During the facility demolition in 2006 all the materials were removed and disposed of.

Waste Type: Equipment

**Waste
Description:** The building was likely to have contained contaminated floor drains, both chemical and radioactive. There was a potential that mercury could exist in some of the older drains and sewer lines. No known inventory (mercury) was found during the facility characterization.

Closure Info: 300-16:2, 300-24, 300-80, and 300-218 were addressed as a group. The information below documents information for the group of sites.

Remedial action activities at the 300-16:2, 300-24, 300-80, and 300-218 waste sites were carried out from December 21, 2009 to May 20, 2010. The excavation (Figures 2 and 3) reached a maximum depth of 3.0 m (9.8 ft) near the center and southwest corner of the collective waste sites (Figure 4). Approximately 6,275 m³ or 14,995 tons of materials were

removed from the waste sites' excavation and direct loaded for disposal at the ERDF. There is no waste staging pile area footprint or overburden soil stockpile associated with these waste sites. The utility pole that was associated with the 300-16:2 subsite was removed. The autoclave pit underlying the former 314A Building was removed. The structures associated with the 300-80 drain were removed. The concrete slabs associated with the 314, 314A, and 314B Buildings have been removed.

During remediation, a suspected french drain was found at the base of the exterior stairwell on the southwest edge of the 314 Building slab. Discussions with the EPA concluded that this drain could be remediated concurrently with the 314 Building waste sites. This suspected french drain was removed. Two pits within the main 314 Building extended below the level of the current excavation. Discussions with EPA concluded that the remaining portions of these pits could remain in place. The 300-285 (300FF2-018; FD 32), 300FF2-270 and 300-240 underground injection control (UIC), wells, are within the footprint of the 314 excavation layback. The listed UIC wells are not part of the waste site. They are listed for tracking purposes. The UIC wells have a "Not Accepted" classification status and are still present at the site.

All the foundation debris such as concrete, metal rebar, miscellaneous piping (e.g., steam, water, etc.), and electrical conduit was excavated and removed from the waste sites. No anomalous materials were observed during remedial activities.

Post-excavation radiological survey of the 314 Building slab was performed in June 2010. Additional radiological surveys of the 300-16:2 utility pole were performed in March 2011. The field radiological measurements survey results did not identify any residual radiological contamination above background levels.

Code: 300-219	Classification: Accepted
Names: 300-219; 300 Area Waste Acid Transfer Line	Reclassification: Interim Closed Out
Type: Process Sewer	Start Date:
Status: Inactive	End Date:
Description:	This site includes the transfer lines connecting the various components of the 300 Area Waste Acid Treatment System (WATS) and the 300 Area Uranium Recovery Operations. The piping, located in the Pipe Trench (300-224), includes: (1) the 333 N Fuels process transfer lines to the process acid waste solution storage tanks in the 333 and 334-A Facilities, (2) the waste transfer lines to the waste treatment facilities in the 313 Uranium Recovery/WATS Neutralization Room, (3) the transfer lines to/from the 313 Building to the neutralized acid waste storage tanks in the 311 Tank Farm, (4) ethylene glycol supply and return lines in the Pipe Trench between the 333 Building and the 313 Building used to heat this portion of the Pipe Trench, (5) fresh acid (nitric and sulfuric) lines from the 334 Tank Farm to the 333 Building, and (6) caustic lines from the Tank Farm to the 313 WATS/URO Room. As of 11/1/98, all process and waste piping inside the associated facilities had been disconnected from the Pipe Trench; only the piping inside the Pipe Trench or outside the facilities (e.g. tank farm piping) remains for pipes associated with the 300 Area Waste Acid Treatment System or the 300 Area U-Bearing Acid Treatment System.
Location:	See 300-224 for the Pipe Trench location description. The WATS transfer lines are located within the Pipe Trench. Some transfer lines within the 334-A Facility, the 313 WATS and URO, and the 303-F Building were removed during the Decontamination and Inspection Plans for Phases I and II of the closure plan.
Process Description:	WATS PROCESS TANK DRAIN: The 333 N-Fuels spent etch acid drain lines in the Pipe Trench to the 334-A Facility (storage tanks) are 10.2 cm. and 7.6 cm. (4 in. and 3 in.) PVC

lines. **UPSTREAM WATS ACID TRANSFER:** Batches of WATS waste acid solutions were pumped from the 334-A tanks through 5.1 cm. (2 in.) PVC lines in the Pipe Trench to the 313-TK-2 neutralization tank in the 313 Building. **WATS NEUTRALIZED WASTE TRANSFER:** After neutralization with caustic, the batch of neutralized acid waste solution was pumped through 5.1 cm. (2 in.) lines in the Pipe Trench to storage tanks in the 311 Tank Farm. In 1995, recycle piping was installed in the Pipe Trench from the 311 Tank Farm waste storage tanks to the 313 Building to allow additional solids removal if required. **URANIUM-BEARING ACID TRANSFER:** The U-bearing waste acid solutions were collected in the Interim Storage/Blending Tank 333-TK-24 in the 333 Building and batch transferred via 5.1 cm. (2 in.) stainless steel lines in the Pipe Trench to Storage Tanks 1 and 2 in the 333 West Tank Farm. The stored U-bearing acid was transferred through a 2 in. stainless steel line in the Pipe Trench back into the 333 Building to a valving manifold where it was routed west through stainless steel piping in the Pipe Trench, south and east to the 303-F Building and then on to the acid storage tanks 313-TK-3 and 313-TK-4 in the 313 Uranium Recovery Operation (300 URO). **URANIUM RECOVERY:** The U-bearing waste acid solutions were neutralized, filtered, and transferred through pipes in the Pipe Trench to the same waste storage tanks in the 311 Tank Farm as used to store the WATS neutralized acid waste solution.

Related Sites/ Structures: The Pipe Trench (300-224), the 333 Building, the 334 Tank Farm, the 334-A Building, the 303-F Building, the 311 Tank Farm, and the Uranium Recovery Operations in the 313 Building.

Code: 300-224	Classification: Accepted
Names: 300-224; WATS and U-Bearing Piping Trench	Reclassification: Interim Closed Out
Type: Trench	Start Date: 1/1/1960
Status: Inactive	End Date: 1/1/1988

Description: The site is a subsurface, concrete pipe trench with concrete block and metal plate covers. The pipe trench has several sections which allow piping connections to be made between process operations in the 313 Building, the 303-F Building, the 311 Tank Farm, the 333 Building, the 334-A Building, and the 334 Tank Farm, as shown in the attached scanned schematic diagram.

The west part of the concrete pipe trench, which connects the 333 Building and the 313 Building, is approximately 188 m (617 ft) long with internal dimensions of about 45.7 cm by 45.7 cm (18 in by 18 in). This section of the pipe trench has ethylene glycol heating lines used for freeze protection. An access box or valve box with a metal lid abuts the west wall of 333 where the pipe trench emerges from the building. The pipe trench is then covered by concrete lids measuring 1.21 m by 0.64 m (4 ft by 2.1 ft).

The concrete covers are numbered with # 1 being the closest to the west wall of 333. Some of the covers adjacent to 333 and the 333 West Tank Farm are posted "Fixed Contamination Area." The entire length of the pipe trench is posted "Radioactive Material, Internally Contaminated." The pipe trench runs south along the west side of 333, makes a 90 degree turn to the west at the building's southwest corner, crosses the street, makes another 90 degree turn to the south and runs along the east side of the 3712 Building. A metal access lid is found on the east side of 3712, between the covers labeled # 65 and # 66. This allows access to the pipe trench and the helium lines that used to run between 306W and 3712.

The pipe trench makes a 90 degree turn to the west just east of the northeast corner of 303G. It is just west of this turn that the trench runs under a railroad track. The pipe trench then runs along the north side of 303G where an access box or valve pit is located by the northwest corner. The metal lid covering this concrete box measures approximately 0.6 m by 1.8 m (2 ft by 6 ft) and is posted "Radioactive Material, Internally Contaminated." The pipe trench at this

point also turns north 4.5 m , east 16 m, then north for 1 m, where the railroad tank car pumping station is located. This station was used for the transfer of caustics. A french drain (H-3-23530 sht. 1 rev. 3) located at the south end of this station, received steam condensate from the caustic pump operation and is connected to a floor drain of the pipe trench. The pipe trench continues along the north side of the 311 Tank Farm where there is a second row of concrete lids adjacent and parallel to the pipe trench.

The concrete covers in this second row are longer and wider than those covering the pipe trench. The pipe trench makes a 90 degree turn at the northeast corner of 303F and runs along the east side of that building where it makes another 90 degree turn to run through the building. Drawing H-3-10022 shows where the "Acid Sump" was located east of the 303F Building. At one time the sump was lined with acid brick and appears to have been used to collect effluent from the pipe trench, from the vent/overflow of the nitric acid tanks, from the caustic drains, and from the floor drains in the 303F Building (including the various pumping stations). The pipe trench through the 303F Building is shown on H-3-10037, which also shows a floor drain in the pipe trench. The pipe trench reappears on the west side of 303F at a transfer box and enters the southeast wall of the 313 Building at another transfer box. A steam line, among other things, enters the transfer box on the west side of 303F.

The concrete blocks covering the trench between 303F and 313 are much larger, measuring approximately 0.9 meters by 1.2 meters (3 feet by 4 feet). The WATS pipe trench from the 303F to the 313 Building piping wall box is shown on H-3-10157. Drawing H-3-10157 shows the process sewer lines beneath the 313 Building including the WATS pipe trench drain in the floor of the wall box next to the 313 Building. Between the 333 Building and the 313 Building, the pipe trench has 2.4 centimeter (1 inch) diameter weep holes in the bottom of the trench at 6.11 meter (20 feet) intervals to allow precipitation to drain out into the soil at the low points, especially as the pipe trench passed under the railroad tracks. Consequently, leaks to the pipe trench are expected to have resulted in contamination of the ground beneath the length of this section of the pipe trench (see H-3-18530).

Location: The pipe trench runs between the 313 Building, the 303-F Building, the 311 Tank Farm, the 333 Building, the 334-A Building, and the 334 Tank Farm, as shown in the attached scanned schematic diagram.

Process Description: The 333 Building portion of the pipe trench contains chemical process transfer piping for the 300 Area Waste Acid Treatment System including the waste etch acids drains to the 334-A Building (WATS) and the transfer lines from 333-TK-24 to the additional U-bearing waste acid storage tanks in the 333 West Tank Farm. The pipe trench also contains transfer piping for fresh acids and for fresh oil and waste oil (for the 333 co-extrusion press). Until 1977, the concrete pipe trench on the east side of 333 drained into a limestone pit (618-1:2) located over the 618-1 Burial Ground. This end of the pipe trench was sealed in July 1975 and a drain was installed to the process sewer.

The 313 Building portion of the pipe trench contains transfer piping for the 300 Area WATS, for the 313 Uranium Recovery Operation (URO), for fresh caustic for neutralization, for the neutralized acid waste (WATS) stream, and the neutralized U-bearing acid waste (URO) stream between 313 Building and the neutralized waste storage tanks in the 311 Tank Farm.

Related Sites/Structures: The pipe trench is associated with the 300-258 pipe trench, the 334-A Acid Treatment Facility, 300-64, the 333 U-bearing acid storage area, the 311 Tank Farm, the 303-F building, the 313 Uranium Recovery Operations and Waste Acid Neutralization Operations, and (after about 1977) the process sewer. The site was associated with the 618-1:2 Neutralization Pit.

Waste Type: Chemicals

Waste Description: The pipe trench and subsurface soil have become contaminated due to multiple releases into the

trench. Releases included acids, bases, and solvents. Some of released acids contained dissolved uranium. See the "Releases" section for information on the individual releases.

Code:	300-251	Classification:	Accepted
Names:	300-251; Unplanned Release Outside the 303-K Building	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1943
Status:	Inactive	End Date:	
Description:	The site consists of uranium contaminated soil around and under the 303-K Building (also known as the 303-K Contaminated Waste Storage). The 303-K building was removed and clean closed on July 22, 2002.		
Location:	The unit is located in the 300 Area, on the north side of Ginko Street between the 313 and 314 Buildings.		
Release Description:	Releases may have occurred during decontamination activities within the facility or the storage of materials outside the facility. Individual events were not always documented.		
Process Description:	The building was constructed of cinder blocks that rested on a concrete slab. The building was constructed in 1943 for storage to support uranium fuel production. In 1953, building modifications and outdoor storage pads (concrete and asphalt) were constructed to support the decontamination of aluminum reactor spacers. From 1953 to 1977, decontamination operations were conducted at this site. From 1977 to 1982, the building was used to cure and test concreted billets of uranium chips and fines from the 303 Concretion facility. Since 1953, radioactive waste has been stored at the facility including the outdoor areas. From 1986 to 1995, low-level radioactive waste and mixed waste was stored within the building and the outdoor area.		
Related Sites/ Structures:	The site is related to WIDS Site 303-K Contaminated Waste Storage (303-K CWS). The 303-K CWS, a Treatment, Storage and Disposal (TSD) Unit, was cleaned closed July 2002.		
Waste Type:	Soil		
Waste Description:	The waste is contaminated soil from operations at the 303-K Contaminated Waste Storage Facility.		

The following information is provided about operations inside the facility. Since 1943, the building has been used to store various amounts of low-level radioactive wastes. Solids are stored outside, while liquids are contained inside the building. Mixed waste stored after January 1986 included: a. Neutralized solid waste for the unrecoverable uranium stream of the 300 Area Waste Acid Treatment System, b. Uranium contaminated metallic lead, c. Salt and sludge containers from beta and quench metal heat treatment furnaces, d. Uranium contaminated perchloroethylene, chloroform, and ethyl acetate, e. Beryllium/zircaloy-2 alloy chips and fines generated at the stepcut lathe, before and after concreting at the 304 Concretion Facility, f. Spent coolant from counterbore lathes in the 333 Building, g. Waste oil and hydraulic fluids that are known, or strongly suspected, to be contaminated with uranium, h. Salt crystals (copper fluorozirconate) from the bottom of the waste storage tanks in the 334-A Building, i. Acids (HNO₃, HF, and H₂SO₄ mixtures) as a solution and sorbed on opal clay. Analyses of soil samples taken in 1977 for RCRA closure resulted in the conclusion that there are no metals or semivolatile organic constituents of concern present in the soil.

Code:	300-253	Classification:	Accepted
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Names: 300-253; 384-W Original Brine Pit; 384-W Original Salt Dissolving Pit and Brine Pump Pit

Reclassification: No Action (5/26/1999)

Type: Sump

Start Date:

Status: Inactive

End Date: 1/1/1977

Description: The site was a two-chambered concrete structure. No surface features were noted at the structure's location except a patch of asphalt that was darker than the surrounding material. The structure was located partially below grade with the top 83 centimeters (33 inches) visible. It had either a concrete or metal lid (see Site Comment). The larger chamber, was the salt dissolving pit, also identified as the "Salt Storage Pit" on drawing H-3-36240. This section held the salt that was dissolved to make the brine. Typically, the salt dissolving pit was connected to the brine pump pit by a piece of perforated pipe located at the bottom of the structure. The pipe was covered by layers of gravel and sand. The smaller chamber was the brine pump pit, also identified as "brine" on drawing H-3-36240. This chamber held the filtered brine for use in powerhouse operations. The pump pit was connected to the powerhouse by a 5.1 centimeter (2 inch) line and a 2.5 centimeter (1 inch) line.

Location: The original 384 brine pit was located approximately 0.6 meters (2 feet) south of the 384 Building's southwest corner. The brine pit's west wall was in line with the west wall of the 384 Building.

Process Description: The steam system used "soft" water. Brine was used to regenerate the ion exchange demineralizers in the water softeners. The brine was created by distributing water across the surface of the salt. As the water passed through the salt, the solution became saturated. The brine solution passed through layers of sand and gravel which filtered out salt crystals and other particles. The filtered brine passed into the pump pit via a pipe that connected the chambers. Flow through the brine pit was achieved by the addition of new water into the salt dissolving pit and the removal of brine from the pump pit.

Related Sites/Structures: The site is related to the 384 Powerhouse. It was replaced by another brine pit, WIDS Site Code 300-222.

Waste Type: Abandoned Chemicals

Waste Description: Salt cake may be present as part of any demolition debris at the site. Salt cake may be designated as a dangerous waste under the Model Toxics Control Act (MTCA).

Code: 300-255

Classification: Accepted

Names: 300-255; 309 Tank Farm Contaminated Soil

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1969

Description: The site is contaminated soil located inside the 309 Building Tank Farm fenced area. The source of the contamination was probably the piping related to tanks 309-TW-1, 309-TW-2 and 309-TW-3. The 309 Tank Farm houses three underground holdup tanks (WIDS Sites 309-TW-1, 309-TW-2 and 309-TW-3) covered by a protective concrete pad, an underground concrete covered valve pit, above and below ground transfer pipelines, an ion exchange vessel, a control panel, and a large access area of mixed sand and gravel. In 1996, the Tank Farm area and associated hardware and fixtures were surveyed, sampled, assayed, video taped, or otherwise characterized. The purpose of this work was to establish the radiological status of the Tank Farm as preparatory work to cleanup actions.

Location: The site is located northeast of the 309 Building and inside the 309 Tank Farm fence.

Process The underground tanks were constructed in conjunction with the Plutonium Recycle Test

Description: Reactor (PRTR) (a.k.a. 309 Building) in the late 1950's. The tanks are described in WIDS Sites 309-TW-1, 309-TW-2, and 309-TW-3. The 309-TW-3 tank typically collected liquid waste from the storage basin overflow and drain system, the Rupture Loop Annex Cell sump, contaminated floor drains, Loadout Facility drains, exhaust fan pit drain, stack and duct drains, and the exhaust air filter drain. Tank 309-TW-2 was used as a backup for 309-TW-3. Tank 309-TW-1 was used as a process holding tank where liquid from the other two tanks was treated or prepared for pumping liquid waste to the 340 Complex. Sometime after the initial installation of the tanks, an ion exchange column was installed between tanks 309-TW-2 and 309-TW-1. The ion exchange column was used to treat liquid from Tanks 309-TW-2 and 309-TW-3 before sending the liquid to the 340 Complex for disposal (contaminated stream). If the contamination was removed by the ion exchange resin processing, it was sent through the 300 Area Retention Process Sewer to the 307 Retention Basins.

Related Sites/ Structures: The site was related to operations at the 309 Building (PRTR - Plutonium Recycle Test Facility), 309 Tank #1 (WIDS Site 309-TW-1), 309 Tank #2 (WIDS Site 309-TW-2), 309 Tank #3 (WIDS Site 309-TW-3), an underground concrete covered valve pit, above and below ground transfer pipelines, an ion exchange vessel, and a control panel.

Waste Type: Soil

Waste Description: The waste is contaminated soil. Potential radioactive contaminants of concern are cesium-137, cobalt-60, and americium-241. Potential hazardous contaminants are barium, cadmium, chromium, lead, and selenium.

The related contaminated structures, e.g., tanks, valve pit and ancillary piping will need to be removed under a decontamination and decommissioning action prior to soil remediation. The tanks, 309-TW-1, 309-TW-2, and 309-TW-3 are separate sites in WIDS.

Code: 300-256	Classification: Accepted
Names: 300-256; 306E Fabrication and Testing Laboratory Releases	Reclassification: Interim Closed Out (11/22/2010)
Type: Unplanned Release	Start Date: 1/1/1956
Status: Inactive	End Date:

Description: The site is contaminated soil under and around the 306E Building. The area around the 306E building is paved and posted as having underground radioactive contamination.

Location: The 306E Building is on the north side of Ginko Street, in the northeast corner of the 300 Area.

Release Description: Without distinguishing between the 306E and 306W Buildings, Gerber, WHC-MR-0388, states the following. Airborne dust and particulate contamination in and near this facility included uranium and thorium, as well as all of the components of the beryllium-Zircaloy-2 brazing material developed for N Reactor fuel elements. Zircaloy-2 was a blend of zirconium alloyed with small amounts of tin, iron, chromium, and nickel. The N Reactor co-extrusion process also required an exterior jacket of copper-silicon alloy. Poor ventilation was a continual problem throughout at least the first fifteen years of 306 Building history. Additionally, multiple fires and leaks occurred over the years in and around the 306 Building, in barrels and waste "load luggers" containing uranium, thorium, heavy metals, and other fuel component scraps. Fires also occurred around and in building equipment, such as centerless grinders, lathes, electric saws, and other machinery. These fires oxidized and volatilized uranium and other wastes; long-lived airborne contamination, which can be recirculated today, settled in building sumps, crevices, and nearby soil. In addition, tools and fabrication work areas within the building often displayed contamination levels of 20,000 to 80,000 counts per minute during the 1950's and 1960's. As recently as 1987, contaminated equipment entered the building from off the Hanford Site, spreading spotty contamination up to 100,000 disintegration's per minute. Gerber

continues, again without distinguishing between 306E and 306W. In addition to airborne and machinery contamination, multiple drain and piping leaks (WIDS Site 300-15) and spills have occurred in the 306 Building over the years. These spills have included chemicals, cleansers, solvents, reagents, oils containing polychlorinated biphenyls (PCBs), and other substances used in fuel fabrication processes. From 1956 to 1967 (and once after 1967), a lime tank and valve pit just north of the east end of the 306 Building (WIDS Site 300-41) intercepted and neutralized nitric acid-bearing chemical wastes before discharge to the process sewer. In 1976, this pit was inspected, along with the process waste sump, sewer manholes, and the inlet box to the process sewer leaching trenches, after several hundred gallons of slightly enriched uranyl nitrate hexahydrate solution was spilled into the sump. The investigation found that much uranium and thorium contamination lies in and beneath the 306 Building floor, slab, pipe trenches, and sewer lines. Specifically, two large deposits - 2.4 meters (8 feet) long by 0.6 meters (2 feet) wide by 15 centimeters (6 inches) thick - of uranium-bearing particulate matter were found in the inlet box, but the accumulated radioactivity levels were determined to be nondangerous (3.6 grams of uranium per liter of sludge). No significant accumulation was found in the lime pit and sewer manholes. In 1975, piping that had been installed to transfer fresh nitric acid from the 333 Building to the 306 Building, and to route used acids in the reverse direction, were partially removed. However, several feet of pipe "spurs" nearest the 306 Building remain in place. These and other pipes, along with pipe trenches, sumps, sewers, and drains can be expected to hold hazardous chemical residues as well as the metal residues listed previously. In 1979, a HEDL Radiological Engineering report stated: "All sewer lines (WIDS Site 300-15) leading from this building are suspect. The lime pit...contain[s] uranium and thorium sludge. Surface and near surface contamination around this building is to be expected."

Process Description: The original 306 Building was completed in 1956 and named the Fuel Element Pilot Plant. The facility was constructed to support the 313 Building operations. It was expanded in 1960 to contain the co-extrusion fabrication processes for N Reactor fuels fabrication. In 1972, the new eastern half was designated as 306E and became the Hanford Engineering Development Laboratory (HEDL) operated by Westinghouse Electric Corporation. The original western portion of the building, was designated as 306W and was allocated to Pacific Northwest Laboratories (PNL).

Related Sites/ Structures: The site is related to the 306E Building, 333 building, 300 Area process sewer, and 300 Area sanitary sewer. The contaminated soil beneath the 306E Building is WIDS Site 300-256 and the contaminated soil beneath the adjacent 306W Metal Fabrication Development Building is documented as WIDS Site Code 300-33.

Waste Type: Soil

Waste Description: The waste is contaminated soil under and around the 306E Building.

Closure Info: 300-33, 300-256 and 300-41 were addressed as a group. The information below documents information for the group of sites.

The Remaining Sites Verification Package (RSVP-2010-058) for 300-33, 300-256, and 300-41 waste sites have documented that these sites have met both the industrial and rural-residential scenario remedial action objectives (RAOs) as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (300 Area RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (300-FF-2 ROD). Verification sampling data, site evaluations, and supporting documentation illustrate that the site has been successfully remediated and that there are no residual hazardous/dangerous materials present above RAOs in the soil. Therefore, the sites are protective of human health, groundwater, and the Columbia River.

The waste sites consisted of the contaminated soil around and under the 306W and 306E Building, the neutralization tank, and valve pit.

Demolition of the 306E, 306W, and 306E-BA facilities, which overlaid these waste sites, was completed between November 2006 and December 2007. Remediation of the combined 300-33, 300-256, and 300-41 waste sites occurred between July 10 and November 9, 2009. The remediation activities included the removal of the neutralization tank, valve pit, soil, and other debris within the footprint of the 306E/W Building including the partial removal and backfill of the 306E Building assembly pit. All debris and excavation materials have been removed to the Environmental Restoration Disposal Facility.

The 300-FF-2 ROD lists the COPCs for the sites using descriptive and non-analyte-specific terms. The 300-FF-2 ROD lists uranium, thorium, heavy metals (lead), and acids as COPCs for the 300-33 waste site. The COPCs listed for the 300-256 waste site are uranium, thorium, heavy metals, chemicals, cleansers, solvents, reagents, and PCBs. The COPCs for the 300-41 waste site are anions. Based on the chemical composition of the items on these lists, a single list of specific analyses was developed to capture the COPCs for the three waste sites.

Verification sampling was performed on May 6, 2010, to support a determination that residual contaminant concentrations at these sites meet the cleanup criteria specified in the 300 Area RDR/RAWP and the Record of Decision for the 300-FF-1 and 300-FF-5 Operable Units. The verification sample results were provided within the 95% upper confidence limit (UCL) calculation in Appendix B of the RSVP and indicate that the remedial action achieved compliance with the RAOs for the sites.

The laboratory-reported verification data results for all constituents were stored in the Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation in Appendix B of the RSVP.

Verification sampling results also indicated that the residual contaminant concentrations achieved do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow-zone soils. Site contamination did not extend into the deep-zone soils; therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required.

Code: 300-257	Classification: Accepted
Names: 300-257; 309 Process Sewer to River	Reclassification: None
Type: Process Sewer	Start Date:
Status: Inactive	End Date:
Description: The site underground process sewer piping that was originally connected to the 309 Building's Rupture Loop Holding Tank. The tank was removed in the late 1970's. Gerber states that when the Rupture Loop Holding Tank was removed to a 200 Area burial ground, all the connections to the Radioactive Liquid Waste Sewer (RLWS) were severed and plugged. The area where the Rupture Loop Holding Tank was located is now covered with asphalt and is being used as a parking lot.	

The tank had a set of incoming piping that included a 7.6 centimeter (3 inch) steel process sewer pipeline and a 10.2 centimeter (4 inch) steel vent pipeline. The outgoing piping was more complex in that there were two outgoing pipelines that were interconnected in a valve box. One 7.6 centimeter (3 inch) steel pipe run started at the pump on the center top of the tank and ran to the valve box. This pipeline was for pump discharge and was the means of lowering the tank

level.

The second pipe was a 15 centimeter (6 inch) steel overflow pipe that drained to manhole #3. This pipe exited the tank 22.9 centimeters (9 inches) from the top of the tank.

The valve box (pit) was a 1.8 meter by 1.8 meter (6 foot by 6 foot) mostly below grade concrete box with a gravel bottom. The valve box had a manhole and ladder for direct access to the valves. There were also three grade level openings in the top of the valve box for access to the valves with a gate key. It is unknown if the valve box remains in place. The valve box was located approximately 2.1 meters (7 feet) from the Rupture Loop Holding Tank. It may have been removed at the same time as the tank.

There was one 7.6 centimeter (3 inch) incoming pipeline to the valve box and two 7.6 centimeter (3 inch) exit pipelines. Contaminated waste water was diverted at the valve box to the high level waste pipeline that went to the 340 Complex. Uncontaminated water was sent to the process sewer where it teed into the overflow pipeline. At manhole #3, five pipelines converge and flow into a 1 meter (36 inch) 10 gauge corrugated steel pipeline that flowed to the Columbia River. The five pipelines that enter manhole #3 are all process sewer piping with the following sizes and descriptions: 1) a 15.2 (6 inch) steel pipeline from the Rupture Loop Holding Tank overflow line and the valve box, 2) a 30.5 centimeter (12 inch) vitrified clay pipe coming from the 309 Building, 3) a 30.5 centimeter (12 inch) steel line with a 5.1 centimeter (2 inch) condensate drain above the steel pipeline from the 309 Reactor, 4) a 0.76 meter (2.5 foot) steel pipeline from the Condenser Facility (demolished), and 5) a 15.2 centimeter (6 inch) vitrified clay pipe from the 309 Building. According to DOE/EIS-0113, the streams from the 309 Building included cooling water from air conditioning chillers and floor drains from the south basement service area.

The corrugated steel pipe enters a manhole (overflow structure) at the top of the river bank. The structure is 3.8 meters (12.5 feet) deep with the invert to the structure at 1.9 meters (6.2 feet) from the top of the open grate cover. The pipe exits at a depth of 3.8 meters (12.5 feet) on the opposite side of the structure (going towards the river). No pipeline is visible on the river bank or at the edge of the river. DOE/EIS-0113 shows the top view and the profile of this pipeline. The pipeline from the overflow structure (concrete box) is covered by 3.15 meters by 3.15 meters by 0.9 meters (10 feet by 10 feet by 3 feet) deep riprap. Additional riprap has been placed at the terminus of the pipe. At the pipeline terminus there is a minimum of 1.2 meters (4 feet) of riprap cover over the pipeline. This pipeline was identified as discharge No. 014 309 Building Outfall Structure Columbia River Mile 344.5.

According to Nat Harding (Water Utilities), the corrugated pipe has collapsed (due to deterioration) in some places causing subsidences and has had to be filled with dirt.

Location: The site begins southeast of the location of the 309 Rupture Loop Holding Tank (WIDS Site 300-55), joins other process sewer lines and runs due east to a sump (overflow structure) at the top of the river bank.

Process Description: Liquid waste from the 309 Building (Plutonium Recycle Test Reactor) was routed to the Rupture Loop Holding Tank for sampling. If it was contaminated it was sent to the 340 Complex through a 7.6 centimeter (3 inch) underground pipeline. If the waste was not contaminated, it was diverted to the Columbia River via a 1 meter (3 foot) diameter pipeline to the outfall.

Related Sites/Structures: The site was related to the Rupture Loop Holding Tank (WIDS Site 300-55), a valve box, the Radioactive Liquid Waste Sewer (WIDS Site 300 RLWS), manhole #3 and contributory piping coming into manhole #3, an overflow structure at the east end of the site, and piping that exits into the Columbia River.

Waste Type: Equipment
Waste Description: The waste is a pipeline that carried potentially radioactively contaminated water to the river.

Code: 300-258 **Classification:** Accepted
Names: 300-258; Abandoned Pipe Trench Between 334 Tank Farm and 306E **Reclassification:** Interim Closed Out (10/17/2011)
Type: Trench **Start Date:** 1/1/1960
Status: Inactive **End Date:** 1/1/1975

Description: The northern portion of this waste site was remediated with the 618-1 Burial Ground in 2010. The southern portion was sampled and evaluated. No remediation of the southern portion was required. The site was an abandoned subsurface concrete pipe trench. The top of the pipe trench was level with the ground surface and covered with metal plates that measure approximately 0.9 meters by 0.3 meters (3 feet by 1 foot). The metal plates were posted "Radioactive Material, Internally Contaminated." Between the 306E Building and the fence south of the 333 Building, the trench is surrounded by asphalt. The metal cover plates and concrete walls are constructed to allow vehicle traffic on the north side of the 306E Building to drive over the pipe trench. Between the 333 Building fence and the 334 Tank Farm, the trench is primarily surrounded by gravel. The pipe trench is covered by solid plate over most of its length. However, approximately 10 meters (32.8 feet) at the north end have metal plates with approximately 5 centimeter (2 inch) holes. Pipes are visible through these holes.

Location: The pipe trench ran northwest from the north wall of the 306E Building to the southwest corner of the 334 Tank Farm where it joined the south end of the 300-224 pipe trench.

Process Description: The pipe trench was used to house acid transfer piping from the 334 Tank Farm to the 306E Building chemical processing bay in the northeast corner of this facility. From about 1972 to 1975, waste etch solution may have been transferred from the 306E Building chemical bay to the 333/334 Waste Acid Treatment System.

Related Sites/Structures: The site is associated with the 306E Building chemical processing facilities, the 334 Tank Farm, and the 300-224 pipe trench.

Closure Info: The northern portion of the 300-258 waste site that was addressed in the 618-1 Burial Ground excavation is interim closed out within this document based on the results presented in the Cleanup Verification Package for the 618-1 Burial Ground. The 618-1 Burial Ground excavation occurred from September 17, 2008, to September 10, 2009. Two focused, in-process samples were collected from the southern portion of the pipe trench. After sampling, the southern portion of the pipe trench of soil and debris were removed (August 6, 2009) and sent to the Environmental Restoration Disposal Facility (ERDF).

Code: 300-259 **Classification:** Accepted
Names: 300-259; Contamination Area Surrounding 618-1 Burial Ground **Reclassification:** Interim Closed Out (5/11/2010)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The Contamination Area (CA) was posted with light posts and plastic chain that encompasses the 618-1 Burial Ground. The concrete markers for the burial ground (WIDS Site 618-1) were inside the Contamination Area chain. The Contamination Area and Burial Ground were both covered with gravel. A concrete pipe trench (WIDS Site 300-258) and a concrete storage pad

(WIDS Site 333 LHWSA) were also located inside the Contamination Area.

Location: The Contamination Area (CA) is located in the northeast corner of the 300 Area, north and east of the 618-1 Burial Ground.

**Related Sites/
Structures:** The site is related to the 618-1 burial ground and 300-258.

Waste Type: Misc. Trash and Debris
**Waste
Description:**

Closure Info: In accordance with the Remaining Sites Verification Package, RSVP-2009-059, the verification sampling results supports a reclassification of the 300-259 waste site to Interim Closed Out. The current site conditions have achieved the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) (DOE-RL-2001-47, Rev. 3) and in the 300-FF-2 Interim Action ROD.

Remediation of the 300-259 waste site was performed from March 18 through May 18, 2009. Approximately 6,600 metric tons (7,300 U.S. short tons) of debris and soil were removed. The soil within the waste site footprint was excavated to a depth of 1 m (3 ft) below ground surface (bgs), and the resulting 3,000 bank cubic meters (4,000 bank cubic yards) of soil was disposed at ERDF. Observations during excavation supported the findings of the geophysical survey that indicated the 300-259 waste site contamination was limited to the surface, as the soil below the gravel added in 1991 appeared undisturbed

The COPCs for the waste site were identified based on the characterization of the contaminated items and soil found at the site, as well as the site location. Uranium was listed in the 300 Area Remedial Action Sampling and Analysis Plan (300 Area SAP) as the sole COPC; however, debris and areas of soil contamination had radiological survey readings for beta/gamma contamination as well, and the site's proximity to the 618-1 Burial Ground made it necessary to include additional analytes. Therefore, the COPCs for verification sampling included radionuclides (evaluated using laboratory analytical methods for gamma-, beta-, and alpha-emitting radionuclides), the expanded analyte list for the inductively coupled plasma metals, and mercury.

Verification sampling was performed on October 19, 2009 (logbook EL-1395-15), to support a determination that residual contaminant concentrations at this site meet the cleanup criteria specified in the RDR/RAWP and the ROD for the 300-FF-1 and 300-FF-5 Operable Units, (EPA 1996). The verification sample results were provided within the 95% upper confidence limit (UCL) calculation in Appendix B of the RSVP and indicated that the remedial action achieved compliance with the RAOs.

The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation (Appendix B of the RSVP).

Remedial actions were performed to support future industrial land use and to protect groundwater and the Columbia River. Further, the residual contaminant concentrations achieved do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). This site has no deep zone; therefore, no deep zone institutional controls are required.

Code: 300-260 **Classification:** Accepted

Names: 300-260; Contaminated Soil West of 313 Building **Reclassification:** No Action (1/13/2011)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of an area of formerly contaminated soil west of the former 313 Building. The site is no longer radiologically posted. Before reclassification it was surrounded by light posts and a yellow rope, no signs of any kind were present. A small amount of equipment and large wooden boxes are stored inside the roped area.

Location: The site is located inside the 300 Area, north of Ginko Street, north of 303-K and west of the 313 Building.

Closure Info: The sampling data collected in conjunction with excavation at the site, site evaluations, and supporting documentation demonstrate that this site meets the unrestricted (residential) remedial action objectives and goals established in the 300 Area RDR/RAWP (DOE-RL 2009b). Therefore, the 300-260 waste site is recommended for reclassification as a No Action waste site.

In 2001, the Interim Action Record of Decision for the 300-FF-2 Operable Unit, Washington (ROD) (EPA 2001) listed the COPCs for the site as uranium, lead, and barium. The ROD states, "Soil samples from the site exceeded regulatory levels for lead and barium" and "Radioactively contaminated black chunks (suspected to be oxidized uranium) were found in holes during upgrades of the electrical utilities in 1994". Samples taken during excavation of a concrete pad at the 300-260 waste site were collected on June 2 and June 3, 2010. The excavation removed a concrete pad for an electrical vault along with incidental soil. Approximately 1,278 metric tons (1,672 U.S. tons) of material was excavated and disposed of at the Environmental Restoration Disposal Facility.

Code: 300-262 **Classification:** Accepted

Names: 300-262; Contaminated Soil West of South Process Pond **Reclassification:** Closed Out (7/23/2003)

Type: Unplanned Release **Start Date:** 1/1/1943

Status: Inactive **End Date:** 1/1/1975

Description: The site has been remediated and closed out.

Location: The site is located west of the 316-1, South Process Pond, west of the railroad tracks, and approximately 61 meters east of 3713 Building.

Release Description: The contaminated soil was discovered on July 19, 1994 during excavation work to install a new utility pipeline. Excavated soils were contained in accordance with applicable established procedures. The contamination appears to have existed prior to the construction of the railroad spur that runs next to the 316-1, South Process Pond.

Related Sites/Structures: This site was associated with the South Pond (316-1); the Retired Filter Backwash Pond (300-RFBP) and unplanned release (UPR) sites UPR 300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37, and UPR-300-FF-1.

Waste Type: Soil

Waste Description: The waste is radioactively contaminated soil. The survey report indicates readings up to 15,000 disintegrations per minute (dpm) Beta/Gamma. The contamination is suspected to be scrapings from the 316-1, South Process Pond. Potential contaminants of concern may be the same as those for 316-1, including uranium-238 and cobalt-60. Other contaminants may be copper, chromium, ammonia, and polychlorinated biphenyls (PCBs).

Closure Info: 316-1, 300 RFBP, 300-262, UPR-300-32, UPR-300-33, UPR-300-34, UPR-300-35, UPR-300-36, UPR-300-37 and UPR-300-FF-1 were addressed as a group. The information below documents information for the group of sites.

The site has been remediated and closed out. Approximately 47, 600 square meters (512, 000 sq. ft) of soil was excavated, to a depth of approximately 18 feet below ground surface.

Code: 300-263 **Classification:** Accepted
Names: 300-263; 324 Building Diversion Tank **Reclassification:** None
Type: Catch Tank **Start Date:** 1/1/1969
Status: Inactive **End Date:** 1/1/1969

Description: This is an underground, 77,071-liter (20,360-gallon) cylindrical tank, approximately 36 feet long and 10 feet deep. The top of the tank is approximately 60 inches below ground surface.

Location: The tank is located in the 300 Area and east of 3718G Building.

Process Description: The site is an inactive catch tank. The tank was set up to hold contaminated process solutions that were too hot to send directly to the crib (316-3?) without additional treatment. After the tank was put on line, it was intended to be used as a diversion tank in the event of a radioactive release from the facility (324 Building).

Shortly after the tank was installed, the 340 Complex came on line. At that time, the piping system to the diversion tank in the 324 yard was bypassed and capped. Since that time, the 324 Building has transferred its waste to the 340 Complex. Drawing H-3-28455 shows the isolation of the system and has been visually verified at the caissons.

Related Sites/Structures: Originally, the tank was associated with the 324 Building. There are three supporting caissons (valving, pump and ion exchange).

Waste Type: Equipment

Waste Description: The waste is an inactive tank. Hazardous or radioactive waste was never transferred from the 324 Building to the tank. The tank is isolated and the pipelines are capped.

Sample results, Sample Id S8171-01, indicated cesium-137 to be 509 picocuries per liter (13.9% counting error). Gross Beta was 1,700 picocuries per liter (10% method error).

At the time the site was sampled, there was 15.2 centimeters (6 inches) of rainwater. The water is believed to have come from intrusion because many of the flange bolts were missing. The site is located in a low area where pooling of water can occur. The contamination is believed to be from surface contamination. This site lies in the middle of WIDS Site 316-3, 307 Disposal Trenches.

Code: 300-265 **Classification:** Accepted
Names: 300-265; Pipe Trench Between 324 and 325 Buildings **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:** 1/1/1971
Status: Inactive **End Date:**

Description: The site is a 5 centimeter (2 inch), underground encased stainless-steel waste transfer line encased within a 10 centimeter (4-inch) fiberglass-reinforced epoxy pipe. The pipeline has a downward slope of about 0.5% from the 325 Building to the 324 Building. Inside the pipeline

are two other stainless-steel Schedule 40 pipes, one is 3/8 inch and the other is 3/4 inch. The inner pipes were driven through the 5 centimeter (2 inch) pipe several years after the larger pipe was installed. The route of the pipeline is marked at the ground surface and is totally within the exclusion area to prevent accidental excavation. The depth of the pipeline ranges from 1 to 4 meters (3 to 12 feet) underground. The encasement surrounding the two smaller pipelines was used both for secondary containment and as a route for transfer of the process off-gas for discharge through the 324 Building stack. Before venting through the stack, it flowed into B Cell and was treated with the B Cell ventilation exhaust.

Location: The transfer line runs in an east-west direction, north of the 324, 308 and 325-A buildings, inside the 300 Area.

Process Description: This stainless steel transfer system allowed liquefied High Level Waste (HLW) to be pumped back and forth from the 324 and 325 Buildings for vitrification experiments for spent nuclear fuel waste.

Related Sites/ Structures: This pipeline connects the 324 and 325 Buildings.

Waste Type: Process Effluent

Waste Description: The transfer line carried liquid High Level Waste from spent nuclear fuel processing.

Code: 300-268

Classification: Accepted

Names: 300-268; 3741 Building Foundation; Box Storage Building Foundation; Special Machine Shop

Reclassification: Interim Closed Out

Type: Foundation

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1956

Description: The building has been removed. The building site is covered with gravel. There are no visual signs or markers to indicate where the building footprint had been located. The site cannot be precisely located without geophysical scans or excavation. The entire 300 Area is a posted Underground Radioactive Material area. There is no separate radiological posting for this site.

Location: The 3741 Building was east of where the 384 Power Plant and south of the 303-J buildings had been located.

Process Description: The building was used to store and prepare samples of irradiated graphite, flux wires, and uranium from the 305 Test Pile, in cardboard boxes. The word "box" in the name Box Storage Building was derived from these boxes. The building was also used as a Special Machine Shop. It contained lathes, drills, saws and other machinery for cutting and preparing metal samples for analysis.

Waste Type: Demolition and Inert Waste

Waste Description: The contamination related to this building were a result of passive dust from machining irradiated uranium, graphite, and other metallic samples from the 305 Test Pile. The contamination, if remaining, would be associated with any remaining concrete foundation.

Code: 300-269

Classification: Accepted

Names: 300-269; 331-A Virology Laboratory Foundation

Reclassification: None

Type: Foundation

Start Date: 1/1/1972

Status: Active **End Date:** 1/1/1995

Description: The site is a rectangular concrete building foundation. New air conditioner units are installed on the concrete foundation to support the adjacent 331 facility.

Location: The 331-A foundation is located adjacent to the northwest side of the existing 331 Building.

Process Description: The 331-A Building was a roughly T-shaped, one-story, concrete-block building with a sloped wood frame roof. The building was originally used for biological research to investigate radiation effects of animals. The purpose of the research was to investigate radiation damage to tissue from plutonium and fission products. Animals that were contaminated were held in other areas of the 331 complex until their feces showed no significant contamination. In the early 1980s, the facility was converted to a virology laboratory to study bacterial and viral growth in animals. Virology research continued until 1995.

Related Sites/ Structures: The 331-A Building was part of the original 331 Building complex.

Waste Type: Equipment

Waste Description: Residual contamination may be on the pad from past releases at the building.

Code: 300-270 **Classification:** Accepted

Names: 300-270; Unplanned Release at 313 Building **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/2000

Status: Inactive **End Date:** 1/1/2000

Description: The "unplanned release" reported by the Government Accountability Project and sampled by the Washington Departments of Ecology and Health. It was a milky-white flow of water that came out of a pipe located below the loading dock on the east side of the 313 Building. The dock is used by Richland Specialty Extrusions to store cylinders of metal (e.g., aluminum). The pipe drains stormwater from the roof of the 313 Building. The release was on to the surface of the ground, in an area of compacted gravel and soil. This area adjoins a paved parking lot.

Location: The "release" was on the east side of the 313 Building.

Process Description: The source of the stormwater was the roof of the 313 Building, but the reason for the discoloration was not determined. The liquid tested and found to be nonradioactive and nondangerous. The matter was not pursued further.

Related Sites/ Structures: The release of whitish stormwater came from a pipe under the loading dock on the east side of the 313 Building. The pipe drains the roof of the 313 Building, according to the e-mail summarizing the sampling activities.

Waste Type: Soil

Waste Description: The stormwater is nondangerous and nonradioactive. Soil collected from the area near the pipe showed elevated levels of lead. The contaminated soil was not caused by the milky-white liquid. The source of the lead contamination is unknown.

Code: 300-273 **Classification:** Accepted

Names: 300-273; 366 Bunker Pipeline; Fuel Oil Transfer Pipeline **Reclassification:** Interim Closed Out

Type: Product Piping **Start Date:** 1/1/1964

Status: Inactive **End Date:** 1/1/1998

Description: The site is an encased underground pipeline. The encased pipeline contains two 7.6 centimeter (3 inch diameter) stainless steel lines. It is not visually marked on the surface.

Location: The pipeline is located northeast of the 384 Powerhouse, between the 366 Bunker site and the day tanks.

Process Description: The underground pipeline transferred fuel oil from the 366 Fuel Oil Bunkers (300-6) to the underground Fuel Oil Day Tanks (300-223) to run the 384 Powerhouse. The system operated between 1964 and 1998.

Related Sites/Structures: The encased pipeline contains two 7.6 centimeter (3 inch diameter) stainless steel lines. It is associated with WIDS sites 300-6 and 300-223.

Code: 300-274 **Classification:** Accepted

Names: 300-274; Surface Debris **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: A field walkdown of the 300-FF-1 Operable Unit was done in July and December of 2004 to identify remaining debris, hazards and potential new waste sites. Miscellaneous surface debris found consisted mostly of transite, wood, asphalt, metal and broken glass.

Location: The 300-FF-1 Operable Unit boundary extends north of the northeast corner of 300 Area to south of the Treated Effluent Disposal Facility (TEDF). It is bounded on the east by the Columbia River. The western edge is irregularly shaped. The majority of the debris was located in the southern portion of the 300-FF-1 Operable Unit, south of the filter backwash ponds.

Process Description: Various forms and sizes of potentially hazardous or dangerous surface debris waste was created during 300 Area construction and operation and during decommissioning and remedial action activities.

Waste Type: Asbestos (non-friable)

Waste Description: Transite pipe, treated wood, insulation and various forms of transite were identified during the Operable Unit walkdown. The debris was determine to be Potential Asbestos Containing Material (PACM).

Code: 300-275 **Classification:** Accepted

Names: 300-275; Potential Landfill on River Edge **Reclassification:** Interim Closed Out (8/13/2009)

Type: Sanitary Landfill **Start Date:**

Status: Inactive **End Date:**

Description: Before remediation the site consisted of seven areas of debris in two regions, a northern and southern one. There were three surface debris areas and four subsurface debris areas.

Location: There were two separate regions of debris. The northern region was approximately 40 meters (131 feet) west of the Columbia River shoreline and 140-meters (459-feet) north of the remediated 300-49, Landfill 1a site. The southern region with one surface debris area and two subsurface areas was located 9 meters (29.5 feet) northeast of 300-49.

Waste Type: Misc. Trash and Debris

Waste**Description:**

The two surface debris areas in the northern region contain sparsely scattered surface debris, including small fragments of potential asbestos containing shingles and concrete. Other sparse, but visible debris includes rusted cans, metal fragments of unknown origin, pieces of insulated electrical cable, and a few pieces of broken glass. The underground debris is of unknown type.

The surface debris area in the southern region includes small fragments of potential asbestos containing shingles, metal fragments, a few small pieces of concrete debris, glass fragments, and porcelain jar fragments. There is also a small segment of stainless steel pipe and a broken graduated cylinder, both likely related to the Hanford laboratory work in the 300 Area. The underground debris is of unknown type. (Logbook EL-1583-5, pp.20-21)

Closure Info:

In accordance with this evaluation, the verification sampling results support a reclassification of the site to Interim Closed Out. The Remaining Sites Verification Package (RSVP-2008-059) has documented that the current site conditions achieve the remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) and in the 300-FF-2 Interim Action ROD.

The selected remedy for the site was removal and disposal of surface and subsurface solid debris items that may contain hazardous/dangerous constituents. Surface debris identified at both the northern and southern regions of the site included small fragments of potentially asbestos-containing shingles (transite), metal fragments, concrete pieces, porcelain jar fragments, rusted cans, metal fragments, insulated electrical cable, broken glass, pieces of copper tubing, a broken graduated cylinder, and other trash.

Based on the location and overall composition of the debris in both regions, the entire site was believed to be related to Hanford Site laboratory work in the 300 Area. Handpicking and removal of surface debris from both the northern and southern regions was completed prior to excavation activities. Subsurface debris was excavated and removed from both regions of the site between July 25, 2007, and August 9, 2007. A total of 1,148 bank cubic meters (1,502 bank cubic yards) of material were excavated from the overall site, resulting in approximately 2,754 metric tons (3,036 tons) of material disposed at the Environmental Restoration Disposal Facility (ERDF).

The soil directly below items of surface debris was visually evaluated during removal of the debris. If staining or other evidence of a release of contaminants (e.g., impacted vegetation) to the underlying soil had been observed, the impacted soil would have been removed and verification soil samples collected. None of the soil underlying surface debris collected exhibited evidence of a release of contaminants such as staining or impacted soil.

Because the 300-275 waste site overlapped the pre-excavation boundary of the 300-49 waste site and was assumed to have a similar process history, the entire Contaminants of Potential Concern (COPC) list for the 300-49 waste site as specified in the RDR/RAWP was applied to the site. The COPCs included: cobalt-60, uranium-234, uranium-235, uranium-238, arsenic, lead, thallium, polychlorinated biphenyls (PCBs), benzo(a)pyrene, and chrysene. While not COPCs, antimony, barium, beryllium, boron, cadmium, total chromium, cobalt, copper, manganese, mercury, molybdenum, nickel, selenium, silver, vanadium, and zinc concentrations were also evaluated by performing the expanded inductively coupled plasma metals analytical list. Additional COPCs were identified based on process knowledge and observations made during excavation and remediation. Radiological detections during excavation led to the addition of gross alpha, and gross beta activity. Transite and other suspected asbestos containing materials were identified.

Verification sampling within the excavation areas was conducted on November 20, 2008 (WCH

Logbook EL-1395-14). An evaluation of the resulting data found that the waste removal action achieved compliance with the rural-residential scenario RAOs for the site. A summary of the cleanup evaluation for the soil results against the applicable criteria was presented in Table ES-1 of the RSVP. The results of the verification sampling were used to make reclassification decisions for the site in accordance with the Tri-Party Agreement Handbook Management Procedures, TPA-MP-14 procedure. The laboratory-reported verification data results for all constituents were stored in the WCH Environmental Restoration project-specific database prior to archival in the Hanford Environmental Information System and were presented as Attachment 1 of the 95% UCL calculation in Appendix A of the RSVP.

The results of verification sampling were protective of groundwater and the Columbia River and show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep).

Code:	300-276	Classification:	Accepted
Names:	300-276; 3607 Sanitary Sewer System; 3607 Sanitary System Miscellaneous Components; 3707; 300 Area Sanitary Sewer Disposal System	Reclassification:	Interim Closed Out (12/8/2011)
Type:	Sanitary Sewer	Start Date:	1/1/1943
Status:	Inactive	End Date:	1/1/1996
Description:	The site consisted of the components of the original septic system, which processed sanitary effluent from the 300 Area Sanitary Sewer System (300 SSS) piping. The site includes the surface and subsurface sewer system components of manhole SS6, the influent diversion box, the effluent diversion box, the sludge pumping equipment, the sludge pit, the system's original septic tank, the system's original tile field, a retention basin and the measuring weir/diversion trenches.		
Location:	The components of 300-276 are located in the northeast section of 300 Area, east of the 333 building.		
Release Description:	WHC-MR-088 states the Sanitary Sewer System may have received undocumented contamination via cross contamination from other waste systems and from connections to change houses, lunchrooms, restrooms and First Aide stations populated by contaminated workers. A 1948 Health Instrument division report stated significant increases of uranium were found in the 300 Area sanitary water due to seepage from the process waste ponds. A 1991 radiological survey of the septic tank sludge pump displayed readings of 25,000 counts per minute.		
Process Description:	The original, gravity flow 300 Area Sanitary Sewer System operated from 1944 through 1996. In 1996, the ground disposal portion of the system was replaced with a pressurized system and routed to the City of Richland sewer system. This WIDS site is the pre-1996 sewer system, downstream of Manhole SS6.		
	The original sanitary sewer system (1943) consisted of one septic tank that received effluent via manhole SS6 and a tile field. In 1951, two more septic tanks, two diversion boxes, and a sludge pit and pumping system were added. The tile field was replaced by two large leaching trenches. (WIDS site 300-52 represents the two 1951 septic tanks and two leaching trenches) More improvements were made in 1960. A chlorination station was added in 1972.		
Related Sites/ Structures:	This site is associated with 300-52 and 300 SSS.		

Waste Type: Equipment
Waste Description: The equipment (diversion boxes, pumps, tanks) associated with the Sanitary Sewer System is potentially chemically and radioactively contaminated. WHC-MR-0388 states that a 1991 radiation survey of the septic tank sludge pump and pipes had readings of 25,000 counts per minute.

Waste Type: Sanitary Sewage
Waste Description: The Sanitary Sewer System is potentially contains radioactive and chemical contaminants.

Closure Info: The demolition of the three septic tanks, associated equipment, and the liquid chlorine bottle storage facility foundation, as well as loadout of demolished debris and soil, began on November 8, 2010, and was completed February 3, 2011. Debris from the demolition and excavation of the septic system included concrete, rebar, piping, valves, sand (used for tank fills), and residual sludge.

Excavation at the 300-276 waste site resulted in a total of approximately 2,228 bank cubic meters (2,914 bank cubic yards) of contaminated soil and debris. All material was direct loaded for disposal at the Environmental Restoration Disposal Facility (ERDF). A post-excavation radiological survey for gamma activity was conducted following the completion of remedial action to confirm that no radiological contamination was present. No elevated gamma activity was detected.

Code:	303-M SA	Classification:	Accepted
Names:	303-M SA; 303-M Storage Area; 303-M Building Storage Area	Reclassification:	Interim Closed Out (6/29/2010)
Type:	Storage	Start Date:	1/1/1983
Status:	Inactive	End Date:	1/1/1987

Description: The 303-M-Storage Area was an inactive, curbed, concrete pad adjacent to the west side of the 303-M Uranium Oxide Facility (UOF). The concrete surface was painted with a heavy gray paint as a fixative. Several "fixed radioactive contamination" signs were on the surface. The area was used for storage of pyrophoric uranium and Zircaloy-2 chips and fines awaiting treatment in the 303-M UOF. The metal turnings were stored underwater in 114-L (30-gal) metal drums. The drums of fines were stored in a spaced array defined by painted yellow circles on the pad.

Location: The unit is 21 feet (6.4 meters) east of the 333-N Building and enclosed within a 6-inch high concrete curb adjacent to the west wall of the 303-M Uranium Oxide Facility.

Process Description: The storage area was used to store drums of uranium and zircaloy-2 chips and fines, prior to oxidation in the 303-M Uranium Oxide Facility. Lift trucks with barrel clamps were used to transport the drums of uranium metal turnings from the 333-N Fuels Fabrication Building to a designated storage spot (a solid yellow circle painted on) the storage pad. Water levels in the drums were maintained within six inches of the top of the drum, well above the level of the fines in the drum. Barrel clamps were used to pick up a drum and take it into the 303-M Uranium Oxide Facility for processing.

Related Sites/Structures: Structures associated with this unit include the 333-N Building, the 303-M Building, the remnants of the 303-L Building, and the 618-1 Burial Ground.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The area was used for storage of pyrophoric uranium and zirconium fines awaiting treatment in the 303-M Oxidation Facility. The metal turnings were stored under water in 30 gallon metal

drums. The drums of uranium fines were stored in a spaced array defined by painted yellow circles on the pad. An estimated 127 tons (115,300 kilograms) of uranium were treated during the 303-M Facilities operation from 1983 to 1987.

Closure Info: 618-1, 618-1:1, 618-1:2, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA were addressed as a group. The information below documents information for the group of sites.

The 618-1 Burial Ground, two subsites, three consolidated sites and four co-located sites were remediated as a group. This group included WIDS sitecodes 618-1, 618-1:1, 618-1:2, 333 LHWSA, UPR-300-13, UPR-300-14, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA. Parts of waste sites 300-15, 300-259 and UPR-300-17 were also remediated along with 618-1. Several facilities were built over the top of portions of the 618-1 Burial Ground after it ceased to operate. These facilities were demolished and their debris taken to the Environmental Restoration Disposal Facility (ERDF) prior to the start of the burial ground remediation project.

Cleanup Verification Package CVP-2010-00001 demonstrates that remedial action at the site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established for the industrial land-use scenario in the Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the RDR/RAWP(DOE-RL-2001-47, Rev 3).

Field remediation activities were performed between September 17, 2008 and September 10, 2009, in accordance with the RDR/RAWP. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at Environmental Restoration Disposal Facility (ERDF). No excavated soil was used as clean, uncontaminated backfill.

Excavated material consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, and empty metal containers. Twenty metal drums containing personal protective equipment were removed from the trenches. Several bottles containing liquid and/or powder were also removed.

Some land disposal restricted (LDR) materials like lead solids contaminated with barium and chromium, were identified among the debris. The LDR material was segregated from the bulk soil and non-LDR debris for disposal. The bulk soil and non-LDR debris was sorted and segregated in the burial trenches. After sorting, the remaining bulk soil debris stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions. The released stockpiled material was transported to ERDF for disposal. Land disposal restricted materials that had been segregated for treatment were transported to ERDF under a separate waste profile.

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Contaminants of Potential Concern for the statistical samples included cesium-137, uranium-233/234, uranium-235, uranium-238, barium, beryllium, chromium (total), copper, lead, lithium, mercury, molybdenum, nickel, silver, uranium (total metal), zinc, PCBs, chloride, fluoride, nitrate, nitrite, and sulfate. Arsenic, antimony, boron, cadmium, cobalt, manganese, selenium, and vanadium were evaluated for the expanded inductively coupled plasma metals analytical list.

The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone.

Code: 303-M UOF

Classification: Accepted

Names: 303-M UOF; 303-M Uranium Oxide Facility **Reclassification:** Interim Closed Out (6/29/2010)
Type: Process Unit/Plant **Start Date:** 1/1/1983
Status: Inactive **End Date:**

Description: The site was a reinforced concrete structure containing a highbay area and a one-story extension on the north side of the building (Figures 7, 8, and 9). The 303-M SA is located on the west side of the building. The building was used to oxidize pyrophoric uranium metal turnings and chips and Zircaloy-2 fines generated during fuel fabrication machining operations in the 333 Building. During the 4 years that it was operational (1983 to 1987), the 303-M UOF converted 115 metric tons of uranium scrap into oxide form. The 303-M Building was demolished in March 2006, and the debris was shipped to the ERDF as described in Facility Status Change Form D4-300-008

Location: The unit is located in the north central 300 Area, east of the 333 Building.

Process Description: The facility was used to oxidize pyrophoric uranium metal turnings and chips and zircalloy-2 fines generated during fuel fabrication machining operations in the 333 Building. The metal turnings were received in 30 gallon drums filled with water for fire prevention. The metal turnings were removed, screened, hand fed into a shredder/chopper, and small bags of metallic fines were placed inside a burner chamber for oxidation.

Related Sites/ Structures: Structures related to the 303-M Building include the 303-M Storage Area (WIDS Site Code 303-M SA), the 333 Building, the 618-1 Burial Ground, and the remnants of the 303-L Building.

Waste Type: Chemicals

Waste Description: The oxidation process feed material was pyrophoric uranium and zircalloy-2 fines. Approximately 127 tons (115,300 kilograms) of material was oxidized during operations. Waste currently at the facility may include residual radiological and chemical contamination in the process equipment, on surfaces, and in the process sewer.

Closure Info: 618-1, 618-1:1, 618-1:2, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA were addressed as a group. The information below documents information for the group of sites.

The 618-1 Burial Ground, two subsites, three consolidated sites and four co-located sites were remediated as a group. This group included WIDS sitecodes 618-1, 618-1:1, 618-1:2, 333 LHWSA, UPR-300-13, UPR-300-14, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA. Parts of waste sites 300-15, 300-259 and UPR-300-17 were also remediated along with 618-1. Several facilities were built over the top of portions of the 618-1 Burial Ground after it ceased to operate. These facilities were demolished and their debris taken to the Environmental Restoration Disposal Facility (ERDF) prior to the start of the burial ground remediation project.

Cleanup Verification Package CVP-2010-00001 demonstrates that remedial action at the site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established for the industrial land-use scenario in the Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the RDR/RAWP(DOE-RL-2001-47, Rev 3).

Field remediation activities were performed between September 17, 2008 and September 10, 2009, in accordance with the RDR/RAWP. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at Environmental Restoration Disposal Facility (ERDF). No excavated soil was used as clean, uncontaminated backfill.

Excavated material consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, and empty metal containers. Twenty metal drums containing personal protective equipment were removed from the trenches. Several bottles containing liquid and/or powder

were also removed.

Some land disposal restricted (LDR) materials like lead solids contaminated with barium and chromium, were identified among the debris. The LDR material was segregated from the bulk soil and non-LDR debris for disposal. The bulk soil and non-LDR debris was sorted and segregated in the burial trenches. After sorting, the remaining bulk soil debris stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions. The released stockpiled material was transported to ERDF for disposal. Land disposal restricted materials that had been segregated for treatment were transported to ERDF under a separate waste profile.

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Contaminants of Potential Concern for the statistical samples included cesium-137, uranium-233/234, uranium-235, uranium-238, barium, beryllium, chromium (total), copper, lead, lithium, mercury, molybdenum, nickel, silver, uranium (total metal), zinc, PCBs, chloride, fluoride, nitrate, nitrite, and sulfate. Arsenic, antimony, boron, cadmium, cobalt, manganese, selenium, and vanadium were evaluated for the expanded inductively coupled plasma metals analytical list.

The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone.

Code:	311 MT1	Classification:	Accepted
Names:	311 MT1; 311 Tank Farm Underground Methanol Tank #1; 311-1; 311 Methanol Tank 1	Reclassification:	Closed Out (2/12/1999)
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The former site has been backfilled and is covered with gravel. Prior to removal, the site consisted of a horizontal, flat-ended cylindrical tank.		
Location:	The site is northwest of 303-G and northeast of 303-F.		
Process Description:	The unit is no longer active and has been removed. While in service the unit stored pure methanol used as a final rinse to remove water from aluminum end caps and cans in the "triple dip" and "lead dip" fuel fabrication processes.		
Related Sites/Structures:	Structures associated with the tank include the other 311 Methanol Tank (WIDS Site 311 MT2), the 313 Methanol Tank (WIDS Site 313 MT), transfer piping, and the 313 Building. WIDS Site 300-40 (Corrosion of Vitrified Clay Sewer Pipe) is located to the west of the site.		
Waste Type:	Chemicals		
Waste Description:	The unit contained an aqueous solution of methanol. Methanol was used as a drying agent for the aluminum cleaning process. The methanol was pumped from the tank in 1971. The tank was removed in 1989.		
Closure Info:	The tank was removed August 30, 1989. This tank and two others (WIDS Sites 311 MT2 and 313 MT) were taken to the Nonradioactive Dangerous Waste Landfill (WIDS Site NRDWL) for storage.		

The tank impressions from all three tanks were surveyed with a photo ionization organic vapor detector (HNU Model P1-101). There were no readings. Narrow holes were bored into the

sand at suspicious locations. There were no readings. There was no stained soil. Samples (random) were collected at four locations around the tank. The excavation was backfilled on the completion of the tank removal.

Review of the results of soil tests from 311 MT1, 311 MT2, and 313 MT indicates that none of the tanks have leaked.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code:	311 MT2	Classification:	Accepted
Names:	311 MT2; 311 Tank Farm Underground Methanol Tank #2; 311-2; 311 Methanol Tank 2	Reclassification:	Closed Out (2/12/1999)
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The former site has been backfilled and is covered with gravel. Prior to removal, the site consisted of a horizontal, flat-ended cylindrical tank.		
Location:	The unit is located northwest of 303-G and northeast of 303-F.		
Process Description:	The unit is no longer active and has been removed. While in service the unit stored used methanol solution generated in the 313 fuel fabrication/final rinse processes, until the solution was de-watered in the still. The de-watered methanol was then added to the 311 Methanol Tank (WIDS Site 311 MT1).		
Related Sites/ Structures:	Structures associated with the tank include the other 311 Methanol Tank (WIDS Site 311 MT1), the 313 Methanol Tank (WIDS Site 313 MT), transfer piping, and the 313 Building. WIDS Site 300-40 (Corrosion of Vitrified Clay Sewer Pipe) is located to the west of the site.		
Waste Type:	Chemicals		
Waste Description:	The unit contained an aqueous solution of methanol. Methanol was used as a drying agent for the aluminum cleaning process. The methanol was removed from the tank in 1971. The tank was removed in 1989.		
Closure Info:	The tank was removed August 30, 1989. This tank and two others (WIDS Sites 311 MT1 and 313 MT) were taken to the Nonradioactive Dangerous Waste Landfill (WIDS Site NRDWL) for storage.		

The tank impressions from all three tanks were surveyed with a photo ionization organic vapor detector (HNU Model P1-101). There were no readings. Narrow holes were bored into the sand at suspicious locations. There were no readings. There was no stained soil. Samples (random) were collected at four locations around the tank. The excavation was backfilled on the completion of the tank removal.

Review of the results of soil tests from 311 MT1, 311 MT2, and 313 MT indicates that none of the tanks have leaked.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code: 313 ESSP **Classification:** Accepted

Names: 313 ESSP; 313 Building East Site Storage Pad; 313 East Side Storage Pad **Reclassification:** None

Type: Storage **Start Date:**

Status: Inactive **End Date:**

Description: The 313 East Side Storage Pad is a large concrete pad with an asphalt ramp that connects the pad to Ginko street. No wastes of any kind are currently stored at the site. The Waste Acid Treatment System pipe trench (WIDS Site 300-224) passes east-west through the site and is posted as internally contaminated with radioactive material. Two areas of the pad, located adjacent to the east wall near the southern end of the 313 building have been painted gray. Signs are placed at the base of the walls, just above the painted areas that read "Fixed Contamination - Contamination Under Grey Paint on Ground".

Location: The unit is adjacent to the south eastern side of the 313 Building. The unit extends from the 313 Building to approximately 15 meters (50 feet) from the railroad tracks east of the 313 Building and south to the north side of Ginko Street.

Process Description: Previously the site staged radiological waste from 313 Building operations and, during fuel fabrication operations, staged mixed waste from the 313 Centrifuge and uranium waste from the 313 Filter Press. The unit was also used to stage raw materials received by rail cars.

Related Sites/ Structures: Structures associated with the unit include the 313 Buildings, the 303 Buildings, the Waste Acid Treatment System pipe trench (WIDS Site 300-224), and the railroad tracks along the east side of the pad.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The area was used to stage mixed waste including byproduct waste materials from the fuels fabrication process and neutralized solids from the 313 Recovery Operations process.

Code: 313 MT **Classification:** Accepted

Names: 313 MT; 313 Building Underground Methanol Storage Tank; 313 Methanol Tank **Reclassification:** Closed Out (2/12/1999)

Type: Storage Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1971

Description: The 313 Methanol Tank was removed in 1989. The excavation was backfilled and the floor was patched with concrete. Prior to removal the site consisted of a steel cylindrical tank lying horizontally. The tank was below the floor of the 313 Building.

Location: The tank was located below the floor in the southeast portion of the 313 Building.

Release: No releases have been identified.

Release**Description:**

Process Description: Prior to removal, the tank was used as an emergency dump tank. In case of a fire in the 313 Building, the methanol from the dehydration tanks could be released to the underground tank. The tank was never used for an emergency dump.

Related Sites/ Structures: Structures associated with the tank include the 311 Methanol Tank 1 (WIDS Site 311 MT1), the 311 Methanol Tank 2 (WIDS Site 311 MT2), transfer piping, and the 313 Building.

Waste Type: Chemicals

Waste Description: From 1971 to 1987 the tank contained an aqueous methanol solution. The tank was removed in 1989. The tank never received an emergency methanol dump.

Closure Info: The tank was removed August 30, 1989. This tank and two others (WIDS Sites 311 MT2 and 311 MT2) were taken to the Nonradioactive Dangerous Waste Landfill (WIDS Site NRDWL) for storage.

The tank impressions from all three tanks were surveyed with a photo ionization organic vapor detector (HNU Model P1-101). There were no readings. Narrow holes were bored into the sand at suspicious locations. There were no readings. There was no stained soil. Samples (random) were collected at four locations around the tank. The excavation was backfilled on the completion of the tank removal.

Review of the results of soil tests from 311 MT1, 311 MT2, and 313 MT indicates that none of the tanks have leaked.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code: 316-3	Classification: Accepted
Names: 316-3; Process Water Trenches; 307 Disposal Trenches	Reclassification: None
Type: Trench	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1963

Description: The trenches were backfilled in 1965 and are no longer visible. A large portion of the location has been paved and fenced. The site consisted of two trenches, each 180 meters (600 feet) long, 9.1 meters (30 feet) wide at the east end, tapering to 3.0 meters (10 feet) wide at the west end. The depth varied from 3.7 meters (12 feet) to 8.2 meters (27 feet). The trenches ran in an east and west direction, approximately 6.1 meters (20 feet) apart. Each contained a 13 centimeter (5 inch) vitrified clay pipe that ran the entire length of the unit.

Location: The trenches were located east of 300 Area, southeast of the 340 Facility.

Process Description: From 1953 to 1963, effluent below discharge limits was released from the 307 Retention Basins and discharged to these trenches. Effluent above discharge limits was transported to the 200 Area for disposal.

Related Sites/ Structures: The trenches are associated with the 340 Complex. Facilities that discharged to the 307 trenches via the retention basins, included 324, 325, 326, 327, 329, and the 308 buildings.

Waste Type: Process Effluent

Waste Description: The site received wastes from the 300 Area Laboratory expansion facilities (329 Biophysics Laboratory, 327 Radiometallurgy Building, 324 Radiochemistry Building, 326 Pile Technology Building, and 329 Mechanical Development Building). The wastes first went through the 307 Retention Basin. Retention Basin waste below discharge limits was released to the trenches from 1953 to 1963. The trenches were excavated in 1963, and the contaminated soil was taken to 300 North (618-10) Burial Ground. The trenches were backfilled with process pond scrapings and fly ash in 1965.

In 1987 the west end of the 316-3 (near the 3727 building) was used to test a grout liquid waste solidification process. A 6.1 meter by 6.1 meter by 3.0 meter (20 foot by 20 foot by 9 foot) deep section of the trenches was excavated, and contaminated material (probably backfill from the south process pond) was encountered. Activities measured were as high as 378 picocuries per gram beta and 234 picocuries per gram alpha.

Code: 316-4 **Classification:** Accepted

Names: 316-4; 316-N-1; 321 Cribs; 616-4; 300 North Cribs **Reclassification:** None

Type: Crib **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1956

Description: The crib structures were removed in 2004. The crib consisted of two bottomless tanks, buried 3 meters (10 feet) below grade, resting on gravel strata. A waste influent line extended from 0.6 meters (2 feet) above the bottom of one of the tanks and continued, at an angle, to grade level. A vent riser extended from the top of the tank to 2.4 meters (8 feet) above grade. The tanks were 0.6 meters (2 feet) apart, with a stainless steel overflow pipe connecting them just below the top of each tank. (see H-3-5305) The area was marked with AC-540 markers marked "Crib 316-4". A 1995 Geophysical Investigation survey concurs the tanks had concrete footings and sat on a bed of gravel. It also states the tanks are believed to be 8 ft in diameter, 7 ft tall, with the tops of the tanks being located approximately 10 ft below the surface.

The crib excavation was backfilled in 2005 with 4221 meters of clean dirt.

Location: The site is located northwest of the 300 Area, approximately 45 meters (150 feet) southeast of the 618-10 (300 North) Burial Ground .

Release Description: A cumulative total of 895 kgs (1974 pounds) of uranium was discharged into the cribs as U-bearing organic wastes from the 321 Building from 1948 through June 23, 1954

Process Description: The site received hexone-bearing uranium wastes and limited amounts of other uranium-bearing wastes from the 321 Building. Calculations up to and including July 1955 indicated liquid wastes containing a total of 550 kg (1,230 lbs) of uranium had been discharged to this site. Additional documentation has been found indicating 12,040 L (3,182 gal) of liquid organic waste was being shipped to the 300 North Cribs in 1962.

Related Sites/ Structures: The cribs are constructed with a 3-inch SCH 40 vent riser, a stainless Steel inlet pipe, 5.5 meters (18 ft long); Two Stainless Steel tank covers, and a concrete support foundation surrounding the outside bottom of the tanks. An overflow line, connects the two tanks.

Waste Type: Process Effluent

Waste Description: wastes from the 321 Building. Calculations up to and including July 1955 indicated liquid wastes containing a total of 550 kilograms (1,230 pounds) of uranium had been discharged to this site. Additional documentation has been found indicating 12,040 liters (3,182 gallons) of liquid organic waste was being shipped to the 300 North Cribs in 1962.

Code: 331 LSLDF **Classification:** Accepted
Names: 331 LSLDF; 331 Life Sciences Laboratory Drainfield; 331 LSL Drain Field **Reclassification:** No Action (10/16/2008)
Type: Drain/Tile Field **Start Date:** 1/1/1970
Status: Inactive **End Date:** 1/1/1974

Description: The 331 LSLDF waste site is a septic system consisting of a diversion chamber, two (dual-chambered) septic tanks, a distribution box, and a drain field connected to the 331 complex. The 331 LSLDF septic system was operational from 1970 to 1974, at which time the sanitary sewer connections were rerouted to the 300 Area Sanitary Sewer. The 331 LSLDF septic system was fully isolated and abandoned in place in 1974. The waste line has been capped west of the septic tanks. The drainfield is marked with a single sign at the site center.

Location: The unit is located southeast of the 331 Building.

Process Description: The septic system was designed to receive sanitary wastewater associated with animal studies from the 331-A and 331-B Buildings for discharge into the soil column. However, field observations and testing suggest this system did not receive any discharges. It is probable that all of the animal study discharges were routed to the 331 Life Sciences Laboratory Trenches 1 and 2 (331 LSLT1 and 331 LSLT2), the 331 LSLT1 Animal Waste Pit, the 300 Area Sanitary Sewer, or transported to the 100 Area. The animal studies involved the use of radioisotopes, and the animal waste was segregated on the basis of radiological activity. Solid animal waste exceeding 200 pCi/g specific activity was transported to the 100 F Area trenches. Other solid animal waste (less than 200 pCi/g specific activity) was allowed to flush into the 331 waste system(s). The 331 Building, located in the Hanford Site's 300 Area, was constructed in 1970. The largest portion is a three story facility, consisting of laboratories on the first and third floors. The first floor laboratory area initially contained a multi-room, inhalation toxicology, and exposure suite. The third floor laboratories included small animal facilities, and related animal physiology and inhalation toxicology laboratories, low-level and high-level radiochemistry laboratories, as well as tissue culture, virology, histology, hematology, biochemistry, histochemistry, pathology, and microbial physiology laboratories. Two smaller ancillary structures, 331-A and 331-B, made up another segment of the 331 Building. The 331-A Building is detached and located on the northwest side of the 331 Building and contained 15 pen areas for large animals (e.g., swine). The 331-B Building, connected to the west and southwest portion of the 331 Building, is a one-story concrete block structure with long, narrow, animal runs. The run area originally contained 110 concrete living units for dogs. The north section was comprised of an animal clinic, hospital, food preparation room, and change room. An equipment room and a metabolism room were located at the south end of the animal runs. The dog runs were built as a wing adjacent to 331-B. It also contained dog habitat areas. A semi-high bay building, 331-D, was erected southeast of the 331 Building in 1974. The 331-D Building was to serve as an Animal Waste Treatment Facility. It contained a 94,625 liters per day (25,000 gallons per day) capacity waste treatment plant, which was designed to chemically treat, mechanically flocculate, settle, and gravity filter animal wastes. A sludge dryer also was installed to heat and dry 54.4 kilograms per hour (120 pounds per hour) of sewage sludge product from the treatment facility.

Related Sites/ Structures: The drainfield is associated with the 331 Life Sciences Laboratory.

Waste Type: Animal Waste

Waste Description: The unit may have received animal waste from the 331 Buildings prior to construction of the 331-D Treatment Facility. Since most of the animal studies involved the use of radio isotopes, animal waste was segregated on the bases of activity. Solid animal waste, exceeding 200 picocuries per gram specific activity, was transported to the 100-F Area trenches on a regular basis. All other solid animal waste (less than 200 picocuries per gram specific activity) was allowed to flush into the 331 waste system. However, specific cases of contamination have occurred at the 331 complex. In January 1975, between 25 and 2,500 microcuries of plutonium-238 from contaminated soil used in a botanical experiment was washed into the process sewer. This material may have ended up in the 331 Life Science Laboratory Drainfield (LSLDF).

The constituents of concern listed below reflects those which could potentially still be present in the subsurface at the 331 Building WIDS sites. During the course of identifying the constituents of concern no evidence of any waste containing PCBs was discovered during a records review. A walkthrough of the facility did not reveal the presence of any PCB containing equipment with the exception of possible PCB laden light ballast. All transformers were of the dry design. Therefore, PCBs are not listed among the constituents of concern. These contaminants are americium-241, curium-244, neptunium-237, plutonium-238, plutonium-239, uranium-232, uranium-233, cadmium, chromium, lead, uranium (total).

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary wastewater from the 331-A and 331-B Buildings for discharge into the soil column.

Closure Info: In accordance with the Remaining Sites Verification Package (RSVP-2008-020), the confirmatory sampling results support a reclassification of the 331 Life Sciences Laboratory Drain Field (LSLDF) waste site to "No Action" based on attainment of industrial land use remedial action objectives (RAOs) and the corresponding remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, (ROD), and the 300 Area Remedial Action Sampling and Analysis Plan (SAP).

This septic system was designed to receive sanitary wastewater associated with animal studies from the 331-A and 331-B Buildings for discharge into the soil column. However, field observations and testing suggest this system did not receive any discharges. Similar to the septic tanks, all of the drain field laterals were found to be clean, almost new in appearance. Sediments within the laterals were only sparingly available, and the little that could be collected (from the fifth and sixth laterals in the northern trench and the sixth lateral in the southern trench) had to be combined to achieve a sufficient sample size for fixed laboratory analysis.

During the RSVP evaluation field radiological surveys were performed to evaluate the presence of radioisotopes from the animal studies. No radiological activity was detected in the field or in the samples analyzed at the laboratories. The sample results do indicate detections for 29 COPCs. It is probable that all of the animal study discharges were routed to the 331 Life Sciences Laboratory Trenches 1 and 2 (331 LSLT1 and 331 LSLT2), the 331 LSLT1 Animal Waste Pit, the 300 Area Sanitary Sewer, or transported to the 100 Area

The Work Instruction for Confirmatory Sampling of the 331 Life Sciences Laboratory Drain Field (LSLDF) was developed to determine if contamination was present in the drain field. Confirmatory sampling of the drain field and of the soil around the distribution box was performed in April 2007. Similar to the septic tanks, all of the drain field laterals were found to be unexpectedly clean, and almost new in appearance. Sediments within the laterals were only sparingly available, and the little that could be collected from each lateral was combined to achieve a sufficient sample size for fixed laboratory analysis.

The COPCs for the site were identified based on existing historical information for the site. The

COPC list provided in the 300-FF-2 ROD includes americium-241, curium-244, neptunium-237, plutonium-238, plutonium-239, uranium-232, uranium-233, cadmium, chromium, lead, and total uranium. Historical information for the Hanford Site shows that there are no likely sources of the uranium-232 isotope; therefore, uranium-232 was eliminated as a COPC. Based on further evaluation of wastes potentially discharged to the septic system, pesticides, PCBs, mercury, inorganic anions (including nitrate and nitrite), semivolatile organic compounds, and gamma-emitting radionuclides were added as COPCs.

Because inductively coupled plasma (ICP) analysis was planned for cadmium, chromium, and lead, the expanded list of ICP metals was also added to the analytical list in the analytical results data package. These additional COPCs include arsenic, antimony, barium, beryllium, boron, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc.

Confirmatory sampling results were also compared to the unrestricted (residential) land use RAGs, which determined that in addition to the previously mentioned 19 COPCs exceeding soil RAGs for groundwater and/or river protection aroclor-1254 and dieldren concentrations exceed the unrestricted direct exposure RAGs. However, the overall volume of material within the 331 LSLDF containing these constituents was determined to be minimal. Aroclor-1254 is likely the result of oils or mastics used to seal various components of the septic system during construction of the septic system. Therefore, it may be appropriate to consider the waste site for residential (unrestricted) land use; this should be considered as part of the final remedial investigation/feasibility study and land use determinations for the 300 Area.

The analytical data results were shown to meet the cleanup objectives for industrial direct exposure, groundwater protection, and river protection as required in the ROD and the SAP. Accordingly, a reclassification to No Action is supported for the waste site. This site does not have a deep zone or any conditions that would warrant institutional controls for industrial land use.

Code:	331 LSLT1	Classification:	Accepted
Names:	331 LSLT1; 331 Life Sciences Laboratory Trench #1; 331 LSL Trench 1	Reclassification:	None
Type:	Trench	Start Date:	1/1/1966
Status:	Inactive	End Date:	1/1/1969
Description:	The trench is currently marked with a single sign at the site centerline and surrounded with Underground Radioactive Material signs. The 331 Life Sciences Laboratory Trench 1 (LSLT1) is an abandoned leaching trench that has been backfilled. The site was a rectangular excavation. The site includes connecting waste transfer lines.		
Location:	The unit was located underneath or near the east end of the 331 Building. The north leaching trench has been arbitrarily designated as the 331 LSLT1 unit. The site is located just north of the 331 LSLT2.		
Process Description:	The 331 Leaching Trenches disposed of sanitary and animal wastes to the soil column. Sanitary waste flowed from the 331-B Septic Tank and animal waste flowed from the animal waste unloading pit, entered Diversion Chamber No. 1, and was subsequently discharged to the leaching trenches.		
Related Sites/Structures:	The structures associated with this site include the 331 LSLT2 trench immediately to the south, the No. 1 and No. 2 Diversion Chambers, the animal waste unloading pit, the 331-B Sanitary Septic Tank, the 331-B (and possibly 331-A) Building, and the waste transfer lines. Other associated structures are the 331 Life Sciences Laboratory Drain Field and the 331-D Animal Waste Treatment Facility.		

Waste Type: Sanitary Sewage
Waste Description: The unit received sanitary wastewater.

Waste Type: Animal Waste
Waste Description: The unit received liquid animal waste from the animal waste pit. Since most of the animal studies involved the use of radio isotopes, animal waste was segregated on the bases of activity. Solid animal waste, exceeding 200 picocuries per gram specific activity, was transported to the 100-F Area trenches on a regular basis. All other solid animal waste (less than 200 picocuries per gram specific activity) was allowed to flush into the 331 waste system. However, specific cases of contamination have occurred at the 331 complex.

The constituents of concern reflect those contaminants which could potentially still be present in the subsurface at the 331 Building WIDS sites. These include americium-241, curium-244, neptunium-237, plutonium-238, plutonium-239, uranium-232, uranium-233, cadmium, chromium, lead, uranium (total). During a records review to identify the constituents of concern, no evidence of any waste containing PCBs was discovered. A walkthrough of the facility did not reveal the presence of any PCB containing equipment with the exception of possible PCB laden light ballasts. All transformers were of the dry design. Therefore, PCBs are not listed among the constituents of concern.

Code: 331 LSLT2	Classification: Accepted
Names: 331 LSLT2; 331 Life Sciences Laboratory Trench #2; 331 LSL Trench 2	Reclassification: None
Type: Trench	Start Date: 1/1/1966
Status: Inactive	End Date: 1/1/1974

Description: The trench is currently marked with a single sign at the site centerline and surrounded with Underground Radioactive Material signs. The 331 LSLT2 is an abandoned leaching trench that has been backfilled. The site was a rectangular excavation. The site includes connecting waste transfer lines.

Location: The unit was located underneath or near the east end of the 331 Building. The south leaching trench has been arbitrarily designated as the 331 LSLT2 Unit. The site is located just south of the 331 LSLT1.

Process Description: The 331 Leaching Trenches disposed of sanitary and animal wastes to the soil column. Sanitary waste flowed from the 331-B Septic Tank and animal waste flowed from the animal waste unloading pit, entered Diversion Chamber No. 1, and was subsequently discharged to the leaching trenches.

Related Sites/Structures: The structures associated with this site include the LSLT1, the No. 1 and No. 2 Diversion Chambers, the animal waste unloading pit, the 331-B Sanitary Septic Tank, the 331-B (and possibly 331-A) Buildings, and the waste transfer lines. Other associated structures are the 331 Life Sciences Laboratory Drain Field and the 331-D Animal Waste Treatment Facility.

Waste Type: Animal Waste
Waste Description: The unit received liquid animal waste from the animal waste pit. Animal wastes were the most prominent wastes, in terms of volume, generated by the 331 complex. Originally, liquid animal wastes from the complex including washdowns from the "hog and dog runs" were disposed to a large, unlined pit, east of the 331-D Building. Sewers carrying animal waste from the 331 complex were also connected to this pit.

Since most of the animal studies involved the use of radio isotopes, animal waste was segregated on the bases of activity. Solid animal waste, exceeding 200 picocuries per gram specific activity, was transported to the 100-F Area trenches on a regular basis. All other solid animal waste (less than 200 picocuries per gram specific activity) was allowed to flush into the 331 waste system. However, specific cases of contamination have occurred at the 331 complex.

The constituents of concern reflect those contaminants which could potentially still be present in the subsurface at the 331 Building WIDS sites. These include americium-241, curium-244, neptunium-237, plutonium-238, plutonium-239, uranium-232, uranium-233, cadmium, chromium, lead, uranium (total). During a records review to identify the constituents of concern, no evidence of any waste containing PCBs was discovered. A walkthrough of the facility did not reveal the presence of any PCB containing equipment with the exception of possible PCB laden light ballasts. All transformers were of the dry design. Therefore, PCBs are not listed among the constituents of concern.

Waste Type: Sanitary Sewage
Waste Description: The unit received sanitary wastewater. In 1974, the clean (non-radioactive) animal sewage was connected to the regular 300 Area Sanitary Sewer System.

Code: 333 ESHWSA **Classification:** Accepted
Names: 333 ESHWSA; 333 Building East Side **Reclassification:** Interim Closed Out (6/29/2010)
 Hazardous Waste Storage Area; 333 East Side
 HWSA
Type: Storage **Start Date:** 1/1/1964
Status: Inactive **End Date:**
Description: The 333 East Side Hazardous Waste Storage Area is part of the asphalt paved area near the northeast corner of the 333 Building, within the building fence line. No barrels of hazardous waste are stored here anymore, only miscellaneous non-hazardous materials. Currently, several large trash dumpsters are at this location.
Location: The unit is located northeast of the 333 Building, in the northern part of the 300 Area.
Process Description: The unit provided temporary storage for miscellaneous hazardous wastes.
Related Sites/Structures: The unit is associated with the 333 Building Operations. This site was located adjacent to the 618-1 Burial Ground.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The area contained small quantities of miscellaneous waste oils, cutting lubricants, chemicals, and solvents stored in containers. In previous years, the area was used for miscellaneous radioactive and hazardous waste storage. Currently this area is used only to store miscellaneous non-hazardous solid building waste.
Closure Info: 618-1, 618-1:1, 618-1:2, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA were addressed as a group. The information below documents information for the group of sites.

The 618-1 Burial Ground, two subsites, three consolidated sites and four co-located sites were remediated as a group. This group included WIDS sitecodes 618-1, 618-1:1, 618-1:2, 333 LHWSA, UPR-300-13, UPR-300-14, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA. Parts of waste sites 300-15, 300-259 and UPR-300-17 were also remediated along with 618-1. Several facilities were built over the top of portions of the 618-1 Burial Ground after it ceased to operate. These facilities were demolished and their debris taken to the Environmental Restoration Disposal Facility (ERDF) prior to the start of the burial ground remediation project.

Cleanup Verification Package CVP-2010-00001 demonstrates that remedial action at the site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established for the industrial land-use scenario in the Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the RDR/RAWP(DOE-RL-2001-47, Rev 3).

Field remediation activities were performed between September 17, 2008 and September 10, 2009, in accordance with the RDR/RAWP. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at Environmental Restoration Disposal Facility (ERDF). No excavated soil was used as clean, uncontaminated backfill.

Excavated material consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, and empty metal containers. Twenty metal drums containing personal protective equipment were removed from the trenches. Several bottles containing liquid and/or powder were also removed.

Some land disposal restricted (LDR) materials like lead solids contaminated with barium and chromium, were identified among the debris. The LDR material was segregated from the bulk soil and non-LDR debris for disposal. The bulk soil and non-LDR debris was sorted and segregated in the burial trenches. After sorting, the remaining bulk soil debris stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions. The released stockpiled material was transported to ERDF for disposal. Land disposal restricted materials that had been segregated for treatment were transported to ERDF under a separate waste profile.

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Contaminants of Potential Concern for the statistical samples included cesium-137, uranium-233/234, uranium-235, uranium-238, barium, beryllium, chromium (total), copper, lead, lithium, mercury, molybdenum, nickel, silver, uranium (total metal), zinc, PCBs, chloride, fluoride, nitrate, nitrite, and sulfate. Arsenic, antimony, boron, cadmium, cobalt, manganese, selenium, and vanadium were evaluated for the expanded inductively coupled plasma metals analytical list.

The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone.

Code:	340 COMPLEX	Classification:	Accepted
Names:	340 COMPLEX; 340 Radioactive Liquid Waste Handling Facility; 340 Vault	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1953
Status:	Active	End Date:	
Description:	The 340 Complex is located on the east side of the 300 Area. The 340 Complex consists of buildings 340, 340-A, 340-B, 3707-F, and two office trailers. Other 340 complex systems include the 307 Retention Basins, two tanks in an underground vault, six aboveground tanks in 340A, underground transfer pipes, load-out and decontamination equipment, and instrumentation. Prior to 1963, the 340 Complex also included the 316-3 trenches, which disposed of retention process waste that met release criteria.		

The 340 Building and Annex includes a control room, decontamination area, mechanical

equipment room, change and rest rooms, truck load-out facilities, and an operator's office. The process water, vacuum, and compressed dry-air subsystems are contained within these structures. The 340 Vault is directly east of the 340 building, and is a below-grade concrete basin, with large concrete cover-blocks. The Vault contains two 57,000-liter (15,000-gallon) tanks once used for primary RLWS storage. The 340-A building lies east of the vault, and houses six 30,000-liter (8,000-gallon) above ground tanks for auxiliary RLWS storage. The tanks are vented through the Vault filter system. 304-B building is divided into east and west sections. The east section was used for RLWS load-outs by rail to the 200 Areas. The west section is used for radioactive solid waste storage and for housing the east side ventilation system. 3707-F building houses the retention process sewer sampling equipment and controls. MO-741 is the health physics technicians' office and survey station. MO-036 is a double-wide trailer that provides offices for engineering, radiation control, and operations personnel.

- Location:** The 340 Complex is located inside 300 Area, east of California Street and north of the 3728 building.
- Process Description:** The 340 facility was completed in 1953 along with the initial Radioactive Liquid Waste Sewer (RLWS) piping system, the 307 Basins and the Retention Process Sewer (RPS) piping system. These systems represented an attempt to deal with radioactive effluents from several new laboratories in a modern, controlled manner. The 340/307 system was fed by pipelines from the 325, 326, 327, and 329 Buildings (and later the 308 and 325 Buildings) in a system known as the Retention Process Sewer(RPS) or the Diversion Waste System. Liquid process wastes that had the potential to be contaminated were disposed to the RPS and routed to the 307 Basins for sampling. If radioactivity was not detected above release limits, these wastes were disposed to the 307 Trenches. If levels proved to be above release limits, the effluents were pumped into the 340 Building RLWS tanks.
- The 340 Complex received and sampled the 300 Area radioactive liquid waste. Waste routed by the RLWS was accumulated and stored in two underground tanks. The waste was stored for less than 90 days. It was transferred to the 200 Areas by rail car for storage and disposal. Retention process sewer waste is collected at the 340 complex in the 307 retention basins, sampled, and discharged to the process sewer. Waste exceeding discharge criteria is held for transport to the 200 Areas.
- Related Sites/ Structures:** The 340 Complex received radioactive liquid waste from the 300 Area laboratory buildings via the 300 Area Radioactive Liquid Waste Sewer. The buildings discharging waste to the sewer include the 324, 325, 326, 327, and 329 buildings. Retention process sewer waste is generated by 324, 325, 326, 327, and the 329 buildings and discharge to the 307 Retention Basins, located in the 340 Complex.
- Unplanned releases associated with this facility are UPR-300-1, UPR-300-2, and UPR-300-11.
- Waste Type:** Soil
- Waste Description:** Several spills and leaks over the operational history of the 340 Complex have contributed radionuclides (such as Cesium and Strontium) and chemical waste to the soil column.
- Waste Type:** Process Effluent
- Waste Description:** The 340 Complex receives liquid effluent from 300 Area laboratories via the 300 Area Radioactive Liquid Waste Sewer and the Retention Process Sewer. The sewer effluent was collected in the 340 underground vault tanks and the 307 Retention Basins. Waste may also include organic and inorganic laboratory chemicals, acids, bases, and decontamination solutions.

Code: 400-37

Classification: Accepted

Names: 400-37; Fuel Oil Tank South of 4732-B

Reclassification: None

Closure Info: surface debris, including a section of irrigation pipe and valving which was found just north of the oil stained area. On June 20, 1995, sampling and removal of oil-stained soil was initiated. Field screening and laboratory analytical results indicated that the excavated soils were contaminated with PCBs at levels up to 55 parts per million (ppm) and TPH levels up to 350 parts per million. No other contaminants were detected above natural background levels.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code: 600-47	Classification: Accepted
Names: 600-47; Dumping Area North of 300-FF-1	Reclassification: Interim Closed Out (8/25/2005)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:

Description: The site has been remediated and interim closed out. This site consisted of several areas of debris and Underground Radioactive Material Areas.

Location: This site was located north of the 300 Area above the bank of the Columbia River west of Johnson Island.

Related Sites/ Structures: The 600-210 Outfall Structure and pipeline are also located in this area.

Waste Type: Misc. Trash and Debris

Waste Description: Debris found at the site includes concrete, brick, cinder block, glass, stainless steel, steel millings/filings, plastic, tar roofing paper, wire, pipe, bottles, sheet metal, screen, clay pipe, irrigation pipe, etc. Concreted soils were found during test diggings, burned wood was found on top of the rise. A "Danger Area" sign was located on the ground just north of the rise. A photo of the area from 1950 shows soil disturbance in the area.

Closure Info: The cleanup verification package, 2005-00005, documented that the site has been remediated in accordance with the Record of Decision for the 300-FF-2 Operable Unit (ROD), as modified by the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision (ESD). Remedial action objectives and goals established for the site in the ROD and ESD are reflected in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

The contaminated excavation materials were disposed at the Environmental Restoration Disposal Facility (ERDF) in the 200 Area of the Hanford Site, and the site was backfilled with clean soil to the average adjacent grade elevation. Cleanup objectives were based on the 300 Area unrestricted land-use scenario established by the ESD. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River.

The area within and around the 600-47 waste site was considered culturally sensitive based on proximity to the river, historical location of the pre-Hanford Fruitvale community, and discovery of an archaeological site in 1993 during the Treated Effluent Disposal Facility outfall installation. Some of the debris at the site may have pre-dated Hanford Site operations.

Final cleanup verification samples were collected on May 25, 2005. The site contaminants of concern (COCs) identified in the 300 Area Sampling and Analysis Plan (300 Area SAP), included: uranium, arsenic, barium, beryllium, cadmium, chromium and lead. The verification samples (J036X2 through J036X7) were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as required per the 300 Area SAP. Verification samples were composed of a composite of four soil aliquots collected from random locations within decision subunits (excluding the quality assurance/quality control samples).

The remedial action objectives and corresponding RAGs established for unrestricted land use in the ROD, the ESD, and the RDR/RAWP have been achieved as documented in the CVP. The contaminated materials from the site were excavated and disposed at ERDF. The remaining soils at this site have been sampled, analyzed, and modeled. The analytical and modeling results indicated that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by an unrestricted land-use scenario and that residual concentrations throughout this site pose no threat to groundwater or the Columbia River. No deep zone institutional controls were required. The 600-47 site has been verified to be remediated in accordance with the ROD and ESD and may be backfilled.

Code:	600-63	Classification:	Accepted
Names:	600-63; Buried Waste Test Facility; Recharge Study Site; Vadose Zone Field Study - 300 North; VZFS300N; 300-N Lysimeter Area	Reclassification:	None
Type:	Experiment/Test Site	Start Date:	1/1/1984
Status:	Active	End Date:	1/1/1994
Description:	The site is enclosed within a chain link fence with barbed wire top and a locked gate. The fenced area is posted with "Restricted Area - Contact PNL Radiological Office" and "Underground Radioactive Material" signs. Outside the fence there is a considerable amount of debris. Two large wooden cabinets, pallets, piping and a fire extinguisher were noted.		
Location:	The unit is located southeast of 400 Area, just west of Route 4 South. It is southeast of the 618-10 Burial ground.		
Process Description:	The Buried Waste Test Facility is located in the northeast corner of the fenced area. A solar panel, some metal scaffolds and a concrete cover are visible. In 1998, the west side of the site had a large amount of blown-in tumbleweeds collected along the fence. The tumbleweeds had been removed before the 1999 site visit. The BWTF was established in 1978 to investigate recharge and radionuclide migration in Hanford soil. Six drainage lysimeters (7.6 meters deep) and two weighing lysimeters (1.5 meters deep) were installed. A trace amount of Co-60 was mixed in one centimeter of soil and placed 60 centimeters below the surface of two of the drainage lysimeters. Trace amounts of tritium was placed in two other lysimeters. The migration of the contaminants was monitored. The columns were sampled in 1990. No tritium or cobalt was found at the 180 centimeter level using hand-held instruments and field level screens.		
Related Sites/ Structures:	The site is associated with 600-259.		
Waste Type:	Soil		
Waste Description:	A trace amount of Co-60 was mixed in one centimeter of soil and placed 60 centimeters below the surface of two of the drainage lysimeters. Trace amounts of tritium were placed in two other lysimeters. The migration of the contaminants was monitored.		

Code: 600-243 **Classification:** Accepted
Names: 600-243; Bioremediation Pad Inside Gravel Pit #6; Oil Contaminated Soil; Petroleum Contaminated Soil Bioremediation Pad; Pit 6 **Reclassification:** Interim Closed Out (11/7/2008)
Type: Surface Impoundment **Start Date:**
Status: Inactive **End Date:**

Description: The site is a treatment facility for petroleum contaminated soil. It is rectangular shaped, 48.5 meters (159 feet) long by 38.7 meters (127 feet) wide. A 0.9 meters (3 foot) berm surrounds the site. The site is lined with heavy black plastic. The contaminated soil has visible rust stains and pieces of clear plastic mixed into the soil. Tumbleweeds and cheatgrass are growing on the surface. No petroleum odors were observed at the site. The site is posted Keep Out - Petroleum Contaminated Soil - For Entry Contact 376-7053 and WIDS Site 600-243.

Location: The site is located approximately 300 m (984 ft) west of the 300 Area and south of a dead end dirt road that heads west from Route 4 South. The site boundaries as identified in the remedial action design drawing are: 1) (E) 593130.19, (N) 116110.00 Washington State Plane 2) (E) 593125.56, (N) 116156.22 3) (E) 593181.25, (N) 116158.01 4) (E) 593179.63, (N) 116118.95

Process Description: The site was used as a bioremediation pad for petroleum-contaminated soils. The soil originated from remediation activities performed in 1994 as part of the L-044 Project. The project generated contaminated soils during the removal of underground storage tanks at the 300 Area Fire Station (300-5) and in the 1100 Area. Petroleum tanks removed from these areas during the L-044 project included those that stored gasoline, diesel and waste oil. Moisture and nutrients were periodically added to the site to facilitate bioremediation of the hydrocarbons. Eight samples were collected in 1995 and analyzed for gasoline, diesel, and heavy oils. Eleven samples were collected in 2001 and analyzed for diesel and heavy oils. The results indicated that the soil still exceeded Model Toxics Control Act (MTCA) 1996 Method A cleanup levels for soil (200 mg/kg TPH based on protection of groundwater). Motor oil range hydrocarbons were detected as high as 3700 mg/kg. Diesel range hydrocarbons were not detected.

Related Sites/ Structures: The bioremediation pad is located within the original boundaries of Gravel Pit #6 (site code 600-244).

Waste Type: Soil

Waste Description: The waste is petroleum contaminated soil from Project LO-44, Underground Storage Tank Removals. The contaminants of potential concern (COPCs) for the 600-243 waste site were petroleum hydrocarbons in the diesel and motor oil ranges, benzo(k)fluoranthene, chrysene, fluoranthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, PCBs, and lead.

Closure Info: The Remaining Sites Verification Package (RSVP-2007-033) demonstrates that the 600-243 petroleum-contaminated soil bioremediation pad meets the objectives for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (ROD).

Remedial action at the waste site was performed in August 2007. The contaminated soil and liner were removed during excavation, resulting in disposal of approximately 2,134 bank cubic meters (BCM) (2,791 bank cubic yards [BCY]) of contaminated materials to the Environmental Restoration Disposal Facility.

A comparison against ecological risk screening levels was made for the site contaminants of

concern and other constituents. Screening levels were exceeded for antimony, barium, boron, cadmium, copper, lead, manganese, selenium, vanadium, and zinc. Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. Because concentrations of antimony, manganese, and vanadium are below Hanford Site background levels, it is believed that the presence of these constituents does not pose a risk to ecological receptors. The remaining metals that exceed ecological risk screening levels are due to coal ash, which is ubiquitous in the general area of the 600-243 waste site. The bioremediation pad had been placed directly on coal ash, and the verification sample results reflect the composition of the coal ash. A more complete quantitative ecological risk assessment will be presented in the baseline risk assessment for the river corridor portion of the Hanford Site and will be used to support the final closeout decision for this site.

Verification sampling was performed in October 2007 to collect data to determine if the remedial action goals had been met. The contaminants of potential concern (COPCs) for verification sampling included petroleum hydrocarbons in the diesel and motor oil ranges, benzo(k)fluoranthene, chrysene, fluoranthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, polychlorinated biphenyls, and lead. The coal ash that had originally been underneath the waste site was exposed after remediation. This material affected the verification sampling results for the waste site as the ash contains multiple metals. While a limited sampling of surrounding coal ash was undertaken, a full evaluation of the coal ash underlying and surrounding the waste is outside the scope of this remaining sites verification package. Radiological field surveys were performed to ensure that radiological contamination was not present at the waste site.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

Statistical sampling to verify the completeness of remediation was performed and analytical results for the decision unit were shown to meet the cleanup objectives for direct exposure,

Code: 600-259	Classification: Accepted
Names: 600-259; Grout Waste Test Lysimeter; Inactive Lysimeter Site East End; Special Waste Form Lysimeter	Reclassification: Interim Closed Out (2/6/2006)
Type: Experiment/Test Site	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1994
Description: The entire site has been remediated and interim closed out.	
The site consisted of The Grout Waste Test Facility (subsite 1) which was exhumed in 1994 and Special Waste Form lysimeter (subsite 2).	
Location:	The unit was located southeast of 400 Area, just west of Route 4 South. It was southeast of the 618-10 Burial ground.
Release Description:	On January 25, 1991, it was concluded that the lysimeter may have been damaged during backfilling causing a reportable quantity of effluent to leak into the soil. It was estimated that over a 3 year period, as much as 300 liters of contaminated liquid may have leaked. It was noted that one of the Grout Waste Test Facility lysimeter caissons (B1) was not collecting recharge water. The caisson was not exhumed to determine the cause, but it was speculated that

the weld at the bottom of the caisson had been compromised when it was filled with gravel. It was decided that the buried caisson had probably leaked into the underlying sediments, contaminating them with radioactive materials. The release was estimated to have occurred over a 3 year period. The maximum concentration of contaminants in the sediments was estimated to be $6E-05$ microcuries/milliliter to $1.3E-04$ microcuries/milliliter of Technetium-99. When the Grout Lysimeter Facility was removed in September 1994, extensive sampling was conducted for all constituents identified in the caissons. Background samples were collected and compared to the sample results. It was concluded that no radiological constituents had leaked from either caisson during the lysimeter test. Although there was clear evidence that the B1 Lysimeter did have a large seam weld crack at the bottom, the leak contained only atmospheric moisture. No final report was issued for the sample analysis due to lack of funding.

Process Description: The lysimeters were designed to test the leaching and migration rates of grout solidified low level radioactive waste. Routine monitoring and leachate collection activities were conducted until January 1989.

Related Sites/ Structures: The site was associated with 600-63 and a 1991 Occurrence Report indicating an unplanned release to the soil may have occurred (RL--PNNL-PNLBOPER-1991-0018) at the Grout Waste Test Facility.

Waste Type: Soil

Waste Description: The Special Waste Form lysimeter contained masonry cement, Portland cement and vinyl ester styrene waste forms spiked with Mn-54, Co-60, Cs-134 and Cs-137. The waste forms were placed into the lysimeters at various depths. The leachate was collected and disposed of. The research was completed in 1992. The lysimeters were capped in 1995 to prevent any further water intrusion. The leachate was drained for the last time by PNNL in 1996.

Waste Type: Soil

Waste Description: The Grout Waste Lysimeter caissons (A-1 and B-1) contained layers of waste, containing small amounts of both radioactive and non-radioactive tracer agents embedded into grout material. The waste layers were separated by layers of soil. The lysimeter caissons were buried below ground. The radioactive tracers used in this test were primarily Co-60 (up to 330 Ci/L) and lesser amounts of Cobalt-58, Iron-59, Chromium-51 and Manganese-54.

Closure Info: The Cleanup Verification Package for the 600-259 Waste Site (CVP-2005-00008), demonstrated that the waste site was remediated in accordance with the Record of Decision for the 300-FF-2 Operable Unit, Hanford Site (ROD), as modified by the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision (ESD). Remedial action of both subsites has achieved the remedial action objectives (RAOs) and remedial action goals (RAGs) established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

Preliminary waste site contaminants of potential concern were identified in the 300 Area Remedial Action Sampling and Analysis Plan (SAP) and included: cesium-134, cesium-137, cobalt-60, manganese-54, technetium-99, tritium. Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern on 8/23/05 through 9/21/05. HEIS Verification sample numbers, J03WM5 through J03WM9 and J10738 through J10742, were listed in appendix A of the CVP.

Remedial action was conducted from September 2004 to July 2005. Excavation of the site included the removal of all caisson structures and radioactive waste forms. Overburden material was segregated and stockpiled for possible use as backfill material pending the results of verification sampling. No anomalies were identified within the bulk soil and debris during remedial activities, and no indications of liquid waste migration beyond the caisson units were observed.

Approximately 950 metric tons (1,050 U.S. tons) of contaminated material was removed and disposed of at the ERDF. The remaining soil was sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by an unrestricted land-use scenario and that residual concentrations throughout this site pose no threat to groundwater or the Columbia River.

The 600-259 (subsites 1 and 2), waste site has been verified to be remediated in accordance with the ROD and the ESD and may be backfilled. This site has no deep zone; therefore no institutional controls are required.

This Site has the Following SubSites:

Code: 600-259:1

Names: 600-259:1; Grout Waste Test Facility Lysimeter

Code: 600-259:2

Names: 600-259:2; Grout Lysimeter Site; Special Waste Form Lysimeter

Code: 600-259:1

Classification: Accepted

Names: 600-259:1; Grout Waste Test Facility Lysimeter

Reclassification: Interim Closed Out (2/6/2006)

Type: Experiment/Test Site

Start Date:

Status: Inactive

End Date:

Description: The lysimeters were exhumed in September 1994. The Grout Waste Test Facility consisted of four large lysimeters designed to test the leaching and migration rates of grout solidified low level radioactive waste. The four caissons were placed vertically in the ground, forming a square. The four lysimeters were designated as A1, A2, B1 and B2. A2 and B2 were never used. Lysimeter A1 contained phosphate/sulfate waste and B1 contained Cladding Removal Waste. Twenty four radioactive waste forms were placed on each lysimeter. The waste forms were placed in layers, separated by soil and gravel. Routine monitoring and leachate collection activities were conducted until January 1989.

The 600-259 (subsites 1 and 2), waste site has been verified to be remediated in accordance with the ROD and the ESD and may be backfilled. This site has no deep zone; therefore no institutional controls are required.

Location: The unit is located southeast of 400 Area, just west of Route 4 South. It is southeast of the 618-10 Burial ground, and adjacent to 600-63.

Process Description: The lysimeters were designed to test the leaching and migration rates of grout solidified low level radioactive waste. Routine monitoring and leachate collection activities were conducted until January 1989.

The SubSite is Part Of:

Code: 600-259

Names: 600-259; Grout Waste Test Lysimeter; Inactive Lysimeter Site East End; Special Waste Form Lysimeter

Code: 600-259:2

Classification: Accepted

Names: 600-259:2; Grout Lysimeter Site; Special Waste Form Lysimeter

Reclassification: Interim Closed Out (2/6/2006)

Type: Experiment/Test Site

Start Date:

Status: Inactive**End Date:**

Description: In 1999, programmatic responsibility for the lysimeter site was split between PNNL and ERC. PNNL retained responsibility for the active Buried Waste Lysimeter (see 600-63). The inactive Grout Waste Lysimeter facility and the Special Waste Form lysimeter were transitioned to the Environmental Restoration Contractor. A chain link fence had been previously added to physically separate the active portion of the site from the inactive portion.

The Special Waste-Form Lysimeter was constructed in the summer of 1983 and consisted of ten soil filled caissons [1.83 meters (6 feet) in diameter by 3.05 meters (10 feet) deep] placed concentrically around a central access caisson that measured 3.65 meters (in diameter, 3.65 meters deep). Each lysimeter is equipped with a gravity drain attached to the central caisson for leachate collection. The central caisson also provides access to the ten lysimeters through horizontal sample ports. A 15 centimeter diameter monitoring well is installed adjacent to each lysimeter caisson to allow for downwell gamma scanning and neutron probe measurements of the caissons. Each of the ten lysimeter caissons contains one waste-form sample that is in direct contact with the soil. Samples of commercial reactor waste was obtained and solidified in cement, bitumen or vinyl-ester styrene to create a waste form. Information was collected regarding the amount and types of contaminants that leached into the soil over time. Test data was collected between 1984 and 1992.

The 600-259 (subsites 1 and 2), waste site has been verified to be remediated in accordance with the ROD and the ESD and may be backfilled. This site has no deep zone; therefore no institutional controls are required.

Location: The unit is located southeast of 400 Area, just west of Route 4 South. It is southeast of the 618-10 Burial ground, and adjacent to 600-63.

Process Description: Samples of commercial reactor waste were obtained and solidified in cement, bitumen or vinyl-ester styrene to create a waste form. Information was collected regarding the amount and types of contaminants that leached into the soil over time. Test data were collected between 1984 and 1992.

The SubSite is Part Of:

Code: 600-259

Names: 600-259; Grout Waste Test Lysimeter; Inactive Lysimeter Site East End; Special Waste Form Lysimeter

Code: 600-290

Classification: Accepted

Names: 600-290; Contaminated Concrete Foundation West of 618-13; Pad and Loading Dock Near 618-13; 300 West Storage Area

Reclassification: None

Type: Foundation

Start Date: 1/1/1947

Status: Inactive

End Date: 1/1/1950

Description: The site consists of two subsites. Subsite 1 included a contaminated foundation and loading dock. The foundation and loading dock were remediated in 2009. Prior to remediation, the concrete pad had been posted as a radiological fixed contamination area. Subsite 2 includes the rest of the site boundary and is know as the 300 West Storage Area.

Location: The concrete foundation had been located due west of 300 Area, at the end of a gravel road. It is approximately 730 meters (0.45 miles) west of Stevens Drive.

Process Description: The 300 Area was constructed between June 1943 and January 1945. At that time, the area

surrounding the 600-290 waste site was inconspicuous except for a dirt road that ran along the north side of the gravel pit. A 1948 aerial photograph (IDMS-N2139826) shows a disturbed tear drop shaped area similar to the present condition. Two structures are visible in the photograph. One is at the center of the tear drop shape and the other borders the dirt road on the north side. The structure to the north is surrounded by a square feature resembling a fence. WHC-MR-0388 states that a 500 gallon Columbian stainless steel tank and several agitators, used by Du Pont in the early 321 Building bismuth phosphate tests, was buried in 1947 west of 300 Area. The area west of 300 Area was later used to bury solvent waste from 321 Building. The burial site (618-9) is known as the "300 West Burial Ground" and the "Dry West Burial Site No. 9". Dried hexone from solvent extraction studies in the 321 Building was placed in black iron drums and moved to a fenced storage area near the desert dry chemical storage hut in March 1950 (HW-17410). The 321 Building sustained significant damage from a hexone explosion on January 23, 1949 (HW-13812). The facility management would have been particularly sensitive to the dangers of hexone following the explosion. The location of this remote area was ideal for storing dangerous materials, away from buildings and personnel. In October 1950 all hexone from the 321 Building tanks was removed to provide room for the less-flammable Shell Deodorized Spray Base Solvent. The hexone was dried and stored in black metal drums for use in subsequent Redox studies (HW-15843 and HW-19325). Top soil from the 303 Area was removed in 1950 and piled approximately one-half to three quarters of a mile northwest of the 300 Area, and covered with two feet of clean soil. Total activity buried here is not known. The 618-13 soil mound of covered contaminated material has been posted as a radiation zone (HW-39076). This waste site, is visible in aerial photographs as early as April 30, 1951 (350-NEG). Contaminated soil was reportedly found inside the 300 Area, on October 23, 1950, during construction of the new Instrument Division Building. The new building was being located between the existing Instrument Shop and the Metal Fabrication Plant (313 Building). The activities involved excavating the earth around two existing tile pipe lines (one sanitary and one liquid process waste line from the Metal Fabrication Plant). The incident report (DDTS-Generated-3822) speculated that the contaminated soil was from a wooden French Drain or crib installed on this site in 1944 to temporarily receive wastes from experimental autoclaves. The soil had a maximum dosage-rate of 50 mrep/hr (HW-19325). Facility personnel, in 1971, identified the soil mound (618-13) as the location that received soil from the excavation near the 313 Building (in 1952) (Richmond 1971). The evidence from aerial photographs and historical documents appears to indicate that the soil mound was constructed shortly after October 23, 1950. The facility personnel, in 1971, also described the earth mound as having been constructed to serve as a blast shield for any explosions which might result from solvent storage in the [300-W] Equipment Storage Yard. The 1951 training manual for the 321 Building identified one of the related facilities as the "300 West Area Storage for chemicals and solvents" (HW-19791). Aerial photography from this period shows only one location (near the mound) fitting this description. An aerial photograph (2406-PHOTO), dated December 1, 1953, has features that resemble objects contained in a fenced area north of the soil mound. This is the same location where a square feature resembling a fence was observed in a 1948 aerial photograph (IDMS number N2139826). It appears that the dry chemical storage was located just north of the 600-290 waste site, near the location of the 300 West Burial Ground (618-9). The 300 West Burial Ground was constructed in June 1954 when about 18,927 liters (5,000 gallons) of solvent waste from the 321 Building, contained in 208 liter (55 gallon) drums, was buried and covered with about 1.2 meters (4 feet) of clean soil (HW-39076). The burial ground is also described in document WHC-MR-0388. This report states that nearly 100 drums that had been generated in 1949 to 1950. The drums were stored on an outdoor pad for nearly 5 years. The drums were later placed in the 300 West Burial Ground (sitecode 618-9). The fence that surrounded the soil mound (618-13) is visible in a May 15, 1956 aerial photograph (3746-PHOTO). Two large structures are also visible in the photograph that resemble huts. The area (fence, roads, storage buildings and earth barricade) is depicted in drawing M-3600 sheet 46, originally drawn in 1958. The mound, fence, hutments and various objects inside the fence are also visible in aerial photographs taken in 1962 and 1968 (29033 and 48300-20-CN). The fenced area is identified in the 1975 Final Environmental Statement (ERDA-1538) as a

"Contaminated Equipment Storage Area". This report states that all of the equipment had been removed and that the ground was slightly contaminated. The purpose of the concrete pad and loading dock was described in the 300-FF-2 Operable Unit Technical Baseline Report (Reference: Appendix A of BHI-00012, Letter from Keene, A. R., 02/03/1961, "Burial of Solid Wastes in the Vicinity of the 300 Area"). The report states that the pad and dock were used for the storage of depleted solvents that were subsequently buried in the nearby 618-9 burial ground. The soil mound, and the pad and loading dock, was all that remained by 1976 (aerial photograph 74962-11CN). The fence, hutments and fenced in objects had all been removed.

Related Sites/ Structures: The concrete foundation is associated with the excavated 618-9 burial ground, the 618-13 soil mound and the 321 building.

Waste Type: Chemical Release

Waste Description: The waste is the remains of the concrete pad (apron), the loading dock and surrounding soil.

The loading dock was obviously stained with rust colored and yellow staining. Contaminants of potential concern may include uranium and nitric acid (uranyl nitrate). Volatile organic compounds (including hexone), semi-volatile organic compounds, polychlorinated biphenyls, chlorinated hydrocarbons, and lead.

Five areas of fixed radiological contamination were identified during a radiological survey on 5/1/2006 (RSR-300PS-06-0808).

This Site has the Following SubSites:

Code: 600-290:1

Names: 600-290:1; Contaminated Concrete Foundation West of 618-13; Pad and Loading Dock Near 618-13

Code: 600-290:2

Names: 600-290:2; 300 West Storage Area

Code: 600-290:1

Classification: Accepted

Names: 600-290:1; Contaminated Concrete Foundation West of 618-13; Pad and Loading Dock Near 618-13

Reclassification: Interim Closed Out (11/12/2009)

Type: Foundation

Start Date:

Status: Inactive

End Date:

Description: A gravel road lead to the concrete pad on the north side of the soil mound, where a truck could back up on the pad to the loading dock and offload drums of waste. Circular rust colored patterns, in the shape of 308 liter (55 gallon) drums, suggest that drums were once stored on the loading dock. The foundation and loading dock were remediated in 2009. Prior to remediation, the concrete pad had been posted as a radiological fixed contamination area.

Closure Info: 618-13 and 600-290:1 were addressed as a group. The information below documents information for the group of sites.

The concrete pad and loading dock were remediated in 2009. Field remediation of the 618-13 Burial Ground and the 600-290:1 concrete pad and loading dock occurred between January 5 and February 2, 2009. The activity removed the soil mound, concrete pad, and loading dock. Cleanup Verification Package CVP-2009-00005 demonstrates that remedial action at the 618-13 Burial Ground and the collocated 600-290:1 Pad and Loading Dock Near 618-13 has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAOs) established for the unrestricted landuse scenario in the Interim Action Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable

Unit (EPA 2004), and the Remedial Design/Remedial Action Work Plan for the 300 Area (DOE/RL 2009b).

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 618-13 and 600-290:1 sites have been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land-use scenario and poses no threat to groundwater or the Columbia River.

Both 618-13 and 600-290:1 waste sites are closed to shallow zone criteria and, therefore, do not require any institutional controls.

The SubSite is Part Of:

Code: 600-290

Names: 600-290; Contaminated Concrete Foundation West of 618-13; Pad and Loading Dock Near 618-13; 300 West Storage Area

Code: 600-290:2

Classification: Accepted

Names: 600-290:2; 300 West Storage Area

Reclassification: None

Type: Foundation

Start Date:

Status: Inactive

End Date:

Description: The subsite includes the remaining area covered by the WIDS boundary. The majority of the area was enclosed by a fence and was used for storage of contaminated equipment. A portion of the site extends north of the fence where anomalies were visible in an old aerial photograph.

The SubSite is Part Of:

Code: 600-290

Names: 600-290; Contaminated Concrete Foundation West of 618-13; Pad and Loading Dock Near 618-13; 300 West Storage Area

Code: 618-1

Classification: Accepted

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Reclassification: Interim Closed Out (6/29/2010)

Type: Burial Ground

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1951

Description: This burial ground was excavated and remediated in 2008 and 2009.

Drawing H-3-1172 shows the Burial Ground consisted of at least two trenches running north-south, that measure 5 meters (16 feet) wide by 61 meters (200 feet) long and are 2.4 meters (8 feet) deep. The south end of the burial ground contained a series of pits that are estimated to be 6.1 meters (20 feet) deep and possibly two shorter, east-west trenches. The burial ground had been marked with yellow, concrete AC-540 markers and radiation area chain on three sides. Five other Buried Radioactive Material medallions, inserted flush with the asphalt pavement along the east side of the 333 Building, marked the western extent of the burial ground. In 1998, the burial ground was located within a larger area posted as a Contamination Area.

Over time, multiple facilities and portions of operational support structures were placed on top of the backfilled burial ground footprint. The 303-M Building was built over a portion of the original burial ground.

This site has two subsites, 618-1:1, the 333 ESHTSSA (333 East Side Heat Treat Salt Storage

Area), and 618-1:2, the Limestone Neutralization Pit, WATS Trench Neutralization Pit. Other, co-located waste sites that have been consolidated into the burial ground waste site include UPR-300-13 (Acid Neutralization Tank Leak East of the 333 Building), UPR-300-14 (Acid Leak at the 334 Tank Farm) and 333 LHWSA (333 Laydown Hazardous Waste Storage Area).

Location: The site was located in the northeast corner of the 300 Area, adjacent to the east side of the 333 Building.

Process Description: The burial ground received waste from early 300 Area facility operations, including the 305 Reactor, 3706 Laboratory and the 3741 Building. Conflicting operational dates have been cited in various documentation. HW-39076 states the operational dates of 618-1 were 1945 through 1951, when it was replaced by 618-2. Historical photograph (Negative number 2406) is dated December 1953. The 618-1 Burial Ground appears to be backfilled and inactive in this aerial photograph. The 618-2 Burial Ground is also visible in this photograph and indicates multiple burial trenches are open and active. Other documents and letters indicate the end date for this burial ground as 1956 or 1957.

Related Sites/ Structures: The burial ground is associated with early 300 Area facility operations. Several facilities had been constructed over the top of portions of the burial ground. The 303-M facility was built over the top of the north end of the west trench (Burial Trench 1). The 334 building, the 334-A building, and the 334 Waste Acid Tanks (above ground tank farm) were also placed over portions of the west side of the burial ground. WIDS SubSites 618-1:1, 333 ESHTSSA and 618-1:2, Limestone Neutralization Pit are also associated with the site since they were physically located on or immediately adjacent to the burial ground. The burial ground is associated with acid releases, WIDS Site UPR-300-13 and WIDS Site UPR-300-14, and two storage areas, 333 LHWSA and 333 ESHTSSA (see the consolidated sites under the Regulatory tab). The 333 ESHTSSA is designated as subsite 618-1:1. The Limestone Neutralization Pit is designated as subsite 618-1:2. WIDS Site 300-259 (Contaminated Soil East of 618-1 Burial Ground) surrounded 618-1 Burial Ground.

Waste Type: Misc. Trash and Debris

Waste Description: 618-1 was estimated to contain large quantities of uranium (~16 tons [14,500 kilograms]) from the fuel fabrication activities and small quantities of plutonium and fission products from laboratory operations. Specific items include contaminated gloves, miscellaneous equipment, bronze crucibles, and solid laboratory waste. A 1946 report states that lead sink traps from the 321 laboratory were removed and taken to the burial ground. Radiological readings on the sink traps indicated 6,000 d/m alpha and 15 mr/hr beta/gamma. A monthly report from August 1946 mentions the burial of a bronze crucible that read 170 millireps/hour (179 millirads/hour) and 5.5 mr/hr (millirads/hour) at a distance of 10.2 centimeters (4 inches). UPR-300-13 contributed process acid that included 4,432 pounds (2,012 kilograms) of nitrate, 447 pounds (202.9 kilograms) of copper, and 3 pounds (1.4 kilograms) of uranium.

During the burial ground remediation, in 2008 and 2009, items found in the burial ground included metal drums, iron and bronze crucibles, metal boxes, glass laboratory flasks and bottles. Some of the bottles contained unknown liquids and powders. One drum was labeled Poison Waste. Some drums were leaking oily liquid.

Waste Type: Chemical Release

Waste Description: Additional waste from unplanned releases (WIDS Site UPR-300-13) from facilities that were constructed over the burial ground would have contributed additional chemicals to the soil column as a liquid release. Sample results showed that 2015 kilograms (4432 pounds) of nitric acid, 44 kilograms (96 pounds) of fluoride, 217 kilograms (477 pounds) of copper and 1.4 kilograms (3 pounds) equivalent to 0.0005 curies of uranium were lost to the ground. 870 kilograms (1910 pounds) of caustic was added to the leaking tank and allowed to leak into the soil to neutralize the acid that had escaped into the ground. The leak rate of the tank was 582.9 liters (154 gallons) per hour.

A release on July 18, 1975 (WIDS Site UPR-300-14) of 4,540 liters (1,200 gallons) of 93% sulfuric acid solution from the 334 Tank Farm drained to a limestone pit (WIDS Site 300-246). Since the pit had an open bottom and was located over the 618-1 Burial Ground, the release drained to the burial ground.

- Waste Type:** Chemicals
- Waste Description:** WIDS Site 333 ESHTSSA stored above ground containers of solidified heat-treat salt waste from the fuels fabrication facility. The waste consisted of sodium chloride, potassium chloride, sodium nitrite, sodium nitrate, and potassium nitrate. Approximately, thirty to fifty 208 liter (55 gallon) drums accumulated each year (1964-1987).
- Closure Info:** 618-1, 618-1:1, 618-1:2, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA were addressed as a group. The information below documents information for the group of sites.

The 618-1 Burial Ground, two subsites, three consolidated sites and four co-located sites were remediated as a group. This group included WIDS sitecodes 618-1, 618-1:1, 618-1:2, 333 LHWSA, UPR-300-13, UPR-300-14, 300-110, 303-M SA, 303-M UOF and 333 ESHWSA. Parts of waste sites 300-15, 300-259 and UPR-300-17 were also remediated along with 618-1. Several facilities were built over the top of portions of the 618-1 Burial Ground after it ceased to operate. These facilities were demolished and their debris taken to the Environmental Restoration Disposal Facility (ERDF) prior to the start of the burial ground remediation project.

Cleanup Verification Package CVP-2010-00001 demonstrates that remedial action at the site has achieved the Remedial Action Objectives and corresponding Remedial Action Goals established for the industrial land-use scenario in the Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the RDR/RAWP(DOE-RL-2001-47, Rev 3).

Field remediation activities were performed between September 17, 2008 and September 10, 2009, in accordance with the RDR/RAWP. Approximately 47,332 metric tons (52,160 US tons) of soil and debris was excavated and disposed of at Environmental Restoration Disposal Facility (ERDF). No excavated soil was used as clean, uncontaminated backfill.

Excavated material consisted mostly of contaminated soil, metal pipe, crucibles, laboratory glassware, and empty metal containers. Twenty metal drums containing personal protective equipment were removed from the trenches. Several bottles containing liquid and/or powder were also removed.

Some land disposal restricted (LDR) materials like lead solids contaminated with barium and chromium, were identified among the debris. The LDR material was segregated from the bulk soil and non-LDR debris for disposal. The bulk soil and non-LDR debris was sorted and segregated in the burial trenches. After sorting, the remaining bulk soil debris stockpiles were sampled to ensure that the material was in compliance with land disposal restrictions. The released stockpiled material was transported to ERDF for disposal. Land disposal restricted materials that had been segregated for treatment were transported to ERDF under a separate waste profile.

Following remediation and field screening of the 618-1 Burial Ground, verification sampling was conducted on January 26 and 27, 2010. Contaminants of Potential Concern for the statistical samples included cesium-137, uranium-233/234, uranium-235, uranium-238, barium, beryllium, chromium (total), copper, lead, lithium, mercury, molybdenum, nickel, silver, uranium (total metal), zinc, PCBs, chloride, fluoride, nitrate, nitrite, and sulfate. Arsenic, antimony, boron, cadmium, cobalt, manganese, selenium, and vanadium were evaluated for the expanded inductively coupled plasma metals analytical list.

The remaining soil at the 618-1 site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls are required to prevent drilling or excavation into the deep zone.

The Following Sites Were Consolidated With This Site:

Code: 333 ESHTSSA

Names: 333 ESHTSSA; 333 East Side Heat Treat Salt Storage Area

Code: 333 LHWSA

Names: 333 LHWSA; 333 Laydown Hazardous Waste Storage Area; 333 Laydown HWSA

Code: UPR-300-13

Names: UPR-300-13; Acid Neutralization Tank Leak East of 333 Building; UN-300-13

Code: UPR-300-14

Names: UPR-300-14; Acid Leak at 334 Tank Farm; UN-300-14

This Site has the Following SubSites:

Code: 618-1:1

Names: 618-1:1; 333 East Side Heat Treat Salt Storage Area; 333 ESHTSSA

Code: 618-1:2

Names: 618-1:2; Limestone Neutralization Pit; WATS Trench Neutralization Pit; 300-246

Code: 618-1:1

Classification: Accepted

Names: 618-1:1; 333 East Side Heat Treat Salt Storage Area; 333 ESHTSSA

Reclassification: Interim Closed Out (6/29/2010)

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: This area has been remediated and reclassified to Interim Closed Out with the 618-1 Burial Ground. The 333 ESHTSSA was an inactive storage area. The unit included various locations inside the 333 Building fence where heat-treat salts were stored. The heat-treat salts were stored on the paved area near the southeast corner of the building or in the adjacent area located over a portion of the 618-1 Burial Ground. Several areas of the asphalt pavement have been painted over and posted fixed radiological contamination (see WIDS Site UPR-300-17). The area stored containers of solidified heat-treat salt waste from the fuels fabrication facility. The waste consisted of sodium chloride, potassium chloride, sodium nitrite, sodium nitrate, and potassium nitrate. Approximately, thirty to fifty 208 liter (55 gallon) drums accumulated each year (1964-1987).

The SubSite is Part Of:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: 618-1:2

Classification: Accepted

Names: 618-1:2; Limestone Neutralization Pit; WATS Trench Neutralization Pit; 300-246

Reclassification: Interim Closed Out (6/29/2010)

Type: Burial Ground

Start Date:

Status: Inactive

End Date:

Description: The neutralization pit has been remediated and reclassified as Interim Closed Out with the 618-

1 Burial Ground. The centerline of the Pit was 26.8 meters (88 feet) south of the centerline of the 333 Building East Pipe Trench, aligned with where the pipe trench exited the east wall of the 333 Building. (see H-3-18520). The upper wooden covers for the Limestone Neutralization Pit had been removed and the pit had been backfilled with soil. It was no longer visible at the surface. The concrete pipe trench branch to the pit was visible prior to remediation (see photos). The drain line from the concrete pipe trench to the pit was sealed and the neutralization pit shut down in 1975, following a large acid spill (WIDS Site UPR-300-14). This incident caused concern for the groundwater. The original pit was constructed of a 0.46 meter (1.5 foot) deep bed of limestone with 7.6 centimeter (3 inch) rock on top of a 0.3 meter (1 foot) deep bed of washed gravel. The top of the limestone bed was 15.2 centimeters (6 inches) above grade and 1.2 meters (4 feet) above the surface of the limestone bed. The Limestone Neutralization Pit received drainage from the WATS pipe trench and the 334 Tank Farm sump trench. The pit was filled with limestone rocks used to neutralize acidic aqueous solutions draining from the pipe trench. The pit had an open top to allow the addition of limestone rocks as needed. It was open at the bottom to drain to the soil column. The soil column effected part of the of the 618-1 Burial Ground, located beneath the neutralization pit. The 334 Tank Farm had four elevated tanks, two for storing concentrated nitric acid, one to store concentrated sulfuric acid, and one tank to store waste etch acid. A sump trench beneath the elevated acid tanks collected leaks from tanks, valves, and piping. The acid transfer lines from the 334 Tank Farm to the 333 Building were installed in the Pipe Trench. Rainwater collected in the sump trenches and the pipe trench drained to the pit.

The SubSite is Part Of:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: 618-2

Classification: Accepted

Names: 618-2; Solid Waste Burial Ground No. 2; 318-2

Reclassification: Interim Closed Out (12/28/2006)

Type: Burial Ground

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1954

Description: The site has been remediated and interim closed out. The burial ground contained three or four trenches running east-west. The largest trench was 54 meters (175 feet) long and 18 meters (60 feet) wide.

Location: The unit was located north of the 333 Building, on the north side of the 300 Area Exclusion Area.

Process Description: The site received solid waste from the 300 Area operations. This included waste from the 325 and 327 laboratory facilities, which began operations in 1953. A 1995 Ground Penetrating Radar survey found the northern most trench to be 49 meters (160 feet) long and 9 meters (30 feet) wide. The southern most trench was 55 meters (180 feet) long and 15 meters (50 feet) wide. The center trench was 54 meters (175 feet) long and 18 meters (60 feet) wide. The discrepancy of whether there were three or four trenches could be due to the fact that the geometry of the middle trench was broken into two pieces at the east end.

Waste Type: Equipment

Waste Description: The unit was used for disposal of uranium-contaminated equipment and materials, plutonium, and fission products. The uranium waste was typically solid metallic uranium oxides in the form of metal cuttings from Reactor Fuel Fabrication facilities in the 300 Area. The plutonium and fission products came from 300 Area laboratory facilities, that began to operate in 1953. The burial ground may also contain tin from the triple dip canning process and lead from the lead dip process.

In December 2004, during remedial excavation of this burial ground, a combination lock safe was unearthed. A plutonium contaminated cup, a one gallon jug containing liquid waste, a 250 milliliter flask and several metal cans were found inside the safe.

Closure Info: The cleanup verification package (CVP), CVP-2006-00010, has documented that remedial action objectives (RAOs) and remedial action goals (RAGs) for the site have been achieved as established for the industrial land-use scenario in the Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, (ROD), as modified by the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision (ESD), and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

Remedial action activities at the waste site initially began in November 2004 and were completed in August 2006. Excavation and load-out operations were suspended from December 2004 to December 2005, due to the discovery of higher than anticipated levels of plutonium-contaminated waste. Remediation involved excavation and removal of buried waste and contaminated soil. In-process radiological field screening was conducted during the site remedial actions to guide the excavation and quickly assess the presence and level of contamination. The radiological survey results indicated the presence of isotopes of uranium and plutonium, as well as cesium-137.

The buried waste consisted primarily of a wide variety of laboratory and construction-type debris. Excavation activities found no indication of bulk liquid waste disposal at this waste site. During the initial excavation phase, contaminated soil and debris were excavated from the burial ground and transported to a designated "stockpile" area for sorting and sampling. This staging pile area supported the 618-2, 618-3, and 618-8 Burial Ground excavations as documented in the CVP-2006-00010.

Excavated material consisted of contaminated soil and a wide variety of miscellaneous debris. Some Land Disposal Restriction (LDR) materials, (primarily lead solids) were identified among the debris and were subsequently segregated from the bulk soil and non-LDR debris, then designated for separate load-out as LDR material. After receipt of sample results confirming compliance with LDR restrictions, the stockpile material was loaded into ERDF containers and transported to ERDF for disposal. LDR materials that had been segregated for treatment were subsequently loaded-out and transported to ERDF under a separate waste profile.

Preliminary waste site contaminants of potential concern (COPCs) were identified in the 300 Area Remedial Action Sampling and Analysis Plan (SAP). Following excavation of the site, final contaminants of concern COCs were identified in the Closeout Plan for the 618-2 Burial Ground.

Final cleanup verification samples were collected on September 6 and 7, 2006, to confirm acceptability of residual contaminant concentrations in the soil. The COCs listed included: barium, cadmium, chromium, lead, tin, selenium, uranium (total), tritium (H-3), cobalt-60, nickel-63, strontium-90, cesium-137, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, plutonium-241, americium-241, uranium-233/234, uranium-235, uranium-238, and uranium (total).

Verification sampling events involved four decision units including a shallow zone, deep zone, overburden soil stockpile, and staging pile/decontamination pad footprint. Because the staging pile/decontamination pad supported the 618-2, 618-3, and 618-8 Burial Ground excavations, arsenic and silver were added as COPCs for staging pile/decontamination pad only. The site consisted of both a shallow and a deep zone decision unit.

The cleanup verification sample analytical data results were stored in the Environmental

Restoration database prior to archiving in the Hanford Environmental Information System. The data was also summarized in Appendix B of the CVP-2006-00010. The total excavated depth was approximately 6 meters (19.7 feet), with the shallow zone consisting of the excavation sidewalls to a depth of 4.6 meters (15 feet) and the deep zone consisting of the excavation sidewalls below 4.6 meters (15 feet) together with the floor of the excavation.

This cleanup verification package also demonstrated that the combined waste staging pile and decontamination pad area for the 618-2, 618-3, and 618-8 Burial Grounds do not preclude any future uses, as bounded by the rural-residential scenario, and provided for in the ESD and the RDR/RAWP and allow unrestricted use of shallow zone soils within this area. In consideration of this and because the waste staging pile area has no deep zone, no institutional controls are required at the waste staging pile location.

The remaining soil at the site has also been sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Institutional controls were required to prevent drilling or excavation into the deep zone. The waste site was verified to be remediated in accordance with the ROD and the ESD and may be backfilled.

Code:	618-3	Classification:	Accepted
Names:	618-3; Burial Ground #3; Dry Waste Burial Ground No. 3; Solid Waste Burial Ground No. 3; 318-3	Reclassification:	Interim Closed Out (9/5/2006)
Type:	Burial Ground	Start Date:	1/1/1954
Status:	Inactive	End Date:	1/1/1955
Description:	The site has been remediated and interim closed. Prior to remediation the site was fenced and posted with Underground Radioactive Material signs. The original surface dimensions were 107 meters (350 feet) long by 50 meters (165 feet) wide. An extension to the north end of the burial ground appeared on Drawings H-6-933 and H-6-939, lengthening the site by 15 meters (50 feet). A 1995 Ground Penetrating Radar survey indicated that this burial ground was dominated by one continuous north-south trending trench. Within the interpreted trench boundary, areas of debris were readily identified continuously covering an area of about 335 feet by 90 feet.		
Location:	The site was located north of the 300 Area Exclusion Fence, adjacent to and west of the 618-2 Burial Ground.		
Process Description:	This disposal site was first used in the summer of 1954. It received mostly contaminated waste from the remodeling of the 313, 303-J and 303-K Buildings and the construction of the 311 Facility.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The site consisted of uranium-contaminated waste, primarily building materials from the remodeling of the 313 Building. It may have also contained waste from the 303-J and K upgrades. In 1986, the volume of contaminated soil was estimated to be 12,549 cubic meters (443,160 cubic feet), with 12,643 cubic meters (446,480 cubic feet) of overburden.		
Closure Info:	The cleanup verification package (CVP) has documented that the waste site was remediated in accordance with the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (ROD) (EPA 2001), as modified by the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision (ESD) (EPA 2004). Remedial action objectives (RAOs) and remedial action goals (RAGs) for this site were documented in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).		

The Remedial Action Sampling and Analysis Plan (SAP) identified preliminary contaminants of potential concern (COPCs) in the 300 Area and contaminants of concern COCs for the waste site were identified in the Closeout Plan for the 618-3 Burial Ground. They included: uranium-233/234, uranium-235, uranium-238, uranium (Total), arsenic, barium, cadmium, chromium, lead, selenium, silver and uranium.

Soil cleanup levels were established in the ROD based on a limited ecological risk assessment. A comparison against ecological risk screening levels, although not required by the ROD, has been made for the site COCs. Screening values were not exceeded for the COCs for this site, with the exception of selenium and the total uranium detected in the biased sample results. Exceedance of screening values did not necessarily indicate the existence of risk to ecological receptors. It was believed that the presence of selenium at this site does not pose a risk to ecological receptors because concentrations of selenium were within the range of natural site background.

For the exceedance of uranium, the biased samples were taken from below the biologically active zone (a maximum depth of 2.7 meters [8.9 feet]) per Table 2-2 of the 100 Area Burial Grounds Focused Feasibility Study. As such, these concentrations of uranium will not be accessible to ecological receptors. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used as part of the final ROD for these sites.

Remedial action activities at the waste site were conducted from September 9, 2004, to October 28, 2004. Remediation activities were conducted in accordance with the RDR/RAWP. Remediation involved excavation and removal of buried waste and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. In-process radiological field screening was conducted during the site remedial actions. Field screening was used to guide the excavation to quickly assess the presence and level of contamination. The radiological survey results were consistent with the presence of uranium, at relatively low concentrations. There was no indication of additional radioactive contamination beyond the low levels of uranium.

The buried waste consisted primarily of a wide variety of construction-type debris. Excavation activities found no indication of bulk liquid waste disposal at this waste site. Land disposal restriction materials, primarily consisting of lead solids, were identified and separated from the bulk soil and debris during excavation and sorting operations. Sorting and sampling of the excavated soil and debris was performed in a designated staging pile area. This staging pile area supported the 618-2, 618-3, and 618-8 Burial Ground excavations and will be closed out with the 618-2 waste site. No overburden piles were created during the waste site excavation. All excavated materials were disposed at ERDF. A total of approximately 30,878 metric tons (34,037 U.S. tons) of material was removed and disposed at ERDF.

Final cleanup verification sampling was conducted on January 31, 2006, to confirm acceptability of residual contaminant concentrations in the soil. Based on the overall footprint of the area and depth of excavation, the site was classified as one shallow zone decision unit. The final verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency (EPA) analytical methods as required per the SAP.

The cleanup verification package has demonstrated that remedial action at the waste site has achieved the RAOs and corresponding RAGs established for the industrial land-use scenario in the ROD, the ESD, and the RDR/RAWP. The remaining soil at the site has been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. The waste site was verified to be remediated in accordance with the ROD and the ESD. This site has no deep zone; therefore, no institutional controls are required.

Code: 618-5	Classification: Accepted
Names: 618-5; Burial Ground No. 5; Regulated Burning Ground; 318-5	Reclassification: Interim Closed Out (7/12/2004)
Type: Burial Ground	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1962
Description: The site has been remediated and interim closed out.	
Location: The unit was located north of the 300 Area. It was north of the remediated 316-2 Pond and east of the 316-5 Process Trenches. The site was approximately 1.6 kilometers (1 mile) north of the Richland City limits.	
Process Description: The site received 300 Area waste from 1945 through 1962. The site was one large (single) pit. It was also used as a burn pit.	
Waste Type: Misc. Trash and Debris	
Waste Description: HW-39076 states the area was a burning trench as well as a storage area for aluminum silicate containing 17% uranium and bronze crucibles with radiation levels up to 200 mr/hr. The site was used for the disposal of uranium-bearing trash. Characterization test pits dug in 1992 encountered radiologically contaminated lead bricks, steel pipes, wood fragments and other garbage. Asbestos was found in Test Pit 2.	
Closure Info: Remedial action objectives and goals for the 618-5 Burial Ground were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These goals and objectives were based on industrial land use and are documented in the Record of Decision for the 300-FF-2 Operable Unit (ROD).	

Excavation operations were driven by remedial action objectives for removal of the burial ground contents as well as direct exposure limits, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals were established in the ROD and the Remedial Design Report/Remedial Action Work Plan for the 300 Area.

The COCs for the site were developed from historical information, process knowledge, and/or available characterization data as presented in the RDR/RAWP. Arsenic, cadmium, chromium, lead, and uranium were identified as the contaminants of concern (COCs) for statistical verification sampling based on the type and quantity of waste material encountered during excavation operations. Cleanup verification samples were collected and analyzed for the established COCs. The sample numbers and results are listed in Appendix A of CVP-2003-00021, the results have not been loaded into HEIS as of 8/16/04. Evaluation of verification sample results for the site indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met for industrial land use.

At the completion of field operations in 2003, the total excavation was approximately 8,110 meters squared (87,300 square feet) in area with a maximum depth of approximately 7.5 meters (24.6 feet) below the surrounding grade. Approximately 46,300 metric tons (50,930 tons) of bulk soil and debris were excavated from the site, put into adjacent staging pile areas, and subsequently transported to the Environmental Restoration Disposal Facility for disposal. Overburden material and excavated soil identified as potentially clean was stockpiled (below cleanup level soil stockpile) at the site for subsequent use as backfill material.

Historical information documenting operation of the 618-5 Burial Ground as a burn pit was consistent with the type and condition of waste observed during the excavation process. In addition to the major waste streams encountered, smaller quantities of asbestos, wood debris, intact bottles, dried paint, tar, and other items were unearthed in discrete areas of the burial ground. A detailed listing of waste unearthed from the burial ground and managed as no bulk material was maintained in the 300 Area project files (i.e., waste tracking sheet).

The CVP demonstrated that remedial action has achieved the cleanup objectives established in the ROD. Residual soil has been sampled, analyzed, and modeled. Results indicated that the site supports future land uses that can be represented (or bounded) by the industrial land-use scenario and poses no threat to groundwater or the Columbia River. Consequently, the 618-5 Burial Ground is verified to be remediated in accordance with the ROD and may be backfilled.

Because residual soil concentrations indicated that cleanup levels for more stringent land uses may have been achieved for the 618-5 Burial Ground, a supplemental evaluation was performed against the unrestricted land-use cleanup objectives established in the 300-FF-2 ESD. Results of the evaluation demonstrated that remedial actions at the site have achieved all of the objectives for unrestricted land uses. Consequently, no institutional controls are required at the site

Code:	618-7	Classification:	Accepted
Names:	618-7; Burial Ground #7; Solid Waste Burial Ground No. 7; 318-7	Reclassification:	Interim Closed Out (1/7/2009)
Type:	Burial Ground	Start Date:	1/1/1960
Status:	Inactive	End Date:	1/1/1973
Description:	The site has been remediated and backfilled with clean soil to adjacent grade elevations. The burial ground consisted of 2 east-west oriented trenches and one V-shaped pit. Before remediation, the burial ground was a vegetation-covered area, with patches of cobbles, surrounded by wooden poles and an 2.4 meter (8 foot) wire fence. A locked gate was located on the east side of the fenced area and was posted with Underground Radioactive Material signs.		
Location:	The site was located northwest of the 300 Area, west of Stevens Drive. It was 9 meters (29.5 feet) north of the Vitrification Test Site (site code 300 VTS).		
Process Description:	Most of the waste in this burial ground originated from the 313 and 333 buildings (operated by Douglas United Nuclear- DUN). Some waste was generated by the JA Jones, Battelle Northwest and Westinghouse companies, located in the 300 Area. Between 1962 and 1973, hundreds of drums of zircaloy chips (slightly contaminated with Beryllium) were disposed at this burial ground. The zircaloy chips are waste from the process of machining the ends of zircaloy clad fuel elements. They vary in size, but are generally 0.14 millimeters (4 to 5 mils) thick and 0.6 centimeters (0.25 inches) wide. The chips may be contaminated with beryllium and uranium. The material was considered to be pyrophoric and was placed in 114 liter (30 gallon) iron drums, filled with water. No records were kept to identify the exact quantities and locations of these drums. The practice was discontinued in June, 1973.		
Waste Type:	Equipment		
Waste Description:	Materials buried at this site were primarily from the 321, 313, 333, 3722 and 3732 Buildings. Miscellaneous contaminated equipment and hundreds of 114 liter (30 gallon) drums of zircaloy chips contaminated with moderate amounts of beryllium and uranium were buried in the trenches from 1960 to 1973. Since the zircaloy was considered pyrophoric, the drums were filled with water to avoid spontaneous combustion. It is highly possible the water has leaked out of the drums. It has been suggested the waste remain undisturbed to avoid oxidation. An		

explosive hazard may be present. Other low-level material, slightly contaminated with uranium and thorium, was also buried in the trenches. A 1972 memo states that from January through August 1972, 91 cubic meters (3024 cubic feet) of waste contaminated with uranium was placed in Burial Ground 7. It also states that during that same period, 55 cubic meters (1848 cubic feet) of thoria contaminated waste, 25 cubic meters (848 cubic feet) of thorium oxide and 30 cubic meters (1000 cubic feet) of non-radioactive beryllium contaminated waste was placed in Burial Ground 7.

Closure Info: The cleanup verification package (CVP) documents that remedial action at the 618-7 Burial Ground has achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAGs) as established for the unrestricted land-use scenario in the Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington, U.S. Environmental Protection Agency, Region 10, (ROD), the Explanation of Significant Differences for the 300-FF-2 Operable Unit Interim Record of Decision, U.S. Environmental Protection Agency, Region 10ESD (EPA 2004), and the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

Remedial action activities at the 618-7 Burial Ground began January 4, 2008, and were completed on November 15, 2008. Remediation activities were conducted in accordance with the RDR/RAWP and involved excavation and removal of buried waste and contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. In-process radiological field screening was conducted during the site remedial actions to guide the excavation and quickly assess the presence and level of contamination.

Waste encountered during excavation of the trenches was consistent with the types of material anticipated based on its reported use for disposal of contaminated equipment from the 300 Area Facilities and "hundreds" of drums of Zircaloy chips. A total of 117 drums containing Zircaloy and water-soluble oil were removed. Because these drums contained PCBs and other contaminants, they were sent to an off-site treatment facility.

Approximately 18,140 metric tons (20,000 US tons) of aluminum turnings and solids contained lead above land disposal restriction (LDR) levels and required solidification prior to disposal at ERDF. Aluminum turnings and aluminum rods from approximately 200 drums were mixed with soil and sent to ERDF. The contaminated vermiculite was also mixed with soil for disposal at ERDF. The bottles recovered from the 3 trenches (approximately 200) were emptied and the bottles were disposed at ERDF. The contents of the bottles were sent to an analytical laboratory for characterization prior to disposal.

All excavated materials were disposed at the ERDF with the exception of the radiologically contaminated oil and the Zircaloy which were sent for treatment and/or disposal at an approved facility.

The COCs/COPCs were based on site history, process knowledge, available characterization data, and visual observations during excavation. The initial list of COCs/COPCs for the 618-7 Burial Ground was identified in Appendix A, Table A-2, of the RDR/RAWP and in Appendix A, Table A-1, of the 300 Area Remedial Action Sampling and Analysis Plan (SAP). Observations of the type and quantity of material removed from the site and associated characterization sampling performed during the excavation process were used to develop an expanded list of COCs/COPCs for the verification sampling that included uranium-233/234, uranium-235, uranium-238, thorium-232, cesium-137, europium-152, europium-154, europium-155, lead, chromium, and beryllium. While not considered COCs/COPCs, arsenic, antimony, barium, boron, cadmium, cobalt, copper, manganese, molybdenum, nickel, selenium, silver, vanadium, and zinc were also evaluated by requesting the expanded inductively coupled plasma (ICP) metals analytical list.

Specific COCs/COPCs polycyclic aromatic hydrocarbons (PAHs), TPH, polychlorinated biphenyls (PCBs), and semivolatile organic compounds were included for focused samples at locations where drums of used oil were found. Ethylene glycol was added as a COPC for the focused sample collected at the location of the large tanks containing ethylene glycol in cooling coils, and pH was added as a COPC for the focused sample at the location of the tank containing sodium hydroxide found in the thoria trench.

Verification sampling was conducted between September and November 2008. The sampling covered a total of four decision units including the main trench, main trench expansion, thoria trench, and the drum handling area footprint. The main trench included both the north and middle trenches of the burial ground while the thoria trench covered only the south trench. The trenches were excavated to a depth of approximately 6 m (20 ft) but are considered shallow zone decision units for site closeout.

A main trench expansion sample area was added after an additional waste area was discovered on the southeast boundary of the main trench. Although located in the main trench, this area was considered as a separate decision unit as additional removal enlarged the boundary of the excavation. The final boundary of the expansion included a previously sampled area of the main trench. Both the previously sampled area and the newly excavated area were resampled as the main trench expansion decision unit. The four decision units and their respective required number of verification samples were presented in the Shallow Zones Sampling Plan in Appendix C of the CVP.

The contaminated materials from the site have been excavated and most have been disposed of at ERDF or at an approved disposal facility. A small amount of containerized waste is currently under contract for disposal at an approved facility. The remaining soil at the site has been sampled, analyzed, and evaluated. Results indicated that the site supports future land uses that can be represented (or bounded) by the residential land-use scenario and poses no threat to groundwater or the Columbia River. The entire site is closed to shallow zone criteria and, therefore, does not require any institutional controls.

Code: 618-8	Classification: Accepted
Names: 618-8; Early Solid Waste Burial Ground; Solid Waste Burial Ground No. 8; 318-8	Reclassification: Interim Closed Out (8/7/2006)
Type: Burial Ground	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1954
Description:	The site has been remediated and interim closed. The site originally consisted of a solid waste burial ground. Later, when a parking lot was constructed over the majority of the site the radiation monuments were cut down to grade. Medallions embedded in the asphalt then marked the location of the burial ground. The original footprint of the burial ground was expanded to the north in 1980. This area was delineated by post and chain. The site was posted as Underground Radioactive Material.
Location:	The site was located north of the 300 Area, beneath a portion of the 300 Area North Parking Lot (in the vicinity of Washington State Plane coordinates E 593820, N 116410) and an extended area north of the parking lot.
Waste Type: Construction Debris	
Waste Description:	The site is assumed to have been used for the disposal of uranium-contaminated solid waste from fuel fabrication facilities.
Closure Info:	The cleanup verification package (CVP) 2006-00006 documents that the waste site has been remediated in accordance with the Interim Action Record of Decision for the 300-FF-2

Operable Unit, (ROD) (EPA 2001) and has met the remedial action objectives (RAOs) and remedial action goals (RAGs) for this site for interim closure as established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP).

The waste site COCs (arsenic, barium, cadmium, chromium, lead, selenium, silver, uranium (total), uranium-233/234, uranium 235, and uranium-238) were identified in the 300 Area Remedial Action Sampling and Analysis Plan (SAP) and the Closeout Plan for the 618-8 Burial Ground.

Remedial action activities began on November 1, 2004, and were completed on November 8, 2004. Remediation involved excavation and staging of clean overburden material and removal of contaminated soil to the extent required to satisfy the RAOs and corresponding RAGs. Excavated material consisted of soil and a wide variety of construction-type debris. Load-out of the 618-8 stockpiled excavated material was completed on September 13, 2005. Approximately 6,462 metric tons (7,125 U.S. tons) of material from the site was removed and disposed at the ERDF.

Final cleanup verification sampling was conducted on January 31, 2006. The verification samples were submitted to offsite laboratories for analysis using approved U.S. Environmental Protection Agency analytical methods as required per the SAP. The analytical data are stored in the Environmental Restoration database prior to being transferred to the Hanford Environmental Information System and are summarized in Appendix A of the CVP-2006-00006.

Geophysical, ground-penetrating radar (GPR) surveys were performed in 1987 and additional characterization in 2002. These GPR surveys identified two distinct areas containing substantial amounts of buried waste in the areas located north of the parking lot (inside the area previously delineated by the "post and chain" boundaries). The GPR surveys could not identify a traditional trench configuration or evidence of buried waste under the area delineated by the medallions in the parking lot. Subsequent test excavations and trenching performed at the parking lot area did not expose any evidence of buried waste or debris in that area. A total of eight soil samples were collected from soil removed during the trenching and test excavations. These samples were analyzed for Resource Conservation and Recovery Act of 1976 metals and a wide range of radionuclides. Analytical results showed all results were either undetected or detected below lookup values. As a result, the area under the parking lot was not excavated further.

Site excavation and waste disposal are complete, and the exposed surfaces have been sampled and analyzed to verify attainment of the remedial action goals. Results of the sampling, laboratory analyses, and data evaluations for the site indicated that all remedial action objectives and goals for direct exposure, protection of groundwater, and protection of the Columbia River have been met for industrial land use.

Because residual soil concentrations indicated that cleanup levels for more stringent land uses may have been achieved for the site, a supplemental evaluation was performed against unrestricted land-use cleanup objectives established in the Explanation of Significant Differences for the 300-FF-2 Operable Unit Record of Decision. Results of the evaluation have demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils [i.e., surface to 4.6 meters (15 feet) deep]. In consideration of this and because the site has no deep zone, no institutional controls are required at the waste site.

Code: 618-9

Classification: Accepted

Names: 618-9; Dry Waste Burial Site No. 9; 300 West Burial Ground; 318-9

Reclassification: Closed Out (10/7/1998)

achieved the remedial action objectives (RAOs) and corresponding remedial action goals (RAOs) established for the unrestricted land use scenario in the Interim Action Record of Decision (EPA 2001), the Explanation of Significant Differences for the 300-FF-2 Operable Unit (EPA 2004), and the Remedial Design/Remedial Action Work Plan for the 300 Area (DOE/RL 2009b).

The contaminated materials from the site have been excavated and disposed at ERDF. The remaining soil at the 618-13 and 600-290:1 sites have been sampled, analyzed, and evaluated. Results indicate that the site supports future land uses that can be represented (or bounded) by the residential land-use scenario and poses no threat to groundwater or the Columbia River.

Both 618-13 and 600-290:1 waste sites are closed to shallow zone criteria and, therefore, do not require any institutional controls.

Code:	UPR-300-1	Classification:	Accepted
Names:	UPR-300-1; 307-340 Waste Line Leak; 316-1A; UN-300-1	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1969
Status:	Inactive	End Date:	1/1/1969
Description:	The site was a release to the soil in the area between the 307 Retention Basins and the 340 Building. There is no readily apparent sign of subsurface contamination beneath the gravel covered area.		
Location:	UPR-300-1 occurred in the soil between the 307 Retention Basins and the 340 Building in the 300 Area.		
Release Description:	A long-duration leak was discovered in the cast iron transfer line between the 307 Retention Basins and the 340 Vault. On December 9, 1969, operators experienced difficulty transferring retention waste from the 307 Basins to the 340 Vault. The next day the pump was tried again and it continued to work at reduced output. Eventually the pump was stopped when water appeared at ground surface between the basins and the 340 building. After stopping the pump, the area of the flooding was excavated and the bottom half of the Retention Basin transfer line adjacent to the junction of the transfer line with the Radioactive Liquid Waste Sewer (RLWS) line was found to be severely corroded. The corroded section of carbon steel pipe discharged approximately 900 curies of short-lived radionuclides (including 10 curies each of strontium-90 and cesium-137) to the soil column over a period as long as a year. Investigation suggested that the cause of the corrosion was RLWS waste backing up into the section of transfer line near the junction.		
Process Description:	The 307 Retention Basins are fed by the Retention Process Sewer (RPS) and discharge to the Process Sewer. In the event that effluent in the 307 Retention Basins does not meet release criteria for the process sewer, the waste is transferred to the 340 Tank vault for storage until it can be transported to the 200 Area Tank Farms.		
Related Sites/Structures:	UPR-300-1 was associated with the 340 Building/307 Retention Basins transfer line, and the Radioactive Liquid Waste Sewer (RLWS). Well 399-3-8 is also associated with this site. This well was drilled through the middle of the contamination to determine if the plume had reached groundwater in 1970. Review of the site shows that this well has been "missing" for some time. Numerous drawing searches have been performed, aerial photographs have been reviewed, a geophysical study was performed, and site personnel have been interviewed in attempts to locate and determine what happened to the well. The presumed location of the well coincides with the location of RLWS valve box number 8. Construction of valve box		

number 8 took place in 1970, the last date of well sampling. It is possible that construction activities disturbed the well. Thus, it is possible that the well casing was cut off below grade, or completely removed.

Waste Type: Process Effluent

Waste Description: The waste discharged to the soil column consisted of process effluent contaminated by transuranic fission products including 900 curies of short-lived radionuclides (mainly promethium-147) and 10 curies each of strontium-90 and cesium-137.

Code: UPR-300-2

Classification: Accepted

Names: UPR-300-2; Releases at the 340 Facility; UN-300-2; UN-316-2

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date:

Description: The site appears to be multiple releases from ongoing decontamination and waste handling activities starting in January 1954.

Location: UPR-300-2 affected the soil within 3 to 6 meters (10 to 20 feet) of the north, east, and south walls of the 340 Building.

Release Description: Several leaks have occurred that contributed significant amounts of radioactivity to the soil around 340 Building. Soil contamination that extends several feet down adjacent to the 340 Building south wall suggests that the sump (truck tanker loadout) overflowed during the tanker truck era. Strontium-90 has been identified in the soil. The short-lived radionuclides are gone, and the ground surface is stabilized. However, contamination is known to extend several feet into the soil. In the same vicinity, a drain was exposed to allow the draining of tanker trucks for maintenance on the tanker valves. Minor leakage occurred around the drain pipe. This area is also covered and stabilized, but contamination is known to extend several feet into the soil.

A major leak on a retention waste line was discovered December 9, 1969 (See WIDS Site UPR-300-1). The last known ground contamination found in the same area occurred during the V-659 project on October 31, 1977. A leaking tee on the 15.2 centimeter (6 inch) radioactive liquid waste line had gone undetected until the line was uncovered (See WIDS Site UPR-300-11). Known contamination is also present on the north side of the vault. The most affected area is near the northwest corner of the vault (near the control room). A HEPA filter in the vault exhaust system was located there, and condensation from the vault atmosphere collected in the filter enclosure and dripped on the ground. The condition was corrected with the V-677 project, and the surface soil was removed. A potential for low level nuisance contamination is present in the yard, especially downwind (east-northeast) of known problem areas. A systematic search was made for this contamination in 1979, and none was found. Soil samples were taken and surface surveys were made.

Process Description: The 340 facility was completed in 1953 along with the initial Radioactive Liquid Waste Sewer (RLWS) piping system, the 307 Basins and the Retention Process Sewer (RPS) piping system. These systems represented an attempt to deal with radioactive effluents from several new laboratories in a modern, controlled manner. The 340/307 system was fed by pipelines from the 325, 326, 327, and 329 Buildings (and later the 308 and 325 Buildings) in a system known as the Retention Process Sewer(RPS) or the Diversion Waste System. Liquid process wastes that had the potential to be contaminated were disposed to the RPS and routed to the 307 Basins for sampling. If radioactivity was not detected above release limits, these wastes were disposed to the 307 Trenches. If levels proved to be above release limits, the effluents were pumped into the 340 Building RLWS tanks.

Related Sites/ Structures: UPR-300-2 is associated with 340 Building processes.

Waste Type: Process Effluent

Waste Description: 10 millicuries of cesium-137 is provided in the original source document and is designated as an estimate only. It is unknown if this was related to a single event or all events over the time period (1954 to date).

Code: UPR-300-4

Classification: Accepted

Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1955

Description: The site is the soil beneath and south of the 321 Building. The site represents a number of releases that occurred from 1945 to 1988. This time period covers the development of the REDOX, PUREX processes, and numerous other pilot operations. No specific occurrence reports have been identified. The true extent of the soil contamination is unknown. However, an area approximately 30.5 meters by 30.5 meters by 6.1 meters deep (100 feet by 100 feet by 20 feet deep) is an estimation of the extent of the contamination.

Location: UPR-300-4 is located beneath and south of the 321 Building.

Release Description: Uranium contamination has been associated with the canyon and basement shop areas from the beginning. General contamination of the canyon walls, decks, and ground areas around the building is associated with separation plant pilot operations that were set up and tested in the canyon area. Best records indicate that PUREX pilot plant operations utilized uranyl nitrate/thorium solutions. This accounts for significant detectable uranium contamination etched into the concrete of the canyon walls and on cranes, decks, and overhead areas. Modification of the facility over the years required cleaning and painting to contain the activity. However, drilling or otherwise breaching most surface area will release residual uranium/thorium contamination. Rumors of the use of small quantities of plutonium in the early operations has not been substantiated. There are no analytical data to support these statements. More recent history (radiation surveys) indicates that contamination in and around 321 and 321-A (323 Building) is significant and extensive. Excavation inside the canyon area for the HEDL (FFTF) Hydraulic Core Mock-UP (HCM) uncovered higher concentrations of uranium waste than had been previously reported. A yellow substance (presumably uranyl nitrate) that measured 20 millirad per hour extended 4.6 - 6.1 meters (15 - 20 feet) under the canyon floor and beyond. Cleanup stopped at the depth needed for the HCM. Excavation south of the building has also uncovered significant quantities of uranium contamination (25 millirad per hour) covered over with 0.9 - 1.2 meters (3 - 4 feet) of backfill. A manhole between 321 and 321-A (323 Building) read approximately 75 millirad per hour. Specific contamination events in the 321 Building included a large explosion of a hexone/nitric acid mixture on January 23, 1949. The explosion occurred in E-Cell when a spark from an electric motor being used to test a turbine pump bearing arced through the air and touched off the mixture. The actual volume was only about 20 gallons of liquid in a 55 gallon drum. The explosion spread uranium powder and solution throughout the canyon and lifted the roof because there were no blow-out panels in the building. Ceilings and floors cracked, but the hard concrete walls did not. The aqueous makeup room in the north portion of the building and the back/south dock that held building process solutions were severely jarred by the event, and some chemicals and process solutions splattered and spilled. An entire drum of uranyl nitrate hexahydrate flew through the air on the back dock, spilling its contents. The cleanup consisted of large and repeated water flushings that spread the contamination to surrounding soils and to the Process Ponds. Other contamination events in the 321 Building included an explosion and resultant fire in dissolver

vessel A-5, in A-Cell in May 1957. The vessel contained enriched (0.95% uranium-235) uranyl nitrate solution. In January 1962, a concentrator experienced overpressurization and sprayed uranyl nitrate hexahydrate as far as the roof of 3706 Building. A release of iodine-131 both within the building and out of the stack occurred during a chlorine gas-scrubbing experiment in 1964. There were many smaller leaks and contamination incidents in addition to these more serious events. A 1988 exterior contamination survey of the 321 Building found several areas of fixed contamination, including flaking exterior paint chips reading 150,000 disintegrations per minute beta/gamma and 25,000 disintegrations per minute alpha, attributed to "pre PUREX R&D radiological chemical separation operations." To control this contamination, the structure was painted in 1990. Loose, smearable contamination was found during a routine survey of the building's interior in 1991, again attributed to "residual" remains from past operations.

Process Description: Originally, the 321 Canyon, administration offices, and shops provided support for the 300 Area Laboratory programs dedicated solely to production reactor fuel development. The facility was supported by the analytical control laboratories (3706 Building). Over time, the mission of the facility changed to support other test activities and operations. The 323 Building was originally 321-A and provided feed storage in below grade tanks and lay down space and storage above grade. Four stainless steel tanks, approximately 14.6 meters long by 3.05 meters in diameter (48 feet long by 10 feet in diameter) located under the 323 Building contain uranium/thorium sludge. The tanks are filled with water to reduce corrosion of the tanks. Total quantities of radionuclides and tank volumes are unknown. Reference Drawing H-75032 has details on tank locations, size and elevation. An access door is located in the northeast corner of 323 under a stairwell. Building 323 also contains a shielded cell used for stress analysis of various irradiated fuel cladding materials. Stringent contamination control measures were applied for specimens prepared in 327 Building and transferred to 323. No significant problems have been associated with shielded cell. However, the exhaust duct, primary HEPA filter and downstream exhaust fans and filter plenum located on the south side of 323 have a potential for low level mixed fission product and activation product contamination.

Related Sites/ Structures: This site is associated with the 321 Building and possibly 323 (321-A) Building. Five miscellaneous streams are documented around the 321 Building in the "Inventory of Miscellaneous Streams", Revision 3. These sites are identified in WIDS as site codes 300-81 through 300-84 and 300-92.

Waste Type: Process Effluent

Waste Description: Wastes and contamination in and around the 321 Building are very extensive. They include all of the components of the many chemical processes tested in this facility over the years and result from both waste management practices and from unplanned contamination events and accidents. Components of the bismuth phosphate process included many acids (nitric, phosphoric, hydrofluoric, oxalic, and others), bismuth nitrate, sodium dichromate, potassium permanganate, calcium, lanthanum and sodium fluorides, ammonium fluosilicate, peroxide, sodium hydroxide, and other substances. Components of the REDOX process and its development include methyl isobutyl ketone (hexone), aluminum nitrate, ammonium nitrate, many acids (including nitric, sulfuric, oxalic, and others), ferrosulfamate, sodium hydroxide, mercury, resins and other substances.

Components of the Metal Recovery process and the PUREX process were quite similar to each other and included tri-butyl phosphate, normal paraffin hydrocarbon, acids (including nitric, oxalic, and others), ammonium fluoride, ammonium nitrate and other substances. The RECUPLEX process used tri-butyl phosphate, carbon tetrachloride, many acids (including nitric, oxalic, hydrofluoric, and others), sodium fluoride, sodium hydroxide, and other substances. All of these chemicals became waste constituents, along with trace isotopes of plutonium, uranium, thorium, strontium, cesium, aluminum, iron, copper, and zinc. Additionally, cell and equipment decontamination reagents, cleansers, and drying materials,

including carbon tetrachloride, trichlorethylene, acetone, A-butanone, and many commercial products, became a part of the 321 waste stream.

Because the 321 Building was a pilot plant, the Building's mission changed a number of times. These mission changes altered the potential contaminants that may have contributed to the soil contamination. Listed below are some of the mission changes and potential contaminants.

When the original hot laboratory facilities in the A and B Cells of T Plant had been disassembled to make room for a radioactive lanthanum production mission, some of the testing with higher activity radiochemical solutions was initiated in the 321 Building. These tests continued until 'C' Plant (Hot Semi-Works) was constructed in the 200 East Area in 1949.

Subsequent defense production expansions from 1950 to 1955 generated the development of the Uranium Plant Metal Recovery process, the PUREX process, and the reclamation of uranium and plutonium by extraction (RECUPLX) process. Pilot scale developmental testing using low activity solutions for all of these processes was conducted in the 321 Building. Reduction-oxidation process improvement trials, including mercury-catalyzed dissolving studies, also were conducted during this period.

Beginning in the late 1950's, in response to orders from the National Aeronautics and Space Administration (NASA) and from hospitals and medical laboratories and research centers, chemists embarked on the development of several pioneering methods of extracting high-heat isotopes from high level nuclear waste. Among the most prominent isotopes extracted were strontium-90, cesium-137, cerium-144, promethium-147, and neptunium-237. At one time in the 1960's, Hanford was the only producer in the world of promethium-147, a rare earth extract that was used in the development of the artificial heart. Extraction of these isotopes was accomplished by ion exchange, solvent extraction, carrier precipitation, and other means. Many of the pilot scale development tests for these extractions were conducted using tracer level waste solutions. During the 1950's and 1960's, several attempts were made to produce uranium-233 from thorium. These processes used chemical separation of various forms of thorium target fuel elements (powders, pellets, wafers, with many oxide blends) after irradiation.

A general cleanup of the building during 1946 to 1947 revealed radioactive material in lead sink traps of cold areas and maximum readings of 50,000 disintegrations per minute in other building locations. During January and February of 1947, a total of nearly 800 micrograms of plutonium was flushed from the inside of process lines and tanks in the 321 Building. Late that year, a large disposal of uranyl nitrate hexahydrate solution to the 300 Area Process Pond spiked radioactivity readings in that pond so high that a decision was made to build the special 321 Cribs to contain uranium bearing 321 Building solutions. By April 1948, 321 Building operations had discharged 238 pounds of uranium to the 300 Area Process Pond. Early that year, building modifications revealed plutonium contamination in the concrete of sampling boxes in cold areas of the canyon, and readings up to 45,000 disintegrations per minute (alpha) were discovered in sludge inside tank 1-AU.

Solid radioactive and chemical wastes from the 321 Building were buried in all of the various burial grounds used in the 300 Area (with the possible exception of 618-9). Nitrous oxide fumes from bismuth phosphate process tests and fission gases including iodine-131 from all separations processes tests escaped from the 321 Building stack.

The Following Sites Were Consolidated With This Site:

Code: 300-81

Names: 300-81; 321 Building Steam Condensate; Miscellaneous Stream #370

Code: 300-82

Names: 300-82; 321 Building Steam Condensate; Miscellaneous Stream #371

draped over the waste line. Smears of the area showed that alpha contamination was also present. At a depth of approximately 7.6 meters (25 feet), contamination spread laterally in an interface between the undisturbed soil and backfill.

Process Description: While in service, the Retired Radioactive Liquid Waste Sewer (RRLWS) system transferred liquid waste from laboratories and facilities in the 300 Area to the 340 Complex for sampling and disposal.

Related Sites/ Structures: UPR-300-11 is associated with a flanged "tee" connecting the east and west legs of the Retired Radioactive Liquid Waste Sewer (RRLWS) to the 340 Facility. Analysis of the contamination below the "tee" suggested the effluent was derived from 325-A building processes.

Waste Type: Process Effluent

Waste Description: Soil samples collected near the broken pipe were analyzed and yielded concentrations of 0.2 strontium-90, 0.24 europium-155, 0.09 cerium-144, 0.0017 plutonium-239 and 240, and 0.014 americium-241 and plutonium-238 (all microcuries per cubic centimeter). Approximately 1 curie of contamination was left in place.

Code: UPR-300-12 **Classification:** Accepted

Names: UPR-300-12; Contaminated Soil Beneath the 325 Building; UN-300-12 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1979

Status: Inactive **End Date:** 1/1/1979

Description: The site was an unplanned release to the soil under the floor on the east side of the 325-A Building.

Location: UPR-300-12 occurred in the basement floor of the 325-A Building. The waste migrated through cracks in the floor to the soil beneath the building.

Release Description: On January 8, 1979, a Pacific Northwest Laboratory (PNL) supervisor located in the 325-A building notified the Westinghouse 340 facility supervisor that approximately 15,140 liters (4,000 gallons) of contaminated liquid needed to be transferred from tank WT-1. Shortly before 1600 hours, the transfer began utilizing a steam jet pump. The jet pump had ran all night and was still operating the next morning. The liquid level on tank WT-1 located indicated decrease approximately 15,140 liters (4,000 gallons) had been transferred. However, the 340 facility reported they had not received the liquid waste. An investigation of the Radioactive Liquid Waste System line-up revealed that an isolation valve on the discharge line, outside the building, was shut, thus precluding discharge of the water to the storage and retention tanks at the 340 Building. The valve was opened and a rush of water was heard. However, the 340 facility storage tank revealed only a negligible amount of water. The 325-A Building was examined for the presence of waste water. Water was noticed on the floor of Room 50-A. No other unexplained volumes of water could be found in 325-A Building. The discharge stop valve for 325-A Building was opened and residual water in the combined drain line allowed to gravity drain to the 340 Building waste storage complex. Tank levels were rechecked and verified that approximately 11,355 liters (3,000 gallons) of low level radioactive water could not be accounted for. A test was initiated in Room 50-A that wetted the floor with 265 liters (70 gallons) clean water. It was estimated that over 189.25 liters (50 gallons) flowed into the confluence of the wall and floor, primarily along the northern and eastern walls. It was the consensus of opinion from all interested parties that the subject water flowed down the drain line, through the sump pump discharge line, into the sump and thence to the floor where it exited through existing cracks to the soil. The floor of Room 50-A in the 325 Building was core drilled to obtain a sample of the earth below the floor. The earth was analyzed to determine if

radionuclides present in the soil matched the material that was transferred from the 325-A Building on January 8 and 9, 1979.

Process Description: The 325 Radiochemistry Building was built to safely house and handle multi-curie level chemical development work with high activity substances. The High-Level Radiochemistry addition, with its three larger hot cells, housed several pioneering "isotope campaigns??. A number of new techniques developed in the 325 Building separated or fractionized specific isotopes from high-level waste by ion exchange, carrier precipitation, solvent extraction, and various combinations of these and other methods. In addition, studies that were part of a Nuclear Waste Vitrification Project took place in the Hot Cells from 1977 to 1980.

Related Sites/ Structures: UPR-300-12 was associated with the WT-1 Tank, 325 Sump Tank, 325 Overflow Tank, Room 50-A in the 325-A Building and the 340 Complex.

Waste Type: Process Effluent

Waste Description: The site received radioactive rinse water overflow containing nitrate ions, promethium-147, fission products, and transuranic nuclides. The total activity in the rinse water was estimated to be 70 Curies, of which 95% was promethium-147. The rinse water contained nitrate ions, promethium-147, fission products, and transuranic radionuclides. Nitrate ions, but no radionuclides, were detected in samples taken from a nearby groundwater monitoring well. PNL (Occurrence Report #79-2) reports that coring through the cement floor of Room 50-A and sampling of the soils below was completed on January 26, 1979.

Code: UPR-300-17

Classification: Accepted

Names: UPR-300-17; Metal Shavings Fire; UN-300-17

Reclassification: Interim Closed Out (6/28/2010)

Type: Unplanned Release

Start Date: 1/1/1979

Status: Inactive

End Date: 1/1/1979

Description: The release site was the asphalt area at the southeast corner of Building 333. The site is not marked or labeled in the field, and its location is not apparent. The site falls within a "Radiologically Controlled Area" that surrounds the 333 Building on its north, south and east sides. The asphalt and concrete at the southeast corner of 333 are painted gray and labeled "Fixed Contamination Area." The unpainted asphalt east of the "Fixed Contamination Area" is old and cracked. There is no clear indication where the asphalt was replaced in 1979. East of the unpainted asphalt area, there is a fire hydrant and an automatic sprinkler valve surrounded by gravel and broken asphalt and concrete. Even further east, there is an expanse of gravel. East/northeast of the southeast corner, there is a large "Contamination Area." An approximately 0.6 meter (24 inch) diameter metal manhole is located in the "Fixed Contamination Area." It is unlabeled except for a "Confined Space" sign. In the asphalt area east of the "Fixed Contamination Area," there is an approximately 0.4 meter (16 inch) diameter drain with a metal grate and an approximately 0.6 meter (24 inch) diameter metal manhole with perforations. The 0.4 meter (16 inch) drain is labeled "Radioactive Material, Internally Contaminated." The 0.6 meter (24 inch) metal manhole is labeled "Sewer" and "Danger, Limited Access/Confined Space."

Location: UPR-300-17 was confined to the asphalt area at the southeast corner of Building 333.

Release Description: The release occurred on September 2, 1979, when a garbage can containing oily rags and other waste material caught fire. Rain caused metal shavings, which were believed to be uranium, in the can to ignite. The can was inside a plastic-lined wooden burial box, which also caught on fire. Smoke from the fire contaminated a propane tank located about 3.0 meters (10 feet) away to 500 counts per minute, a forklift about the same distance away to 700 counts per minute, and a 15.2 meter (50 foot) piece of fire hose to 1500 counts per minute. The ground about 0.6

meters (2 feet) from the wooden burial box was contaminated to 15,000 counts per minute for approximately 1.2 meters (4 feet). Contamination was limited to the ground around the wooden burial box, with a radius of approximately 3 meters (10 feet).

Related Sites/ Structures: The site was adjacent to the 618-1 Burial Ground.

Waste Type: Chemicals

Waste Description: The waste consisted oily rags and other waste material, including what was believed to be uranium shavings.

Closure Info: The Remaining Sites Verification Package, (RSVP-2010-014), has documented that the site has achieved the remedial action objectives and the corresponding remedial action goals established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area and the Interim Action Record of Decision for the 300-FF-2 Operable Unit (EPA 2001). Verification sampling results have supported a reclassification of the waste site to Interim Closed Out.

Remediation of the waste site was performed from May 5 through May 11, 2009. Approximately 445 metric tons (490 US short tons) of concrete, asphalt, and soil were removed. The soil within the waste site footprint was excavated to a depth of 1 m (3 ft) below ground surface, and the resulting 195 bank cubic meters 255 bank cubic yards of soil was disposed at the Environmental Restoration Disposal Facility.

The COPCs for the site were identified based on the site location and types of material that caught fire, causing the release that occurred on September 2, 1979 at the site. Uranium was listed in the 300 Area Remedial Action Sampling and Analysis Plan (SAP) as the sole COPC; however, based on the site's proximity to the 333 Building and further site evaluation, the COPCs for verification sampling included radionuclides that evaluated using laboratory analytical methods for gamma-, beta-, and alpha-emitting radionuclides; polycyclic aromatic hydrocarbons (PAH); the expanded analyte list for the inductively coupled plasma (ICP) metals; total petroleum hydrocarbons (TPH); and PCBs.

On July 27, 2009, radiological field screening for beta and gamma activity was conducted following the site remedial action to confirm that waste site excavation was complete.

The excavation was performed to remove the fixed contamination area composed of painted or unpainted asphalt and concrete. Also, the excavation for the 618-1 waste site remediation extended into and below the eastern portion of the WIDS boundary for the UPR-300-17 waste site. The area excavated as part of the 618-1 waste site is therefore excluded from the UPR-300-17 waste site remediation scope and was closed out as part of the 618-1 waste site scope CVP-2010-00001.

The results of verification sampling show that residual contaminant concentrations have met human health direct exposure cleanup levels for industrial land use in the shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The waste site does not have a deep zone or residual contaminant concentrations that would require any institutional controls to prevent uncontrolled drilling or excavation.

Code: UPR-300-38	Classification: Accepted
Names: UPR-300-38; 313 Slab; Demolished 313 Building Foundation; Soil Contamination Beneath the 313 Building	Reclassification: None

Type: Unplanned Release**Start Date:****Status:** Inactive**End Date:**

Description: The 313 building was demolished in 2004 and the foundation/slab was left in place. The site consists of the contaminated soil beneath the 313 Building, as well as the foundation. The contamination resulted from multiple unplanned release events. The full extent of contamination will not be determined until the 313 Building foundation has been removed. Note: WIDS Site UPR-300-38 associated with this area. All of the RCRA/CERCLA releases identified for the soils in this area will be addressed as part of UPR-300-38. Also see WIDS Site UPR-300-44 which involved a leak in a section of the process sewer line that was detected in January 1985. This leak in the process sewer line downstream from the 313 URO could have allowed uranium-bearing waste spills to have reached the ground beneath the process sewer. Also see WIDS Site UPR-300-45, a waste transfer line leak to the pipe trench between the 313 URO and the 303-F Building. Because the pipe trench bottom has holes in it, this site leaked to the soil column.

Location: The soil contamination is beneath the southern half of the 313 Building. The 313 Building is located at the north end of the main 300 Area (within the security fence). It is located north of Ginko Street, east of the 303K, 305, and 314 Buildings, and west of the 3712 and 3720 Buildings.

Release Description: Unplanned release site UPR-300-38 represents the area of soil contamination beneath the southern half of the 313 Building. Because of a general failure of the process sewer line beneath the building, any discharges into the process sewer may have contributed to the contamination.

In the early 1970's, during floor repairs in the 313 Building, liquid was observed flowing over the acid brickwork installed beneath the concrete floor. The liquid was collected and processed through the uranium recovery operation. Some of the subfloor was removed and replaced. According to site personnel, the pipe trench (which runs east to west) and the filter press were lined with stainless steel after the spill. The sump in this trench which leads to the process sewer has been grouted.

Related Sites/Structures: The contamination is associated with releases from the 313 Uranium Recovery Operations (WIDS Site 313 URO) and the 300 Area Waste Acid Treatment System (300 WATS).

Waste Type: Chemicals

Waste Description: Materials released to the soil beneath the building may have included uranium-bearing acid (nitric and sulfuric acid with uranium in solution), neutralized acid waste (typically sodium fluoride, sodium nitrate, sodium dichromate, and sodium sulfate in solution with precipitates of uranium, chromium, copper and zirconium), etch acids (nitric, hydrofluoric, sulfuric, and chromic acids), tetrachloroethene (perchloroethylene), sodium hydroxide solutions, and contaminated water.

The Following Sites Were Consolidated With This Site:

Code: UPR-300-44

Names: UPR-300-44; Uranium Bearing Waste Etch-Acid Spill; 313 Building; UN-300-44

Code: UPR-300-39

Classification: Accepted

Names: UPR-300-39; Sodium Hydroxide Leak at 311 Tank Farm; UN-300-39

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1954

Description: The release site was to the soil adjacent to the caustic storage tanks in the 311 Tank Farm. The

two sodium hydroxide (NaOH) tanks are currently labeled "Empty." The location and extent of the release is not discernible in the field. The ground around the two tanks is covered by a concrete containment, that is surrounded by more concrete and gravel. The concrete containment is not marked or labeled in any way to warn about excavating in the area.

Location: UPR-300-39 occurred in the soil adjacent to the caustic storage tanks in the 311 Tank Farm, which is located between the 303-F and 303-G Buildings.

Release Description: An unplanned release occurred in the 311 Tank Farm when one of two 37,850 liter (10,000 gallon) sodium hydroxide tanks leaked. A 50 percent sodium hydroxide solution contaminated soil around the tanks.

Process Description: The 311 Building and Tank Farm were constructed to distill methanol for re-use. They operated until 1971 when the last single-pass reactor closed at the Hanford Site. The 311 Building and 311 Tank Farm wastes consisted of chemical spills and leaks (primarily methanol, trichloroethylene and perchloroethylene).

Related Sites/ Structures: UPR-300-39 was associated with the caustic storage tanks in the 311 Tank Farm.

Waste Type: Chemicals

Waste Description: The waste consisted of caustic solution containing 50 percent sodium hydroxide solution.

Code: UPR-300-40 **Classification:** Accepted

Names: UPR-300-40; Acid Release at the 303-F Pipe Trench; UN-300-31; UN-300-40; UPR-300-31 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1974

Status: Inactive **End Date:** 1/1/1974

Description: The release site was to the soil between the 311 Tank Farm and the 303-F Building.

Location: UPR-300-40 occurred in the soil between the 311 Tank Farm and the 303-F Building.

Release Description: In October 1974, broken drain connections between the pipe trench, the 303-F Building, and the process sewer were discovered. The bottom of the trench was severely eroded, indicating that a spill had occurred. The trench floor is still contaminated. The total volume of spilled material is unknown; however, evidence of uranium contamination in the soil has been found.

Process Description: The 303-F and 303-K Buildings were upgraded in 1954 as part of the project 313 Building expansion and the construction of the 311 Tank Farm. The 303-F Building served as a chemical makeup facility for the solutions (mostly acids) used in the aluminum cleaning, stripping, and anodizing processes performed in the 313 Building. In 1973, it became the pumping facility for the 300 Area Waste Acid Treatment System (WATS) operations. The waste acids treated in the WATS operation included nitric, sulfuric, hydrofluoric, and chromic-nitric-sulfuric acids bearing uranium, Zircaloy-2 components, copper, beryllium, and other fuel fabrication materials.

Related Sites/ Structures: UPR-300-40 was associated with the drain connections between the 303-F Building and the process sewer.

Waste Type: Chemicals

Waste Description: The waste consisted of uranium-bearing acid waste containing nitric and sulfuric acid with uranium in solution and chromic acids with copper and zinc in solution.

Code: UPR-300-41 **Classification:** Accepted

Names: UPR-300-41; 300 Area #340 Building
Phosphoric Acid Spill; UN-300-41 **Reclassification:** Closed Out (2/24/1999)

Type: Unplanned Release **Start Date:** 1/1/1986

Status: Inactive **End Date:** 1/1/1986

Description: The release involved asphalt and soil in the 340 Complex yard. Facility personnel do not know the exact location of the spill.

Location: UPR-300-41 occurred approximately 4.6 meters (15 feet) west of the 340 Building.

Release Description: Three drums allegedly containing nitric acid were received from Battelle for use in a charcoal filter efficiency test on April 17, 1986. On June 3, 1986, one of the drums was found to have failed. Approximately 113.6 liters (30 gallons) of liquid had contaminated part of an asphalt pad and an area of soil next to the pad. The drum was labeled "Sulfuric Acid." The initial clean up involved using sodium bicarbonate and water to neutralize the acid. The spill area did not respond to the clean up method so a sample of the spilled liquid was analyzed. The results indicated the spilled material was phosphoric acid, with high concentrations of chromium, manganese, iron, and nickel in solution.

Related Sites/ Structures: UPR-300-41 was associated with an asphalt pad west of the 340 Building.

Waste Type: Chemicals

Waste Description: A detailed analysis on a sample taken from the leaking drum showed the released liquid consisted of phosphoric acid containing 14,000 parts per million chromium, 1,900 parts per million manganese, 1,700 parts per million iron, and 400 parts per million nickel.

Closure Info: The spilled material was neutralized, absorbed and packed into drums. Contaminated soils were excavated and placed in drums for disposal. The asphalt pad was cleaned. Cleanup was judged to be complete when the concentration of chromium in soil samples was less than 5 parts per million.

Institutional control (IC) information has been revised as directed by the U. S. DOE letter, 05-AMRC-0078, 1/4/05, following a review of the Institutional Controls (ICs) in the WIDS. Some 300 Area sites, including this one, were closed out before CVP documents were in use, and close-out information was documented in waste site reclassification forms. No ICs were identified for these sites at the time of closeout, however the DOE determined that further evaluation of ICs would be needed before making a final decision on the appropriate ICs to implement. Until a final Record of Decision is approved for this site, tentative ICs based on the remedial action and location for this and similar sites in the DOE letter have been determined judgmentally.

Code: UPR-300-42 **Classification:** Accepted

Names: UPR-300-42; 300 Area Powerhouse Fuel Oil
Spill; UN-300-42 **Reclassification:** Interim Closed Out

Type: Unplanned Release **Start Date:** 1/1/1983

Status: Inactive **End Date:** 1/1/1983

Description: This release is not visible. The release was an overflow of Number 6 fuel oil onto the ground adjacent to the Number 2 Day Tank, an underground storage tank. The surface area around the day tanks was paved with asphalt. During the demolition of the below-grade structures associated with the 384 Building in 2009-2010, shallow dark, stained soil was encountered near

Names: UPR-300-46; Contamination North of 333 Building **Reclassification:** Interim Closed Out (8/20/2010)

Type: Unplanned Release **Start Date:** 1/1/1989

Status: Inactive **End Date:** 1/1/1989

Description: The release site was a layer of radioactively contaminated soil found during a pipe trench excavation. There is currently no visual evidence of the release. The area is not marked or posted. The gravel east of the telephone pole along the north perimeter fence appears to be slightly newer than other gravel in the vicinity.

Location: The release site was an area of soil inside the 333 building fence. It occurred east of a telephone pole at the north end of the 333 facility property.

Release Description: On June 21, 1989, radioactively contaminated soil was discovered while excavating a pipe trench north of the 333 Building. The contamination appeared to be confined to a narrow band of soil approximately 2.5 to 5 centimeters (1 to 2 inches) thick.

Related Sites/ Structures: UPR-300-46 was associated with the 333 Building and a french drain known as Miscellaneous Stream #455 (See WIDS Site 300-109).

Waste Type: Process Effluent

Waste Description: The contaminated soil was analyzed, and it was determined that the soil did not contain any significant quantities of hazardous chemicals. The truck load of contaminated soil was disposed of as low-level waste. The contamination was likely caused by a spill of Uranyl Nitrate.

Closure Info: CG 300-109 and UPR-300-46 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP-2010-00004) has documented that the 300-109, 333 Building Stormwater Runoff waste site and UPR-300-46, Contamination North of 333 Building waste site have met the rural-residential scenario remedial action objectives (RAOs) established in the Remedial Design Report/Remedial Action Work Plan for the 300 Area (RDR/RAWP) and the Interim Action Record of Decision for the 300-FF-2 Operable Unit, (ROD) (EPA 2001). The evaluation shows that the sites have been successfully remediated and that there are no residual hazardous/dangerous materials present above the RAOs in the soil. Therefore, the 300-109 and UPR-300-46 waste sites are protective of human health, groundwater, and the Columbia River.

Remediation of the 300-109 waste site was performed from April 28 through April 29, 2009. The soil and asphalt within the waste site footprint were excavated to an average depth of 2.6 m (8.5 ft) bgs, with a maximum depth of 3.7 m (12 ft) bgs at the location of the drain. The resulting 325 BCM (425 BCY) of soil was disposed at ERDF. The french drain and associated vitrified clay pipe was found and removed during the remediation. The PVC pipe noted in documentation from the 1990s was not found during remediation.

The Contaminants of Potential Concern (COPCs) for the UPR-300-46 and 300-109 waste sites were identified using historical information for the 333 Building storm water system and the contamination associated with the UPR-300-46 spill. The COPCs associated with the 333 Building and the UPR-300-46 spill include uranium-234, uranium-235, uranium-236, uranium-238, technetium-99, and thorium-232. In addition and in consideration of the storm drain receiving runoff from roofs and pavement surfaces, inductively coupled plasma (ICP) metals, PAH, and PCBs were included as COPCs.

Verification sampling for the UPR-300-46 and 300-109 waste sites was performed on January 6, 2010, to support a determination that residual contaminant concentrations at these sites meet the cleanup criteria specified in the RDR/RAWP and the 300-FF-2 ROD. The complete

laboratory results were stored in the Environmental Restoration (ENRE) project-specific database prior to submitting to the Hanford Environmental Information System (HEIS) for archiving and are provided in Appendix B of the RSVP.

This report demonstrates that the 300-109, 333 Building Stormwater Runoff and UPR-300-46, Contamination North of 333 Building sites have met the rural-residential scenario RAOs established in the RDR/RAWP and the ROD. The evaluation shows that the sites have been successfully remediated and that there are no residual hazardous/dangerous materials present above the RAOs in the soil. Therefore, the 300-109 and UPR-300-46 waste sites are protective of human health, groundwater, and the Columbia River.

Code: UPR-300-48 **Classification:** Accepted

Names: UPR-300-48; 325 Building Basement Topsy Pit **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/1991

Description: The site is radioactively contaminated soil that occurred as a result of a release through a crack in the process sewer drain pipe elbow.

Location: The site is located underneath the 325 Building foundation in room 30 under a process sewer drain elbow.

Release Description: On October 23, 1991, during the confirmation of the 325 Building sewer system configuration, a potential problem with one of the drain lines was discovered. As a precaution, residual material at the bottom of the sump was analyzed. This analysis showed the presence of mercury (700 parts per million) in the sample. The presence of mercury in the sump was believed to be a result of prior, not current, building operations. Further analysis of the sewer line discovered an elbow in a feeder line to the main line had deteriorated and allowed liquids to leak to soil under the basement floor. Soil samples were taken and analyzed.

Related Sites/Structures: The site is associated with the Process Sewer.

Waste Type: Soil

Waste Description: The site received radioactive liquid from a leak in the process sewer drain pipe. The site was discovered during dye testing of drains during development of the Facility Effluent Monitoring Plan development for the 325 Building. The contamination may have resulted from routine releases and accumulated in the soil under the crack.

Samples of the soil under the drain were analyzed for gross radioactivity and for hazardous metals by TCLP. Radioactivity up to 1700 disintegrations per minute alpha was detected. The TCLP results were below regulatory limits.

Code: UPR-600-22 **Classification:** Accepted

Names: UPR-600-22; WPPSS Windrow Site; 600-21 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a series of small parallel berms, which are approximately 0.6 meters (2 feet), 0.9 meters (3 feet) wide and 91 meters (100 yards) long. The berms are arranged to form a triangle approximately 137 meters (150 yards) by 91 meters (100 yards) long. Perimeter berms are approximately 1.2 meters (4 feet) tall.

Location: adjacent to the north fence of the 618-11 Burial Ground.

Release Description: The area was contaminated prior to 1972 with particulate fallout from burial activities in the 618-11 Burial Grounds. UPR-600-9 occurred on April 14, 1967 and indicates a fan-shaped area (approximately 230 meters [250 yards] long and 91 meters [100 yards] wide) was contaminated during a routine cask unloading operation. The contaminated area outside the fence was turned over with bulldozer to bury the contamination.

Related Sites/ Structures: The site is associated with UPR-600-9 and 618-11.

Waste Type: Soil

Waste Description: The area was contaminated prior to 1972 with particulate fallout from burial activities in the 618-11 Burial Grounds. The contaminated area was covered by scraping the affected ground into windrows. On October 24, 1972, a backhoe was used to cut across each windrow at a spacing of every 15 meters (50 feet) to a depth of 15 centimeters (6 inches) below ground level. Radiological surveys were made of all soils removed and of the walls of each cut. No beta, gamma, or alpha radioactivity was detected above the normal background of 100 counts/minute.

1100-EM-1

Code: 1100-1 **Classification:** Accepted

Names: 1100-1; 1171 Building Sandpit Spills; Battery Acid Pit; UPR-1100-1 **Reclassification:** Deleted From NPL (9/30/1996)

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1977

Description: This site has been cleaned up under the 1100 Area Record of Decision. The 1100-1 Battery Acid Pit was an unlined, sand-filled pit excavated in native soil. The site is not visible at the surface. The pit was backfilled to grade when it was withdrawn from service.

Location: The unit is located below grade, northwest of the 1176 Building.

Process Description: The unit was used to dispose of battery acid from vehicle maintenance activities. Information suggests that the unit may have been used to dispose of waste oil, waste antifreeze, and spent solvents.

Related Sites/ Structures: The unit was associated with the 1100 Area Maintenance and Service Operations.

Waste Type: Chemicals

Waste Description: Historical documents record an estimated 15,000 gallons (57,000 liters) of battery acid wastes may have been disposed of between 1954 and 1977. Other substances including antifreeze and solvents may have also been disposed of at the site. The sand lining was removed and deposited in an undisclosed location when the sand became saturated. New sand was then added to the pit for further acid disposal.

Code: 1100-2 **Classification:** Accepted

Names: 1100-2; Paint and Solvent Pit; UPR-1100-2 **Reclassification:** Deleted From NPL (9/30/1996)

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1985

Location: The unit is located along a railroad spur north of the 1171 Building.

Process Description: The pit served as a disposal site for construction debris. Paints, solvents, and thinners have been reportedly disposed of at this location.

Related Sites/ Structures: The unit is associated with the 1100 Area maintenance and construction operations. The pit is also known as Gravel Pit #2 (site code 1100-14)

Waste Type: Chemicals

Waste Description: Paint, solvents, and thinners may have been disposed of in this location.

Waste Type: Construction Debris

Waste Description: The site received construction debris from Hanford Site demolition activities. Principal components of the waste included concrete rubble, asphalt, and wood debris.

Code: 1100-3 **Classification:** Accepted

Names: 1100-3; Antifreeze and Degreaser Pit; Antifreeze **Reclassification:** Deleted From NPL (9/30/1996)

Pit; UPR-1100-3

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1979

Status: Inactive **End Date:** 1/1/1985

Description: The site was originally a gravel pit used as a source of backfill material. This contaminated soils have been cleaned up under the 1100 Area Record of Decision. The site currently appears as a shallow roughly circular depression.

Location: The unit is located north of 1171 Building and west of the Hanford Rail Line inside Gravel Pit #3 (Site Code 1100-15)

Process Description: The site was used to dispose of waste construction material. Prior to use as a disposal site, the unit was a sand and gravel pit known as Pit #3 (Site Code 1100-15).

Related Sites/ Structures: The waste is related to Hanford construction activities and 1171 Building Operations. The site is associated with Hanford Gravel Pit #3

Waste Type: Construction Debris

Waste Description: Construction waste material including roofing and concrete rubble was disposed of at this site.

Waste Type: Chemicals

Waste Description: Ethylene glycol, degreasing solvents and wash water from engine cleaning may have been disposed of at this site although it is not documented.

Code: 1100-4 **Classification:** Accepted

Names: 1100-4; 1171 Building Spills; Antifreeze Tank Site; UN-1100-4; UPR-1100-4 **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Tank **Start Date:** 1/1/1976

Status: Inactive **End Date:** 1/1/1986

Description: This site was cleaned up under the 1100 Area Record of Decision. This site is the former location of a steel underground storage tank.

Location: The unit was located below grade under the northern section of the 1171 Building.

Process Description: The unit temporarily stored waste antifreeze from vehicle maintenance activities. Because there were no risks identified with this site, no further action is required.

Related Sites/ Structures: The was associated with the 1171 Building vehicle maintenance activities.

Waste Type: Chemicals

Waste Description: The unit stored waste antifreeze until removal in 1986. Recent investigations have found metals contamination and slight ethylene glycol contamination.

Code: 1100-11 **Classification:** Accepted

Names: 1100-11; Ephemeral Pool **Reclassification:** Deleted From NPL (9/30/1996)

Type: Pond **Start Date:**

Status: Inactive **End Date:** 1/1/1995

Description: The site has been regraded to a smooth, uniform surface. The Ephemeral Pool site was a long,

narrow depression designed to act as a drainage collection point for precipitation runoff flowing from the 1171 parking area. The north and south boundaries of the site were not distinct because the depression gradually rose toward both the north and south to near the elevation of the surrounding land. Settlement and/or poor grading of the depression floor resulted in the formation of a series of linked pools after rainfall events that temporarily held a portion of the collected moisture within the drainage way until it evaporated or infiltrated into the ground. A pervious gravel lining encouraged infiltration of the collected runoff into the vadose zone beneath this site.

Location: The Ephemeral Pool was located west of the 1171 parking area, near the U.S. Government Railroad lines.

Related Sites/ Structures: The site is associated with the 1171 parking area.

Waste Type: Chemicals

Waste Description: Before cleanup, soil sampling indicated the presence of PCB's (Aroclor 1260) at concentrations ranging from 300 to 42,000 micrograms per kilogram.

Waste Type: Stormwater Runoff

Waste Description: The site was designed to receive stormwater runoff from the adjacent 1171 Building parking area.

Code: HRD

Classification: Accepted

Names: HRD; ITT Waste Disposal Landfill; Gravel Pit 4; Gravel Pit 5; Horn Rapid Landfill (HRL); Horn Rapids Disposal

Reclassification: Deleted From NPL (9/30/1996)

Type: Sanitary Landfill

Start Date:

Status: Inactive

End Date:

Description: This site has been cleaned up based on the 1100 Area Record of Decision. This site consists of an inactive landfill that has been capped with clean soil (asbestos cap) and revegetated. A security fence surrounds the site.

Location: This site is located on the north side of Horn Rapids Roads, west of the intersection of Horn Rapid Road and Stevens Drive.

Process Description: From the late 1940's to the 1970's this site operated as an uncontrolled landfill. This solid waste facility was used primarily for the disposal of office and construction waste, asbestos, sewage sludge, fly ash, and reportedly, numerous drums of unidentified organic liquids. Classified documents were also incinerated at a burn cage located at the northern edge of the landfill.

Waste Type: Oil

Waste Description: Hydraulic oil contaminated with polychlorinated biphenyls was disposed at the site.

Waste Type: Misc. Trash and Debris

Waste Description: Automotive debris was found in all areas of the landfill. Stainless steel lathe shavings were found in the central portion of the landfill. Miscellaneous trash including paint containers was also found at the site.

Waste Type: Construction Debris

Waste Description: Various types of construction debris were found at the site.

Process Description: The site was used for the isolated, unauthorized disposal of liquid waste.

Related Sites/ Structures: adjacent to Gravel Pit #1

Waste Type: Abandoned Chemicals

Waste Description: The site consists of dark-colored, oily residue, and soil. The material includes metal, organic, and pesticide contaminants. Bis(2-ethylhexyl)phthalate (BEHP) and chlordane were identified. BEHP is a probable human carcinogen.

Closure Info: Fifteen soil samples were collected during the Phase I, 1100 Area Investigation. Contaminants identified included lead, potassium, zinc, alpha-chlordane, gamma-chlordane, 4,4'-DDE, bis(2-ethylhexyl)phthalate (BEHP), heptachlor, 3-hexanone, di-n-octylphthalate and 1,1,1-trichloroethane. In Phase II, fourteen soil gas probes were installed to depths ranging from 0.46 meters (1.5 feet) to 1.22 meters (4 feet). No contaminants were identified in the soil gas samples. The remedial action chosen was to excavate 90 cubic yards of contaminated soil. The soil was removed on February 14, 1995 and transported to a permitted, offsite incinerator (Aragonite, Utah). After incineration, the residuals were disposed of in that facility's ash disposal landfill.

1100-EM-2

Code: 700 WST **Classification:** Accepted

Names: 700 WST; 703-1; 700 Area Underground Waste Solvent Tank; 700 Area Waste Solvent Tank **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:** 1/1/1989

Description: Prior to removal, the site consisted of an underground steel storage tank. The tank was pulled and examined. There was a thick crust of soil over much of the tank bottom that prevented a detailed observation of the tank. However, there were no obvious holes. The tank was empty.

Location: This site was located east of the 703 Building approximately 30.5 centimeters (12 inches) from the foundation. The long axis of the tank was north-south. The top of the tank was approximately 45.7 centimeters (18 inches) below grade.

Release Description: When the tank was excavated (but still in place), the odor of solvent was obvious, and the soil was stained dark in places. Readings of the excavation with an HNU model F1 101 10.2 Electron Volt lamp (photo ionization organic vapor detector) showed breathing zone of 3 parts per million, varying from 0-4 parts per million with occasional spikes greater than 7 parts per million. The narrow space beneath the tank read greater than 20 parts per million. HNU readings less than 2.5 centimeters (1 inch) from the soil surface seemed to indicate greater contamination near the south end of the tank impression (after pulling the tank).

Waste Type: Chemicals

Waste Description: The unit contained combustible solution of aliphatic hydrocarbons with 162 parts per million of 1,1,1-trichloroethane.

Closure Info: Witnesses present during excavation reported surface contamination above the tank. Contaminated surface soil was disposed of in five 208 liter (55 gallon) drums by Operations Support Services (OSS) during excavation. Drum contents were sampled by OSS personnel and samples were analyzed under the authority of OSS. The drums and the tank were removed from the site by OSS personnel. The following soil samples were collected: FB-101, FB-102, FB-103, FB-104. Soil was removed from the south end of the tank impression using a backhoe and non-decontaminated shovels. HNU readings approximately 1.2 meters (4 feet) from the trench bottom showed 4-7 parts per million. Soil was shoveled into a plastic bucket from approximately 38 centimeters (15 inches) below where the tank bottom had been. Samples were removed from the center of the bucket. These samples were: FB-105, FB-106, FB-107, FB-108 (equipment blank).

Code: 1100 BSUHR **Classification:** Accepted

Names: 1100 BSUHR; 1100 Area Bus Shop Underground Hoist Rams **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Tank **Start Date:** 1/1/1953

Status: Inactive **End Date:**

Description: This site was cleaned up under the 1100 Area Record of Decision. The 1100 BSUHR Site consists of four single manifold, triple tank hoists. Each is related to the 1171 Building Maintenance activities.

Location: The units are located within the 1171 Building Bus Shops.

Process Description: The storage tanks hold hydraulic oil for the operation of the hoists.

Related Sites/ Structures: The site is associated with the 1171 Building Maintenance activities.

Waste Type: Oil
Waste Description: The units contain non-PCB hydraulic oil.

Code: 1100 HWSA	Classification: Accepted
Names: 1100 HWSA; 1100 Area Hazardous Waste Storage Area; 1100 Area HWSA	Reclassification: Deleted From NPL (9/30/1996)
Type: Storage Pad (<90 day)	Start Date: 1/1/1985
Status: Inactive	End Date: 1/1/1990

Description: The site consists of a fenced gravel pad that is used to store waste containers.

Location: The site was located north of the 1100 Area Building.

Process Description: The unit was used to stage hazardous waste for periods less than 90 days.

Related Sites/ Structures: The unit was associated with 1171 Building operations.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The waste staged at the site included: used oil, antifreeze, degreasers, acids, and paint-related wastes.

Code: 1100 UOT4	Classification: Accepted
Names: 1100 UOT4; 1171-4; 1100 Area Underground Used Oil Tank (Tank #4); 1100 Area Used Oil Tank 4	Reclassification: Deleted From NPL (9/30/1996)
Type: Storage Tank	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1995

Description: The 1100 UOT4 Site was an unlined, underground steel tank. The tank was removed.

Location: The unit was located below the Light Maintenance Shop in the 1171 Building.

Process Description: The tank provided temporary storage for used oil prior to shipment off site for recycling.

Related Sites/ Structures: The tank was associated to the 1171 Building Maintenance.

Waste Type: Oil
Waste Description: The unit received used oil designated for recycling.

Code: 1100 UOT5	Classification: Accepted
Names: 1100 UOT5; 1171-5; 1100 Area Underground Used Oil Tank (Tank #5); 1100 Area Used Oil Tank 5	Reclassification: Deleted From NPL (9/30/1996)

Description:

Code: 1100 USPT3 **Classification:** Accepted
Names: 1100 USPT3; 1171-3; 1100 Area Underground **Reclassification:** Deleted From NPL (9/30/1996)
Steam Pad Tank 3
Type: Storage Tank **Start Date:** 1/1/1984
Status: Inactive **End Date:** 1/1/1995
Description: The 110 USPT3 Site was a fiberglass-reinforced plastic tank. The tank has been removed.
Location: The unit was located near the northwest corner of the 1171 Building.
Process Description: The tank stored wastewater from steam cleaning activities.
Related Sites/ Structures: The unit was associated with the 1171 Building Steam Cleaning Facilities.
Waste Type: Water
Waste Description: The unit received oily water from washing heavy equipment.

Code: 1100-8 **Classification:** Accepted
Names: 1100-8; 1171 Hoist Oil Leak **Reclassification:** Deleted From NPL (9/30/1996)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The DB-1-N hoist in the 1171 building is currently used for vehicle maintenance. The hoist has been repaired and the oil that leaked from the hoist into the soil has been removed.
Release Description: Oil leaked from the ram and containment pan of the DB-1-N hoist in the 1171 Building into the soil.
Process Description: Vehicle maintenance hoist.
Related Sites/ Structures: 1171 building
Waste Type: Oil
Waste Description: Industrial Oil, UNOCAL UNAX AW 32, MSDS #12615 (HEHF)
Reported Date: November 11, 1994

1100-EM-3

Code: 3000 JYHWSA **Classification:** Accepted

Names: 3000 JYHWSA; Hazardous Waste Storage Area (Jones Yard); 3000 Area Jones Yard Hazardous Waste Storage Area; 3000 Area Jones Yard HWSA **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The site consisted of a hazardous waste storage area.

Location: The hazardous waste staging area was located south of the 1226 Building in the southeast corner of the fenced area of the 3000 Area.

Process Description: The unit was used to stage hazardous waste for periods of less than 90 days.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: A maximum of 200 55-gallon (208-liter) drums of nonregulated oils were stored in this area, along with 14 55-gallon (208-liter) drums of antifreeze and paint-reacted materials.

Code: 3000 UUOT **Classification:** Accepted

Names: 3000 UUOT; 3000-12; 3000 Area Underground Used Oil Tank **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Tank **Start Date:** 1/1/1983

Status: Inactive **End Date:** 1/1/1993

Description: This was the site of a underground storage tank. The tank has been exhumed, and the site remediated.

Location: The site is located just southeast of the 1226 Building on the west side of the 1226 Loading Dock.

Process Description: The site was used for storage of used oil and lubricants for recycling. The materials were generated by vehicle maintenance activities in the 1226 Building.

Waste Type: Oil

Waste Description: At the time the tank was exhumed, it contained some oil sludge.

Code: 3000/1208 HWSA **Classification:** Accepted

Names: 3000/1208 HWSA; Hazardous Waste Storage Area (1208); 3000 Area 1208 Building Hazardous Waste Storage Area; 3000 Area 1208 HWSA **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1967

Status: Inactive **End Date:** 1/1/1995

Description: The site consists of a concrete pad that was used to store waste containers.

Location: The hazardous waste staging area was located at the northeast corner of the 1208 Building Shop

in the 3000 Area.

Process Description: The unit was used to stage hazardous waste for periods less than 90 days.

Related Sites/ Structures: The hazardous waste staging area was associated with the 1208 Building Paint Shop.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Typical wastes contained in the staging area included paints and solvents. The unit received approximately 300 gallons (1,140 liters) per year.

Code: 3000/1226 HWSA **Classification:** Accepted
Names: 3000/1226 HWSA; Hazardous Waste Storage Area (1226); 3000 Area 1226 Building Hazardous Waste Storage Area; 3000 Area 1226 HWSA **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1995

Description: The site was a concrete pad that was used to store waste containers.

Location: The hazardous waste staging area was located at the 1226 Building Automotive Shop.

Process Description: The unit was used to stage hazardous waste for less than 90 days.

Related Sites/ Structures: The hazardous waste staging area was associated with the 1226 Building.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Typical wastes contained in the staging area included oils, solvents, antifreeze, and degreasers in 55-gallon (208-liter) drums. The unit received approximately 300 gallons (1,140 liters) per year.

Code: 3000/1234 **Classification:** Accepted
Names: 3000/1234; 1234 Building Storage Yard; 1234 Laydown Yard; 3000 Area 1234 Storage Yard **Reclassification:** Deleted From NPL (9/30/1996)

Type: Storage **Start Date:**

Status: Inactive **End Date:** 1/1/1995

Description: This site is an open area surrounded by a fence. Access was controlled by a single locked gate. This site was used for the storage of raw and structural materials. The Simulated High-Level Waste Treatment and Storage (SHLWST) sites were located within this site. The SHLWST was a permitted Treatment, Storage, and Disposal (TSD) unit that was clean closed.

Location: This site is located just southwest of the intersection of Stone Street and "W" Avenue.

Related Sites/ Structures: This site was associated with the Simulated High-Level Waste Slurry Treatment and Storage (SHLWST).

Waste Type: Equipment

Waste Description: This area was used for storage of raw materials and equipment. Raw materials included grout used in the Simulated High-Level Waste Slurry Treatment/Storage.

Code: 3000/1240 HWSA **Classification:** Accepted

Names: 3000/1240 HWSA; Hazardous Waste Storage Area (1240); 3000 Area 1240 Building **Reclassification:** Deleted From NPL (9/30/1996)
Hazardous Waste Storage Area; 3000 Area 1240 HWSA

Type: Storage Pad (<90 day) **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1995

Description: The site consisted of a concrete pad that was used to store waste containers. There were two drains in the storage pad that drained to the soil. The pad contained old stains.

Location: The hazardous waste staging area was located at the southeast corner of the 1240 Building in the 3000 Area.

Process Description: The unit was used to stage hazardous waste for periods less than 90 days.

Related Sites/Structures: The hazardous waste staging area was associated with the 1240 Building.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Typical wastes contained in the staging area include lubricating oils, cutting oils, solvents, and degreasers in 55-gallon (208-liters) drums. The unit receives approximately 200 gallons (760 liters) per year.

Code: UPR-3000-1 **Classification:** Accepted

Names: UPR-3000-1; Release from the Physical Science Laboratory; UN-3000-1 **Reclassification:** Deleted From NPL (9/30/1996)

Type: Unplanned Release **Start Date:** 1/1/1973

Status: Inactive **End Date:** 1/1/1973

Description: The release site was a sink used only for nonradioactive work in Room 1623 of the Physical Science Laboratory Building. A sign was installed by the sink and the whole middle island was designated plainly as a cold region. The whole middle island was marked with floor tape and a bench top tape to plainly segregate the area from the radioactive area.

Location: UPR-3000-1 originated in the sink in Room 1623 of the Physical Science Laboratory Building. The Physical Science Laboratory Building lies west of the Math Building, south of the Engineering Development Laboratory, and northeast of the intersection of Battelle Boulevard and Stevens Drive in the 3000 Area.

Release Description: A technician disposed of 1,650 milliliters of waste cesium-134 solution into a cold drain that empties into the Richland City sewer system.

Related Sites/Structures: UPR-3000-1 was associated with the sink in Room 1623 of the Physical Science Laboratory Building.

Waste Type: Chemicals

Waste Description: The waste consisted of a tracer solution containing 2 microcuries of cesium-134.

1100-IU-1

Code: 600-28 **Classification:** Accepted
Names: 600-28; Rattlesnake Construction Dump **Reclassification:** Deleted From NPL (9/30/1996)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of numerous low piles of excavated soil, rock, and construction debris. This site has a very irregular slope. Sagebrush and other vegetation are growing on the piles.
Location: This site is located just north of the Nike Missile Launch Site H-52-L at Rattlesnake Mountain.
Waste Type: Asbestos (non-friable)
Waste Description: The waste consists of a small quantity of transite siding and asbestos pipe.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The site contains numerous empty paint cans.

Code: 600-112 **Classification:** Accepted
Names: 600-112; 6652-C Space Science Laboratory Active Septic Tank; 6652-C SSL Active Septic Tank; 6652-C SSLAST **Reclassification:** Deleted From NPL (9/30/1996)
Type: Septic Tank **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1994
Description: The site consists of a concrete septic tank with two square access lids and a retention tank connected to the outlet of the septic tank. Both structures are underground. There is no visual evidence of a second septic tank or a retention tank. There is a chained area marked with signs stating "Caution, Sanitary Tile Field".
Location: This site is located on the southeast side of the 6652-C Space Science Laboratory Building. This laboratory is located at the top of Rattlesnake Mountain, inside the fenced boundary.
Process Description: This site provided sanitary sewage disposal for the 6652-C Space Science Laboratory. This laboratory was formerly the barricades and bachelor officers quarters for the U. S. Army Nike missile radar site H-52-C. From 1955 to 1960 the U. S. Army used this facility, and from 1967 to 1994 Battelle Northwest used this site.

Related Sites/ Structures: The associated structure is the 6652-C Space Science Laboratory.

Waste Type: Sanitary Sewage
Waste Description: The unit received sanitary wastewater.

Code: 600-113 **Classification:** Accepted
Names: 600-113; 6607-15; 6652-C Space Science Laboratory Inactive Septic Tank; 6652-C SSL Inactive Septic Tank; 6652-C SSLIST **Reclassification:** Deleted From NPL (9/30/1996)

Description: This site consists of a septic tank with a round base and a 72 centimeter access lid, a distribution box covered with a wooden lid, a square diverter box, and the connecting drain field.

Location: This site is located at the Fitzner/Eberhardt Arid Lands Ecology headquarters at the foot of Rattlesnake Mountain, on its east side.

Process Description: From 1955 to 1960 this site provided sanitary sewage disposal for the officers quarters, the barracks, the mess hall, and the administration building at the former U. S. Army Nike Missile Launch Site H-52-L.

Related Sites/Structures: The 6652-I, 6652-J, and 6652-H Buildings at the Arid Lands Ecology Reserve (ALE) headquarters were serviced by this system.

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary wastewater.

Closure Info: The septic system was abandoned per the requirements of Washington Administrative Code 246-272-1851. All septage inside the tank was removed and the empty tank was filled to eliminate void spaces. Per an agreement with the Washington Department of Health, the septic system lids were left in place.

Code: 600-116	Classification: Accepted
Names: 600-116; Rattlesnake Mountain Nike Missile Base; RMNMB	Reclassification: Deleted From NPL (9/30/1996)
Type: Military Compound	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1961

Description: This site consists of a former U. S. Army Nike Missile Base. The base is split into two parts: the radar site is on top of Rattlesnake Mountain and the missile launch area is at the foot of Rattlesnake Mountain on the southeast slope. Some of these facilities were subsequently used by Battelle Northwest.

Location: The site is located at the summit of Rattlesnake Mountain and the toe of the southeast slope.

Process Description: The site is a former NIKE missile base consisting of structures which supported missile launch, control, and maintenance functions, as well as living quarters for base personnel and storage buildings for hazardous substances used in the maintenance of the physical plant and missile operations. As of July 1999, all base facilities had been abandoned with the exception of 6652L, the underground missile bunkers, which were actively being used for an experiment according to a sign outside the door. The large observatory (Dome 1) is also still operating (as of 8/2001) and under the control of a non-profit organization, the Alliance for the Advancement of Science through Astronomy.

Related Sites/Structures: Site Codes 600-112, 600-113, 600-114, and 600-115 are septic tanks associated with this site. Site 600-270 is the Horseshoe Landfill, and site 600-271 is the Nike Missile Base Landfill. The following buildings are found at the site: 6652C (Space Science Laboratory), 6652CSHED (Storage Building), 6652D (Pumphouse), 6651DOME1 (Observatory), 6652DOME2 (Small Observatory), 6652E (Garden Building), 6652G (ALE Field Storage), 6652H (ALE Laboratory I), 6652I (ALE Headquarters), 6652J (ALE Laboratory II), 6652K, 6652L (Underground Missile Bunkers), 6652LP (Rattlesnake Mountain Lower Pumphouse), 6652M (Fallout Laboratory), 6652O (Missile Assembly and Test Building), 6652P (Generator Building), 6652R (Paint Shed/ Flammable Storage Block Shed), and 6652UP (Rattlesnake Mountain Upper Pumphouse). The following buildings were used by PNNL and are recorded as being

contaminated as of 1998: 6652C, Space Science Laboratory on top of Rattlesnake Mt., including 6652D, the Fire System Pumphouse (lead-based paint, PCBs in light fixture ballasts, mercury switches, and asbestos insulation are suspected based on the age of the facility) 6652C-SHED, also on top of Rattlesnake Mt., includes both an upper pumphouse (6652-UP and Lower Pumphouse (6652-LP) (The shed has asbestos siding and shingles). 6652E, the Garden Building (Sealed neutron probes are stored in the building as of 11/6/1998 for field tests). 6652DOME1 This is the observatory on Rattlesnake Mt. (A slight potential exists for lead-based paint and mercury switches). This facility is still (8/2001) operating and under the control of Alliance for the Advancement of Science through Astronomy (AASTA). 6652G, the ALE Field Storage building (The building has asbestos tiles, siding, and insulation, and may have lead-based paint and mercury switches). 6652H and 6652I (Connected buildings; Labs 202, 204, and 206 previously contained radioactively contaminated equipment and ductwork, including HEPA filters these were removed in August 2000. Also reported at the site in the Vulnerability and Legacy report are PCBs, which may be in transformers and ballasts, lead-based paint may have been used for the building, asbestos tile and insulation are present, and mercury may be in switches and thermostats). 6652J (Lead-based paint and lead sheets in the vent lines are possible, mercury is expected in the thermostats, and floor tiles are asbestos). 6652L, the Nike missile bunkers (PCBs are expected in light ballasts, lead is expected in the paint, lead batteries, and in the form of 20 tons of lead bricks, mercury is suspected in light switches, freons are expected in the refrigerant system, and asbestos is in the tiles, insulation, and siding). 6652M, the Fallout laboratory (There is potential for lead-based paint and lead around the vent pipes on the roof).

Waste Type: Ordnance

Waste Description: The site previously contained unexploded ordnance waste, according to DOE/RL-92-67.

Waste Type: Asbestos (friable)

Waste Description: The site contains PCB's from transformers, asbestos in insulation, tiles, and siding, mercury in switches, and lead-based paint and bricks in various buildings.

Closure Info: Prior to intrusive investigations at the two landfills, Horseshoe and Nike Base, geophysical surveys were conducted by Golder to identify areas where wastes were present. Eleven anomalous areas within the 2.8 hectare (6.9 acre) Horseshoe Landfill site and nine anomalous areas within the 1.9 hectare (4.6 acre) Nike Base Landfill were identified. See Sites 600-270 and 600-271.

In 1994, Geophysical investigations were done to identify underground storage tanks (USTs) in the area. Two 7600 liter (2000 gallon) underground fuel storage tanks were identified at buildings 6652-G and 6652-H. These two tanks were removed. The soil beneath the tanks was sampled and found to be clean. 4.6 cubic meters (6 cubic yards) of petroleum contaminated soil was found inside another underground fuel storage tank at 6652-G. This soil was taken to a landfarm in to 100 Area. Other UST's were identified at 6652-H, 6652-I and 6652-J. One abandoned fuel oil UST, with an unknown volume, was found south of 6652-H.

One 22,800 liter (6000 gallon) underground diesel fuel tank was identified near the observatory dome, at 6652-C. This tank was closed in place in 1994.

Type: Valve Pit **Start Date:** 1/1/1974
Status: Inactive **End Date:**

Description: The unit is an underground structure with reinforced concrete walls, floor, and cover blocks.

Location: The valve pit is located inside the 241-A Tank Farm complex, south of tanks 241-A-101 and 241-A-102.

Process Description: The 241-A Tank Farm valve pits were used to route wastes to and from the 242-A Evaporator; 241-AN, 241-AW, 241-AY, and 241-AZ Tank Farms, PUREX and the 244-A DCRT. The 204-AR Facility was connected to 241-A-A, but waste was re-routed to 241-AW-A valve pit in 2003 when line LIQW-702 was tied into line SN-220 . Transfers from 244-A may include cross-site, 244-CR, and B-Plant wastes.

Related Sites/Structures: The unit is associated with 241-A-350, 241-A Tank Farm, 200-E-167-PL, 200-E-210-PL.

Waste Type: Process Effluent

Waste Description: The 241-A Tank Farm valve pits are used to route wastes to and from the 242-A Evaporator; 241-AN, 241-AW, 241-AY, and 241-AZ Tank Farms; PUREX; and the 244-A DCRT. The 204-AR Facility was connected to 241-A-A, but waste was re-routed to 241-AW-A valve pit in 2003 when line LIQW-702 was tied into line SN-220 . Transfers from 244-A may include cross-site, 244-CR, and B-Plant wastes.

Code: 241-A-B **Classification:** Accepted

Names: 241-A-B; 241-A-B Diversion Box; 241-A-B Structural Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1974
Status: Inactive **End Date:**

Description: The unit is an underground reinforced concrete structure with walls, a floor, and cover blocks.

Location: The valve pit is located inside the 241-A Tank Farm complex, south of tanks 241-A-101 and 241-A-102.

Process Description: The 241-A Tank Farm valve pits were used to route wastes to and from the 242-A Evaporator; 241-AN, 241-AW, 241-AY, and 241-AZ Tank Farms; PUREX; and the 244-A DCRT. Transfers from 244-A may have included cross-site, 244-CR, and B-Plant wastes.

Related Sites/Structures: This unit is associated with 241-A-350, 241-A Tank Farm, 200-E-167-PL, 200-E-210-PL.

Waste Type: Process Effluent

Waste Description: The 241-A Tank Farm valve pits are used to route wastes to and from the 242-A Evaporator; 241-AN, 241-AW, 241-AY, and 241-AZ Tank Farms; PUREX; and the 244-A DCRT. Transfers from 244-A may include cross-site, 244-CR, and B-Plant wastes.

Code: 241-A-101 **Classification:** Accepted

Names: 241-A-101; 241-A-TK-101 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. The dome is

located below grade for shielding. This is a third-generation tank with an increased operating depth and a flat (instead of dished) bottom.

Location: The 241-A-101 tank is located in the southwestern portion of the 241-A Tank Farm.

Process Description: The tank is used for the storage of mixed waste generated at Hanford.

Waste Type: Storage Tank

Waste Description: Activity in Tank 241-A-101 began when it was filled with PUREX high-level waste and organic wash waste in 1956. Activity ceased when the tank was deactivated in November 1980.

Code: 241-A-102 **Classification:** Accepted

Names: 241-A-102; 241-A-TK-102 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. The dome is located below grade for shielding. This is a third-generation tank with an increased operating depth and a flat (instead of dished) bottom.

Location: The 241-A-102 tank is located in the southwestern portion of the 241-A Tank Farm.

Process Description: The tank is used for the storage of mixed waste generated at Hanford.

Waste Type: Storage Tank

Waste Description: Tank 241-A-102 was filled with PUREX waste in 1956. The tank was declared deactivated in November 1980 and intrusion prevention was completed during 1982. The tank was interim stabilized in August 1989 after most of the supernatant was pumped. The tank waste is classified as double-shell slurry feed.

Code: 241-A-103 **Classification:** Accepted

Names: 241-A-103; 241-A-TK-103 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. The dome is located below grade for shielding. This is a third-generation tank with an increased operating depth and a flat (instead of dished) bottom.

Location: The 241-A-103 tank is located in the southern portion of the 241-A Tank Farm.

Process Description: The tank is used for the storage of mixed waste generated at Hanford.

Waste Type: Storage Tank

Waste Description: Tank 241-A-103 was filled with self-concentrating PUREX waste from 1956 until 1969. Tank 241-A-103 was declared inactive in August 1980.

Code: 241-A-104 **Classification:** Accepted

Names: 241-A-104; 241-A-TK-104 **Reclassification:** None

Code:	241-A-350	Classification:	Accepted
Names:	241-A-350; 241-A-350 Catch Tank; 241-A-350 Drainage Lift Station	Reclassification:	None
Type:	Catch Tank	Start Date:	1/1/1956
Status:	Inactive	End Date:	1/1/2005
Description:	The unit is an underground reinforced concrete pump pit, with a cover block. The pump pit drains any leaks from the pump through the pump pit floor drain to an 800-gallon (3000-liter) stainless steel tank below.		
Location:	The unit is located inside the 241-A Tank Farm fence, southeast of tank 241-A-106.		
Process Description:	The unit is designed to receive drainage from the 241-A-A and 241-A-B valve pits, 241-A service pit, 241-A&B flush pits, 241-A clean out boxes, 241-A-431 ventilation equipment, and out of specification 241-A-207 retention basin solution.		
Related Sites/ Structures:	The unit is associated with 241-A Tank Farm and 241-A-A and 241-A-B diversion boxes and 207-A.		
Waste Type:	Storage Tank		
Waste Description:	This unit contains aging PUREX high-level waste, PUREX acid concentrator waste, organic wash waste, and 241-A-207 Retention Basin solution.		

Code:	241-A-417	Classification:	Accepted
Names:	241-A-417; 241-A-417 Condensate Tank	Reclassification:	None
Type:	Catch Tank	Start Date:	1/1/1959
Status:	Inactive	End Date:	1/1/2005
Description:	This unit is an underground cylindrical concrete vault lined with an all welded steel liner. Two overflow lines near the top of the vault prevent overflow of the tank. Above the tank are two rectangular pits, a pump pit and a valve pit. The floor of both pits slope to drains that empty to the tank.		
Location:	The tank is located inside the 241-A Tank Farm fence, east of the 241-A-702 Building.		
Release Description:	On March 25, 1980, a routine pressure test of the underground F-100 condensate return pipeline from the AX-501 Valve Pit to the 241-A-417 condensate catch tank failed. An April 3, 1980 investigation found a leak at the flange connection. An excavation at the pipeline leak was done. Two barrels of contaminated soil, reading 10,000 counts per minute, was taken to a burial ground. A new gasket was installed.		
Process Description:	This unit collects condensate from the 241-A-401 Condenser House, 241-A-702, and from 241-AZ-154. Condensate may be pumped back to the 241-AX Tank Farms or overflow to the 216-A-24 Crib.		
Related Sites/ Structures:	The unit is associated with 241-A Tank Farm, 241-AX Tank Farm, and the 216-A-24 Crib.		
Waste Type:	Steam Condensate		
Waste Description:	This unit collects condensate for the 241-A-702 process condensate, the 241-A-401 process condensate, and the 241-AZ-154 steam condensate.		

Code: 241-A-431 **Classification:** Accepted
Names: 241-A-431; 241-A-431 Tank Farm Ventilation Building; 241-A-431 Ventilation Building **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/1969

Description: The unit is a concrete structure, with the lower portion below grade. The unit is divided into two sections. One section houses the ventilation equipment. The other section houses the de-entrainment equipment. The building is 8 meters (25 feet) high, with the lower 4.9 meters (16 feet) below grade.

Location: The unit is located southeast of the 241-A-103 Tank, inside the 241-A Tank Farm fence.

Process Description: This structure is a tank farm ventilation building that provided off gas de-entrainment for the 241-A Tank Farm and also received the 296-A-11 Stack drainage.

Related Sites/ Structures: The building is associated with the 241-A Tank Farm, 216-A-16, 216-A-17, 216-A-23-A and 216-A-23-B French Drains, 216-A-34, 216-A-19, 216-A-20 and the 296-A-11 Stack.

Waste Type: Equipment
Waste Description: The unit contains radioactively contaminated equipment and concrete. It provided off-gas de-entrainment for the 241-A Tank Farm and also received the 296-A-11 Stack drainage.

Code: 241-A-501 **Classification:** Accepted
Names: 241-A-501; 241-A-501 Contact Condenser Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:**
Status: Inactive **End Date:**

Location: The valve pit is located inside 241-A Tank Farm, west of 241-A-152 diversion box and east of 241-A-106 tank.

Process Description: The 241-A-501 valve pit received raw water and cooling water from the PUREX facility, via the 241-A201 storage tank. The cooling water ran out of the valve pit to the E-411 (EP-241-A-161) and E-412 (EP-241-A-162) contact condensers. The output from the contact condensers went to the 241-A-401 condenser building.

Related Sites/ Structures: The structure is associated with the 216-A-8 crib.

Code: 241-A-702-WS-1 **Classification:** Accepted
Names: 241-A-702-WS-1; 702-A Drain Lines **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1968
Status: Inactive **End Date:** 1/1/1995

Description: The unit is a french drain that received steam condensate from the 241-A-702 Ventilation Building.

Location: The unit is located inside the 241-A Tank Farm fence, west of the 241-A-702 Ventilation Building.

Process The drain is used in association with the 241-A-702 ventilation system. Process steam was used

Description: in steam heaters during normal and reduced operating conditions to raise the temperature of vent gases from the 241-AY and 241-AZ Tanks to prevent wetting of filters. The drain was used in conjunction with a steam trap for the system.

Related Sites/ Structures: The unit is associated with the 241-AY and 241-AZ Tank Farm and the 241-A-702 Ventilation Building.

Waste Type: Steam Condensate

Waste Description: The unit received steam condensate from the 241-A-702 Ventilation Building.

Code: 241-AX-A **Classification:** Accepted

Names: 241-AX-A; 241-AX-A Diversion Box; 241-AX-A Structural Valve Pit; 241-AX-A Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The unit is an underground reinforced concrete structure with 1 foot (0.31 meter) thick walls and floor.

Location: The 241-AX-A is located inside the 241-AX Tank Farm, southwest of tank 241-AX-104.

Process Description: 241-AX-A direct slurry into tanks or supernate out of tanks by manipulation of the correct valve.

Related Sites/ Structures: This unit is associated with 241-AY-102 and 241-AX Tank Farm. The unit is interconnected with the 241-AX-B Valve Pit, the 241-A-A Pit, the 241-A-B Pit, and the 242-A Evaporator.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation.

Code: 241-AX-B **Classification:** Accepted

Names: 241-AX-B; 241-AX-B Diversion Box; 241-AX-B Structural Valve Pit; 241-AX-B Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1965

Status: Inactive **End Date:**

Description: The unit is an underground reinforced concrete structure with 1foot (.31 meters) thick walls and floor.

Location: The 241-AX-B is located inside the 241-AX Tank Farm, southwest of tank 241-AX-104.

Process Description: 241-AX-B directed slurry into tanks or supernate out of tanks by manipulation of the correct valve.

Related Sites/ Structures: The unit is associated with the 241-AY-102 and the 241-AX Tank Farm. The unit is interconnected with the 241-AX-A Valve Pit, the 241-A-A Pit, the 241-A-B Pit, and the 242-A Evaporator.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation.

Code: 241-AX-IX	Classification: Accepted
Names: 241-AX-IX; IMUST; 241-AX Ion Exchanger	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1967
Status: Inactive	End Date: 1/1/1976

Description: The ion exchange system consists of an above ground filter and ion exchange column. The ion exchange column is enclosed in a shielded structure. The ion exchange column sits on top of a 2.4 meter (8 foot) concrete structure.

Location: The 241-AX-IX is located in the southern portion of the 241-AX Tank Farm. It is northeast of the 241-A-417 condensate hold up tank, between the 241-A and 241-AX tank farms.

Process Description: The 241-AX-IX is an ion exchanger comprised of the exchange column and underground piping. The resin column is located inside a shielded structure that is open at the top. It was installed in 1967 and operated from 1973 to 1976 to remove cesium from the 702-A tank vapor condensate, collected in the 241-A-417 tank. Condensate was pumped from 241-A-417 through the filter and into the top of the ion exchange column. The condensate would gravity flow through the column and normally be discharged to the 218-A-8 crib.

Related Sites/ Structures: The system is associated with the 216-A-8 crib.

Waste Type: Equipment

Waste Description: The 241-AX-IX removed cesium from the 702-A tank vapor condensate, collected in the 241-A-417 tank.

Code: 241-AX-101	Classification: Accepted
Names: 241-AX-101; 241-AX-TK-101	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1965
Status: Inactive	End Date: 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. This is a third-generation tank having a flat bottom, and an additional grid of drain slots beneath the steel liner bottom. The dome is below grade for shielding.

Location: The 241-AX-101 tank is located in the northeast corner of the 241-AX Tank Farm.

Process Description: The 241-AX tanks received high level self boiling waste from PUREX operations.

Waste Type: Storage Tank

Waste Description: Double shell slurry feed is waste concentrated just before reacting the sodium aluminate saturation boundary in the evaporator without exceeding the receiver tank composition limit.

Code: 241-AX-102	Classification: Accepted
Names: 241-AX-102; 241-AX-TK-102	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1966
Status: Inactive	End Date: 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. The dome is

below grade for shielding. This is a third-generation tank having a flat bottom, and an additional grid of drain slots beneath the steel liner bottom.

Location: The 241-AX-102 tank is located in the southeast corner of the 241-AX Tank Farm.

Process Description: 241-AX tanks received high-level self boiling waste from PUREX operations.

Waste Type: Storage Tank

Waste Description: This tank received concentrated complexant which is a concentrate product from the evaporation of dilute complexed waste.

Code: 241-AX-103 **Classification:** Accepted

Names: 241-AX-103; 241-AX-TK-103 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1965

Status: Inactive **End Date:** 1/1/1980

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. This is a third-generation tank having a flat bottom, and an additional grid of drain slots beneath the steel liner bottom. The dome is below grade for shielding.

Location: The 241-AX-103 tank is located in the northwest corner of the 241-AX Tank Farm.

Process Description: 241-AX tanks received high-level, self-boiling waste from PUREX operations.

Waste Type: Storage Tank

Waste Description: This tank received concentrated complexant which is concentrated product form the evaporation of dilute complexed waste.

Code: 241-AX-104 **Classification:** Accepted

Names: 241-AX-104; 241-AX-TK-104 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1966

Status: Inactive **End Date:** 1/1/1976

Description: The unit is carbon-steel lined, with a reinforced concrete shell, dome, and base. The dome is below grade for shielding. This is a third-generation tank having a flat bottom, and an additional grid of drain slots beneath the steel liner bottom.

Location: The 241-AX-104 tank is located in the southwestern portion of the 241-AX Tank Farm.

Process Description: 241-AX tanks received high level self boiling waste from PUREX operations.

Waste Type: Storage Tank

Waste Description: This tank received non-complexed waste which is a general waste term applied to all Hanford Site non-complexed liquors non-identified as complexed.

Code: 241-AX-152DS **Classification:** Accepted

Names: 241-AX-152DS; 241-AX-152-DS Diverter Station; Line V713; 241-AX-152 Diverter Station **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1965

Process Description: The valve routes and receives tank farm condensate.

Related Sites/ Structures: The unit interconnects AX Tank Farm to the 241-A-417 Pump Pit and Tank.

Waste Type: Storage Tank

Waste Description: The unit receives and routes tank farm condensate.

Code: 241-AY-152 **Classification:** Accepted

Names: 241-AY-152; 241-AY-152 Diverter Station; 241-AY-152 Sluice Transfer Box; Line DR0074 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1971

Status: Inactive **End Date:** 1/1/1985

Description: The unit is an underground, reinforced concrete structure.

Location: 241-AY-152 is located in the western portion of the 241-AX Tank Farm.

Process Description: This unit is used to transport radioactive waste solutions between storage and process facilities.

Related Sites/ Structures: The unit is associated with the 241-A and the 241-AX single-shell tank farm. The drain line is DR0074.

Waste Type: Process Effluent

Waste Description: This diversion box received PUREX organic wash, PUREX acid, PUREX high level waste and B Plant high level waste. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: This diversion box contains lead shielding.

Code: 241-AY-501 **Classification:** Accepted

Names: 241-AY-501; 241-AY-501 Condensate Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:**

Status: Inactive **End Date:**

Description: The pit is an underground cement structure with cement cover blocks. The valve pit has been isolated and weather sealed.

Location: The valve pit is located inside the 241-AX Tank Farm fence, east of tank 241-AY-101 and west of 241-AX-103..

Process Description: The 241-AY-501 valve pit was used to distribute condensate from the 702-A ventilation system to the 241-AX, 241-AY and 241-AZ tank farms. The condensate collected in the 241-A-417 tank.

Related Sites/ Structures: The site is associated with 241-A-417.

Code: UPR-200-E-115
Names: UPR-200-E-115; Contamination Spread Inside 241-AX; UN-200-E-115
Code: UPR-200-E-119
Names: UPR-200-E-119; Contamination Spread Inside 241-AX; UN-200-E-119
Code: UPR-200-E-125
Names: UPR-200-E-125; 241-A-104 Release; UN-200-E-125
Code: UPR-200-E-126
Names: UPR-200-E-126; 241-A-105 Tank Leak; UN-200-E-126

Code: 200-E-200-PL **Classification:** Accepted
Names: 200-E-200-PL; Lines 801, 802, 806 and 805; Pipelines from 244-AR Vault to 241-AY-152 and 241-A-153 Diversion Boxes **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is four underground, 15 centimeter (6 inch) diameter carbon steel pipelines buried in the same soil trench. The lines split into a "Y" east of the 241-A Tank Farm fence. Lines 802 and 806 divert to 241-AY-152 Diversion Box. Lines 801 and 805 divert to the 241-A-153 Diversion Box.
Location: The pipelines extend from the 244-AR Vault building to the 241-A Tank Farm. The lines cross under Buffalo Ave.
Related Sites/ Structures: The transfer line is associated with 244-AR Vault, 241-A-153 and 241-AY-152.

Code: 2607-EC **Classification:** Accepted
Names: 2607-EC **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1963
Status: Inactive **End Date:**
Description: This unit includes a septic tank and dry well.
Location: HNF-SD-LL-SP-001 shows the location of the septic tank in the northeast corner of 241-A tank farm, near the fence.
Related Sites/ Structures: HNF-6612 says the septic tank is associated with 241-AR-271.
Waste Type: Sanitary Sewage
Waste Description: Sanitary wastewater and sewage. In 1995, the estimated rate of waste generation is 0.45 cu m/d.

Code: 2607-ED **Classification:** Accepted
Names: 2607-ED **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1980
Status: Inactive **End Date:**
Description: The 2607-ED Septic Tank receives sanitary wastewater and sewage from the 2707-AX Building

and drains to the drain field. The drain field has a capacity of 257 gallons (973 liters) per day.

Location: This unit lies south of the 241-AX-102 tank, inside the tank farm fence.

Process Description: The 2607-ED Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the 2707-AX Building.

Related Sites/ Structures: The 2607-ED Septic Tank is associated with the 2707-AX Building and lies within the AX Tank Farm.

Waste Type: Sanitary Sewage

Waste Description: The 2607-ED Septic Tank receives sanitary wastewater and sewage from the 2707-AX Building at an estimated rate of 10 cubic feet (0.28 cubic meters) per day.

WMA B/BX/BY

Code: 241-B-101 **Classification:** Accepted
Names: 241-B-101; 241-B-TK-101 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1974

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 9 meters (30 feet) high, with a capacity of 2,017,405 liters (533,000 gallons). The bottom is 11.3 meters (37 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original single-shell design, having a dished bottom and a 5.2 meters (17 feet) operating depth. The tank is passively ventilated.

Location: The tank is located about 914 meters (3,000 feet) north northeast of the 221-B building.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1974. The leak estimate of 30,280 liters (8,000 gallons) is an average total from 19 tanks.

Waste Type: Storage Tank

Waste Description: Initially tank B-101 received metal waste in 1945. The tank received and transferred waste via cascade lines from 1945 until 1963. During 1953, B-101 processed feed for U Plant. From 1953 until 1963, the tank contained supernatant containing evaporator bottoms waste from 241-B tanks. During 1957, in-farm scavenged feed was sent to the 244-CR Vault. From 1960 until 1970, B-101 received wastewater. Also, it was found that during 1960 wastewater leaked into the pipe encasement which drained to B-101. During 1963 the tank received PUREX coating waste. B-101 received B Plant high-level waste (Cell 23) from 1969 until 1970. From 1970 until 1973, the tank received B Plant, Cell 23 evaporator bottoms. The tank also received bismuth phosphate metal waste and waste in route to in-tank solidification. Presently, the waste material is classified as non-complexed and has a total waste volume of 427,705 liters (113,000 gallons). Sludge comprises the total 427,705 liters (113,000 gallons). There is no saltcake or pumpable liquid and 6,000 gallons of drainable interstitial liquid remaining. An analysis was conducted on a B-101 sludge sample in February 1976. The sample was found to have a consistency of soft mud and was dark brown. A heat generation rate based on strontium-89, strontium-90, and cesium-137 was calculated to be 0.0201 watts/liter of sludge. The resulting solids remaining in this tank (based on core samples) contain an estimated 4 million Curies of strontium (92,000 BTU/h). The curie content listed is not decayed to a consistent date; therefore, a cumulative total is inappropriate.

Reported Date: April 30, 1996

Code: 241-B-102 **Classification:** Accepted
Names: 241-B-102; 241-B-TK-102 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1978

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 9 meters (30 feet) high, with a capacity of 2,017,405 liters (533,000 gallons). The bottom is 11.3 meters (37 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original single-shell design, having a dished bottom and a 5.2 meters (17 feet) operating depth. Tank 241-B-102 is the second tank in a "cascade" connecting it to tanks 241-B-101 and 241-B-103. The tank is passively ventilated.

Location: Tank 241-B-102 is located on the north side of the 200 East Area about 914 meters (3,000 feet)

north northeast of the 221-B building.

Release Description: While pumping supernatant from tank 241-B-102 to tank 241-B-101, tank farm personnel noticed soil discoloration around the 241-B-102 heel pit indicating a leak in the transfer line. Surface soil contamination with readings of 10 R/hr were recorded. The contaminated ground area was immediately covered with asphalt to reduce radionuclide migration. This UPR is reported as UPR-200-E-108.

Waste Type: Storage Tank

Waste Description: Tank 241-B-102 went into service in 1945 by receiving metal waste produced by the bismuth phosphate process. The tank was sluiced in 1953 to remove the metal waste for uranium recovery then filled with a transfer from tank 241-B-105 (the active receiver tank for the 242-B Evaporator). Most of the contents of the tank were sent to tank 241-C-112 in 1957 for ferrocyanide scavenging of the supernate. Later that year the tank received water. The tank stood idle until 1963, when it began to receive cladding waste supernate from other tanks. The tank received a supernatant transfer from 241-B-101 in 1969 and was receiving high level waste from B Plant. Most of this supernate was transferred out of the tank in 1970. The tank received ion-exchange waste (B Plant) which was later transferred in a large supernate transfer in 1971. The tank also received low level waste from B Plant (1972), water waste transfer and pumpable liquids from other single-shell tanks (B-105, 107, and 110) that were being taken out of service (1972-1976). During this time tank 241-B-102 was also transferring supernate to tanks 241-B-103, 241-B-106, and 241-SX-106. The tank also received cladding removal waste supernate from the Plutonium-Uranium Extraction (PUREX) process and supernate from the fission product recovery process at B Plant. The tank also received ion exchange waste and evaporator bottoms from 241-B, -BX, and -C tank farms. Presently, the waste material is classified as non-complexed and has a total waste volume of 121,120 liters (32,000 gallons). Sludge comprises 68,130 liters (18,000 gallons) of the tank contents, saltcake 37,850 liters (10,000 gallons) and there is 15,140 liters (4,000 gallons) of drainable supernatant liquid remaining. The waste level is very low 17.8 centimeters (~7 inches).

Reported Date: April 30, 1996

Code: 241-B-103	Classification: Accepted
Names: 241-B-103; 241-B-TK-103	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1977

Description: The unit is a single-shell tank constructed of .3 meter (1 foot) thick reinforced concrete with a 6.4 millimeters (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 4 foot 1.2 meters (4 feet) radius knuckle. The tank has a 5.2 meters (17 feet) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. Tank 241-B-103 is the third and final tank in a "cascade" connecting to tanks 241-B-101 and 241-B-102. The cascade overflow height is approximately 4.86 meters (192 inches) from the tank bottom (at the

sidewall) and .61 meters (2 feet) below the top of the steel liner. The tank is passively ventilated.

Location: Tank 241-B-103 is located on the north side of the 200 East Area about 3,000 feet (914 m) north northeast of the 221-B building.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1978. The leak estimate of 30,280 liters (8,000 gallons) is an average total from 19 tanks.

Waste Type: Storage Tank

Waste Description: Tank 241-B-103 went into service in 1945 by receiving waste cascaded from tank 241-B-102 until it was declared full in 1946. The tank was sluiced in 1953 for uranium recovery. From 1954 until 1963 the tank received supernate, evaporator bottoms waste and unknown waste from an unknown source. The tank also received bismuth phosphate metal waste; PUREX coating waste; and supernatant containing ion exchange waste, N Reactor waste, organic wash waste: PNL waste, REDOX high-level waste, coating waste, evaporator bottoms, B Plant low-level waste, decontamination waste, tributyl phosphate waste, and laboratory waste from 241-B, -BX, and -C tank farms. Additional sources of waste are first and second cycle waste from B Plant and in-tank solidification (ITS-1 & ITS-2) evaporator bottoms. Presently, the waste material is classified as non-complexed and has a total waste volume of 59,000 gallons (223,315 L). Sludge is reported to comprise 59,000 gallons (223,315 L) of the tank contents with no saltcake, drainable, or pumpable liquid remaining. However, the Tank Layer Model (Agnew et al. 1994), estimates that the tank contains mostly saltcake 56,000 gallons (211,960 L), with a small amount of metal waste 3,000 gallons (11,355 L). The waste level in the tank is (~14 inches) 35 cm.

Reported Date: May 31, 1996

Code: 241-B-104 **Classification:** Accepted

Names: 241-B-104; 241-B-TK-104 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1972

Description: The single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and at 1.2 meters (4 foot) radius knuckle. The tank has a 5.2 meters (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. The tank is passively ventilated.

Location: Tank 241-B-104 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Waste Type: Storage Tank

Waste Description: Tank 241-B-104 is equipped to cascade to tank 241-B-105 and is first in the three-tank cascade flow series. The tank received bismuth phosphate first and second-cycle waste; evaporator

bottoms, and supernatant containing evaporator bottoms from the 241-B tanks. Presently, the waste material is classified as non-complexed and has a total waste volume of 371,000 gallons (1,404,235 L). Sludge is reported to comprise 301,000 gallons (1,139,285 L) and saltcake 69,000 (261,165 L). There is 40,000 gallons (151,400 L) pumpable liquid remaining and 47,000 gallons (177,895 L) of drainable liquid remaining. Drainable liquid includes 46,000 gallons (174,110 L) interstitial and 1,000 gallons (3,785 L) of supernatant liquid. The volume of waste converts to a waste level of almost 11 feet (3.4 m). More sample material is needed for full characterization of the waste.

Reported Date: May 31, 1996

Code: 241-B-105	Classification: Accepted
Names: 241-B-105; 241-B-TK-105	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1947
Status: Inactive	End Date: 1/1/1972

Description: The single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 5.2 meters (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. The tank is passively ventilated.

Location: Tank 241-B-105 is located on the north side of the 200 East Area about 3,000 feet (914 m) north northeast of the 221-B building.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1978. The leak estimate of 30,280 liters (8,000 gallons) is an average total from 19 tanks. Tank B-105 was categorized "questionable integrity" due to the unexplained high level of activity in Dry Wells 20-05-06 and 20-06-06.

Waste Type: Storage Tank

Waste Description: Tank 241-B-105 is equipped to receive waste via cascade from tank B-104 and cascade to tank 241-B-106 and is second in the three-tank cascade flow series. The tank received bismuth phosphate first and second-cycle waste and flush water containing evaporator bottoms from the 241-B tanks. Presently, the waste material is classified as non-complexed and has a total waste volume of 306,000 gallons (1,158,210 L). Sludge is reported to comprise 40,000 gallons (151,400 L) and saltcake 266,000 (1,006,810 L). There is 23,000 gallons (87,055 L) of drainable liquid remaining and no pumpable liquid remaining. The volume of waste converts to a waste level of almost 9 feet (2.7 m). No samples have been taken from tank 241-B-105.

Reported Date: May 31, 1996

Code: 241-B-106	Classification: Accepted
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Names: 241-B-106; 241-B-TK-106**Reclassification:** None**Type:** Single-Shell Tank**Start Date:** 1/1/1947**Status:** Inactive**End Date:** 1/1/1977

Description: The single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 6.4 millimeters (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meter (4 foot) radius knuckle. The tank has at 5.2 meters (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes.

Location: Tank 241-B-106 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Waste Type: Storage Tank

Waste Description: The tank received bismuth phosphate first and second-cycle waste; Hanford Laboratory operations waste; supernatant containing tributyl phosphate waste; 224-U wates, PNL waste, evaporator bottoms, B Plant low-level waste, ion exchange waste, and bismuth phosphate first-cycle waste from 241-B, -BX, -BY, and -C tanks. Presently, the waste material is classified as non-complexed and has a total waste volume of 442,845 liters (117,000 gallons). Sludge is reported to comprise 439,060 liters (116,000 gallons) and supernatant liquids comprise 3,785 liters (1,000 gallons). There is 26,495 liters (7,000 gallons) of drainable liquid remaining and no pumpable liquid remaining. The volume of waste is between 100.6-96.5 centimeters (39.6-38 inches). More sample material is needed for full characterization of tank waste.

Reported Date: May 31, 1996

Code: 241-B-107**Classification:** Accepted**Names:** 241-B-107; 241-B-TK-107**Reclassification:** None**Type:** Single-Shell Tank**Start Date:** 1/1/1945**Status:** Inactive**End Date:** 1/1/1969

Description: The single-shell tank is constructed of .3 meter (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 feet) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 feet) radius knuckle. The tank has a 5.2 meters (17 feet) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2

meters (7.25 feet) of overburden for shielding purposes.

Location: Tank 241-B-107 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Release Description: Soil surrounding the 241-B-107 tank became contaminated in 1968 when approximately 30,280 liters (8,000 gallons) of waste containing 2,000 Ci of cesium-137 leaked from tank 241-B-107 in 1968. This UPR is recorded as UPR-200-E-127.

Waste Type: Storage Tank

Waste Description: 241-B-107 tank received PUREX coating waste; bismuth phosphate first-cycle waste; and supernatant containing bismuth phosphate first-cycle waste, bismuth phosphate second-cycle waste, and evaporator bottoms from the 241-B tanks. The tank also received uranium recovery waste, tri-butyl phosphate waste, non-complexed waste, 242-B evaporator saltcake, and wastewater. Presently, the waste material is classified as non-complexed and has a total waste volume of 165,000 gallons (624,525 L). Sludge is reported to comprise 164,000 gallons (620,740 L) and supernatant liquids comprise 1,000 gallons (3,785 L). There is 13,000 gallons (49,205 L) of drainable liquid remaining and 7,000 gallons (26,495 L) of pumpable liquid remaining. The volume of waste is about 4.5 feet (1.4 m) in the tank. There have been no samples taken of the tank waste.

Reported Date: May 31, 1996

Code: 241-B-108

Classification: Accepted

Names: 241-B-108; 241-B-TK-108

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1977

Description: The single-shell tank is constructed of .3 meter (1 foot) thick reinforced concrete with a 6.4 millimeters (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 feet) radius knuckle. The tank has a 5.2 meter (17 feet) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes.

Location: Tank 241-B-108 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Waste Type: Storage Tank

Waste Description: 241-B-108 tank received PUREX coating waste; bismuth phosphate first-cycle waste, and supernatant containing evaporator bottoms and ion exchange waste from the 241-B and -BY tank farms. The tank also received non-complexed waste and 242-B evaporator saltcake waste. Presently, the waste material is classified as non-complexed and has a total waste volume of 94,000 gallons (355,790 L). Sludge is reported to comprise the 94,000 gallons (355,790 L). There is 4,000 gallons (15,140 L) of drainable interstitial liquid remaining and no pumpable liquid remaining. The volume of waste converts to approximately 2.5 feet (.8 m) in the tank.

There have been no samples taken of the tank waste.

Reported Date: May 31, 1996

Code: 241-B-109	Classification: Accepted
Names: 241-B-109; 241-B-TK-109	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1946
Status: Inactive	End Date: 1/1/1977

Description: The single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 5.2 meters (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is enclosed by a 1.8 meter (6-foot) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-109 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Waste Type: Storage Tank

Waste Description: 241-B-109 tank received PUREX coating waste; bismuth phosphate first-cycle waste, and supernatant containing evaporator bottoms, and ion exchange waste. The tank also received coating waste from the 241-B, -BY, and -S tank farms, non-complexed waste, waste water, 224-U waste, and 242-B evaporator saltcake waste. Presently, the waste material is classified as non-complexed and has a total waste volume of 127,000 gallons (480,822 L). There is disparity between sources for tank inventories. One source lists sludge for the total waste volume at 8,000 gallons (30,280 L) of drainable interstitial liquid. Another source reports the waste comprises 30,000 gallons (113,550 L) of unknown waste; 13,000 gallons (49,205 L) of sludge; and 84,000 gallons (317,940 L) of saltcake. The volume of waste converts to approximately 3.5 feet (1.1 m) in the tank. There have been no samples taken of the tank waste.

Reported Date: May 31, 1996

Code: 241-B-110	Classification: Accepted
Names: 241-B-110; 241-B-TK-110	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1971

Description: The single-shell tank is constructed of .3 meter (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meter (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a

maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a (1.2 m4 foot) radius knuckle. The tank has a 5.2 meters (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is enclosed by a 1.8 meters (6-foot) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-110 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Release Description: An unplanned release occurred in 1969 when approximately 31,416 liters (8,300 gallons) of waste containing about 4,300 Ci of cesium-137 leaked from tank 241-B-110 contaminating the soil surrounding the tank. The leak volume estimate is based solely on observed liquid level decreases in this tank and is considered to be the most accurate method for estimating leak volumes. This UPR is recorded as UPR-200-E-128.

Waste Type: Storage Tank

Waste Description: 241-B-110 tank received Bismuth phosphate first-cycle waste; bismuth phosphate second-cycle wastes; fission product waste; B Plant high-level waste (waste fractionization); B Plant waste from cells 5 and 6; B Plant flushes; and ion exchange waste; B Plant low-level waste; evaporator bottoms; non-complexed waste; decontamination waste; PUREX high-level waste; in-tank solidification waste; cesium recovery waste; and waste water. The waste material is classified as non-complexed and presently has a total waste volume of 931,001 liters (246,000 gallons). Sludge comprises the total except for 3,785 liters (1,000 gallons) of supernatant liquid. There is 64,345 liters (17,000 gallons) of pumpable liquid remaining. Level adjustments in 1982 and 1985 brought waste level measurements in the tank to current readings. The volume of waste converts to approximately 2.2 meters (7 feet) in the tank. While characterization of the solid contents has been performed, complete analysis of the upper layer must take place to more fully chartacterize this portion of the waste.

Reported Date: May 31, 1996

Code: 241-B-111	Classification: Accepted
Names: 241-B-111; 241-B-TK-111	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1976

Description: The single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 6.4 millimeter (0.25 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meter (4 foot) radius knuckle. The tank has a 5.2 meter (17 foot) operating depth. The tank is set on a reinforced concrete foundation 11.3 meter (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes

in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is enclosed by a 1.8 meters (6-foot) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-111 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Release Description: A leak of 8,000 gallons (30,280 L) occurred prior to or during 1978. The leak estimate of 30,280 liters (8,000 gallons) is an average total from 19 tanks. Tank B-111 was categorized "questionable integrity" due to the unexplained activity in Dry Wells 20-11-09 and 20-12-06.

Waste Type: Storage Tank

Waste Description: 241-B-111 tank received bismuth phosphate first-cycle waste; bismuth phosphate second-cycle wastes; ion exchange waste (waste fractionization); fission product waste; B Plant waste from cells 5 and 6; evaporator bottoms; non-complexed waste; decontamination waste; PUREX high-level waste; cesium recovery waste; and waste water. The waste material is classified as non-complexed and presently has a total waste volume of 237,000 gallons (897,045 L) comprised of sludge. There is 60,560 liters (16,000 gallons) of pumpable liquid and 83,270 liters (22,000 gallons) of drainable liquid remaining. The volume of waste converts to approximately 2.2 meters (7 feet) in the tank. More sample material is needed for full characterization of tank waste.

Reported Date: May 31, 1996

Code: 241-B-112 **Classification:** Accepted

Names: 241-B-112; 241-B-TK-112 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1977

Description: The single-shell tank is constructed of 1 foot (.3 m) thick reinforced concrete with a 0.25 inch (6.4 mm) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a 1.25 foot (.38 m) thick domed concrete top. The top of the steel liner is 18 feet (5.5 m) above the bottom of the tank (at the side wall). The tank has a dished bottom with a maximum depth of 12 inches (30 cm) below the side wall of the tank and a 4 foot (1.2 m) radius knuckle. The tank has a 17 foot (5.2 m) operating depth. The tank is set on a reinforced concrete foundation 37 feet (11.3 m) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 533,000 gallons (2,017,405 L). The tank was covered with approximately 7.25 feet (2.2 m) of overburden for shielding purposes. At present, the tank farm is enclosed by a 6-foot (1.8 m) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-112 is located on the north side of the 200 East Area about 3,000 feet (914 m) north northeast of the 221-B building.

Release Description: A leak of 2,000 gallons (7,570 L) occurred prior to or during 1978. Tank B-112 was categorized "questionable integrity" due to the unexplained activity in Dry Wells 20-12-03 and 20-12-06.

Waste Type: Storage Tank
Waste Description: 241-B-112 tank received bismuth phosphate second-cycle wastes; B Plant low-level waste; fission product waste; ion exchange waste; evaporator bottoms from the 241-B and -BX tanks; non-complexed waste; first cycle waste; decontamination waste; and waste water. The waste material is classified as non-complexed and presently has a total waste volume of 33,000 gallons (124,905 L) comprised of 30,000 gallons (113,550 L) sludge and 3,000 gallons (11,355 L) of drainable supernatant liquid. Another source indicates that the 30,000 gallons (11,355 L) of sludge is composed of 14,000 gallons (52,990 L) of sludge and 16,000 gallons (60,560 L) of salt cake. The volume of waste converts to approximately 1 foot (.3 m) in the tank. Based on analytical results from the 1995 Auger sampling event, the waste in the tank does not appear to present any immediate safety concerns.

Reported Date: May 31, 1996

Code: 241-B-151 **Classification:** Accepted
Names: 241-B-151; 241-B-151 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1984

Description: 241-B-151 Diversion Box is an underground structure constructed of reinforced concrete with a height of approximately 15 feet (4.6 m). Only an approximate 1 foot (.3 m) of this diversion box appears above grade. The outer dimensions are approximately 20 feet (6.1 m) by 9 feet (2.7 m). Wall thickness ranges from about 2 feet (.61 m) for the lower half to a three step progressively thinner thickness to accommodate the three layers of tapered concrete blocks that make up the cover. The cover is made up in sections consisting of fifteen pre-formed concrete blocks. The layers of concrete blocks are arranged in three stacked rows, the bottom row having the shortest length and the top row having the longest length. The tapered ends aid in locating the blocks into place and each block overlaps with the one above and/or below it. Each block is about 20 inches (51 cm) high and range in length from around 6.8 to 8 feet (2 to 2.4 m)

Location: 241-B-151 Diversion Box is located inside 241-B Tank Farm, approximately 66.6 meters (219 feet) south of tank 241-B-110.

Release Description: UPR-200-E-4, UPR-200-E-73.

Process Description: 241-B-151 Diversion Box transferred waste solutions from processing and decontamination operations to the 241-B and 241-BX Tank Farms.

Related Sites/Structures: 241-B-151 Diversion Box is associated with the 241-B-152, 241-B-153 diversion boxes, 241-B Tank Farm, 241-BX Tank Farm and the 241-B-301B catch tank

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of liquid waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 50 pounds (23 kilograms) of waste lead is also stored in each diversion box.

Code: 241-B-152 **Classification:** Accepted
Names: 241-B-152; 241-B-152 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1984

Description: 241-B-152 Diversion Box is an underground structure constructed of reinforced concrete with a

height of approximately 4.6 meters (15 feet). Approximate 0.3 meters (1 foot) is above grade. The outer dimensions are approximately (8.5 meters (28 feet) by 2.7 meters (9 feet). Wall thickness is progressively thinner to accommodate for three layers of tapered concrete cover blocks. The layers of concrete blocks are arranged in three stacked rows, the bottom row having the shortest length and the top row having the longest length.

Location: The 241-B-152 Diversion Box is located inside the 241-B Tank Farm, approximately 61 meters (200 feet) southwest of tank 241-B-110.

Release Description: UPR-200-E-74 and UPR-200-E-38 occurred at this diversion box.

Process Description: 241-B-152 Diversion Box transferred waste solutions from processing and decontamination operations to the 241-B and 241-BX Tank Farms.

Related Sites/ Structures: 241-B-152 Diversion Box is associated with the 241-B Tank Farm, 241-E-216-PL, 241-B-151, 241-B-153, 241-B-154, 241-B-252, 241-BX-153, and 241-BX-155 diversion boxes and the 241-B-301 Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 50 pounds (23 kilograms) of waste lead is stored in each diversion box.

Code: 241-B-153 **Classification:** Accepted

Names: 241-B-153; 241-B-153 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1984

Description: The 241-B-153 Diversion Box is an underground structure constructed of reinforced concrete with a height of approximately 10.4 meters (34 feet). Approximate 0.3 meters (1 foot) is above grade. The outer dimensions are approximately 10.4 meters (34 feet) by 2.7 meters (9 feet). The wall thickness gets progressively thinner to accommodate three layers of tapered concrete cover blocks. The layers of concrete blocks are arranged in three stacked rows.

Location: The 241-B-153 Diversion Box is located inside the 241-B Tank Farm, approximately 23.8 meters (78 feet) south of tank 241-B-110.

Release Description: UPR-200-E-6, UPR-200-E-75 and UPR-200-E-76 are associated with this site.

Process Description: The 241-B-153 Diversion Box transferred waste solutions from processing and decontamination operations to the 241-B and 241-BX Tank Farms.

Related Sites/ Structures: 241-B-153 Diversion Box is associated with the 241-B Tank Farm, 241-B-151 and 241-B-152 diversion boxes and the 241-B-301 Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-B-201 **Classification:** Accepted

Names: 241-B-201; 241-B-TK-201 **Reclassification:** None

Waste Description: Wastes consist of : 224 building wastes (lanthanum fluoride), metal waste, non-complexed waste, and B Plant high-level waste. The waste material is classified as non-complexed and presently has a total waste volume of 102,195 liters (27,000 gallons) comprised of 102,195 liters (27,000 gallons) sludge. There is 11,355 liters (3,000 gallons) of drainable liquid remaining. The volume of waste converts to approximately 3.7 meters (12 feet) depth in the tank.

Reported Date: May 31, 1996

Code: 241-B-203	Classification: Accepted
Names: 241-B-203; 241-B-TK-203	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1977

Description: The single-shell tank is the smallest of the tank farm designs with a 20 foot (6.1 m) diameter, a 24.9 foot (7.5 m) operating depth, and a 55,000 gallon (208,175 L) capacity. The tank is constructed of reinforced concrete with a 0.25 inch (6.4 mm) steel liner on the bottom and sides and a 1.58 foot (.48 m) thick domed concrete top. The tank is set on a concrete foundation 37.9 feet (11.5 m) below grade. The tank was covered with approximately 11 feet (3.3 m) of overburden for shielding purposes. At present, the tank farm is enclosed by a 6-foot (1.8 m) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-203 is located on the north side of the 200 East Area about 3,000 feet (914 m) north northeast of the 221-B building.

Release Description: Between 1951 and 1977, unplanned release (UPR) occurred when about 300 gallons (1,136 L) of lanthanum fluoride escaped from tank 241-B-203 and contaminated the soil surrounding and beneath the tank. This UPR is recorded as UPR-200-E-130. The leak volume estimate is based solely on observed liquid level decreases in this tank and is considered to be the most accurate method for estimating leak volumes. Operating Limit Deviation Report (OLDR) No. 82-08 was issued in May 1982 because the liquid level exceeded the decrease criterion. Environmental Protection Deviation Report 83-02 was issued in November 1983 because of evidence of liquid level decreases, settling of solids around the tank perimeter, and liner corrosion.

Waste Type: Storage Tank

Waste Description: Wastes consist of : 224 building wastes (lanthanum fluoride), metal waste, and non-complexed waste. The waste material is classified as non-complexed and presently has a total waste volume of 51,000 gallons (193,035 L) comprised of 50,000 gallons (189,250 L) sludge. There is 6,000 gallons (22,710 L) of drainable liquid remaining. The volume of waste converts to approximately just over 21 feet (6.4 m) depth in the tank.

Reported Date: May 31, 1996

Code: 241-B-204	Classification: Accepted
Names: 241-B-204; 241-B-TK-204	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1977

Description: The single-shell tank is the smallest of the tank farm designs with a 6.1 meters (20 foot) diameter, a 7.5 meters (24.9 foot) operating depth, and a 208,175 liters (55,000 gallon) capacity. The tank is constructed of reinforced concrete with a 6.4 millimeter (0.25 inch) steel

liner on the bottom and sides and a .48 meters (1.58 foot) thick domed concrete top. The tank is set on a concrete foundation 11.5 meters (37.9 feet) below grade. The tank was covered with approximately 3.3 meters (11 feet) of overburden for shielding purposes. At present, the tank farm is enclosed by a 1.8 meter (6-foot) high chain link fence. The tanks are marked by yellow riser pipes and the ground surface is covered with gravel.

Location: Tank 241-B-204 is located on the north side of the 200 East Area about 914 meters (3,000 feet) north northeast of the 221-B building.

Release Description: Approximately 1,514 liters (400 gallons) leaked from tank 241-B-204 before or during 1984. The leak volume estimate is based solely on observed liquid level decreases in this tank and is considered to be the most accurate method for estimating leak volumes. Environmental Protection Deviation Report 83-02 was issued in November 1983 because of evidence of liquid level decreases, settling of solids around the tank perimeter, and liner corrosion.

Waste Type: Storage Tank

Waste Description: Wastes consist of: 224 building wastes (lanthanum fluoride), metal waste, B Plant flushes, and non-complexed waste. The waste material is classified as non-complexed and presently has a total waste volume of 189,250 liters (50,000 gallons) comprised of 185,465 liters (49,000 gallons) sludge. There is 22,710 liters (6,000 gallons) of drainable liquid remaining. The volume of waste converts to approximately 6.4 meters (21 feet) depth in the tank.

Reported Date: May 31, 1996

Code: 241-B-252	Classification: Accepted
Names: 241-B-252; 241-B-252 Diversion Box	Reclassification: None
Type: Diversion Box	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1984

Description: The site is a 0.6 meter (2 foot) thick, reinforced concrete structure, 4.6 meters (15 feet) deep. The outer dimensions are 11 meters (36 feet) long by 2.7 meters (9 feet) wide. There are twenty four 7.6 centimeter (three inch) Hanford type nozzles housed inside. The top of the box is a concrete cover block which usually extends a few inches above grade.

Location: Diversion Box 241-B-252 is located in the northwest corner of the 241-B Tank Farm, east of Baltimore Avenue.

Related Sites/Structures: Diversion Box 241-B-252 interconnects with the following: The 241-B and 241-BY Tank Farms, 241-B-151, 241-B-152, and 241-BX-154 Diversion Boxes, 109-BY Valve Pit, and 241-B-301 Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-B-301	Classification: Accepted
Names: 241-B-301; 241-B-301B; 241-B-301-B Catch Tank; Drain Lines V238 and V312; IMUST; Inactive Miscellaneous Underground Storage Tank	Reclassification: None
Type: Catch Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1984

Description: The site is an underground tank, located within the 241-B Tank Farm chin link fence. The tank is surrounded by a steel chain and marked with radiological and IMUST signs. Four yellow risers are visible at the surface.

Location: The 241-B-301 Catch Tank is located on the west side of the 241-B Tank Farm, inside the tank farm fence. It is south of 12th Street and west of Baltimore Ave..

Process Description: The 241-B-301 Catch Tank was designed to collect waste leaks from the 241-B diversion boxes that occurred during transfers.

Related Sites/Structures: The 241-B-301 Catch Tank is connected to the 241-B-151, 241-B-152, 241-B-153, 241-B-154, 241-B-252, 242-B-151 diversion boxes in the 241-B Tank Farm. Lines V312, V238 and V238 are the drain lines from the diversion boxes.

Waste Type: Process Effluent

Waste Description: 1993, the tank was estimated to contain 2230 liters (590 gallons) of supernate and 81648 liters (21,600 gallons) of sludge. Analytical data for tank liquid show moderately basic pH with extremely low levels of fissile materials. Cesium levels are also very low. The radionuclide analyses have been adjusted for 17.4 year radioactive decay (October 1974 to April 1992). From preliminary observations, supernate in this tank would not be In designated as dangerous waste or prove a criticality hazard.

Code: 242-B-151 **Classification:** Accepted

Names: 242-B-151; 242-B Evaporator Building Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1984

Description: Diversion Box 242-B-151 is constructed of reinforced concrete with a height of approximately 4 meters (13 feet). Approximate 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately 3.7 meters (12 feet) by 2.4 meters (8 feet). The structure's cover is in sections consisting of three interlocking pre-formed concrete blocks.

Location: Diversion Box 242-B-151 is located inside the 241-B Tank Farm. It is northwest of the 242-B Evaporator building and approximately 16.2 meters (53 feet) south of tanks 241-B-104 and 241-B-107.

Process Description: Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks.

Related Sites/Structures: Diversion Box 242-B-151 connects with the 242-B Evaporator to the 241-B Tank Farm.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. This unit received byproduct cake solution and waste solution from the first decontamination waste cycle from 242-B. This contained ~10% of original fission product, 1% Plutonium, and the remainder of miscellaneous chemicals. the major chemical component was bismuth phosphate. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-BR-152 **Classification:** Accepted

Names:	241-BR-152; 241-BR-152 Diversion Box	Reclassification:	None
Type:	Diversion Box	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1984
Description:	Tank Farm drawings show 241-BR-152 is co-located in a series of three diversion boxes that are joined together. 241-BXR-152 is the center diversion box. 241-BR-152 Diversion Box is on the eastern end and 241-BYR-152 is the most western of the diversion boxes in this group. They are located south of the 241-B-101 tank.		
Location:	Diversion Box 241-BR-152 is located in the southeastern portion of the 241-BY Tank Farm, inside the tank farm fence.		
Process Description:	Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks. Diversion Box 241-BR-152 is constructed of reinforced concrete with walls approximately 3.7 meters (12 feet) high and ranging from .3-.6 m (1-2 feet) thick. The outer dimensions are approximately 12.2 meters (40 feet) by 11 meters (36 feet). The concrete cover is about .3 meters (1 foot) above grade and is made up in sections consisting of thirty interlocking pre-formed concrete blocks. The concrete blocks range in thickness from .37 meters (1.2 feet) to .82 meters (2.7 feet) and are equipped with lifting bails made from approximate 3.43 centimeters (1.35 inch) diameter steel bar. Cranes were used to lift the blocks. The blocks were sealed with a combination of hot sealing compound and a flexcell bituminous fiber expansion joint.		
Related Sites/ Structures:	Diversion Box 241-BR-152 interconnects with the following: 241-BXR-151 Diversion Box, the 241-B Tank Farm, and building 242-B (242-B Evaporator). The transfer line to 241-B Tank Farm is discussed in sitecode 200-E-197-PL.		
Waste Type:	Process Effluent		
Waste Description:	This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 50 pounds (23 kilograms) of lead shielding may stored in each diversion box.		

Code:	241-BX-101	Classification:	Accepted
Names:	241-BX-101; 241-BX-TK-101	Reclassification:	None
Type:	Single-Shell Tank	Start Date:	1/1/1948
Status:	Inactive	End Date:	1/1/1975
Description:	The 22.9 meter (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 m (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeter (12 inches) below the side wall of the tank and a (1.2 m) radius knuckle. The tank has a 16 foot 4.9 meters (4 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.		
Location:	Tank 241-BX-101 is located on the north side of the 200 East Area about 850 meters (2,800		

feet) north of the 221-B (B Plant) building.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1972. The leak volume estimate is an average of approximately 30,280 liters (8,000 gallons) for 19 tanks.

Waste Type: Storage Tank

Waste Description: 241-B-101 tank received bismuth phosphate metal waste; evaporator bottoms; B Plant low-level waste, ion exchange waste (waste fractionization), and supernatant containing B Plant low-level waste; PUREX organic wash waste, cladding waste, coating waste, #1 acid and concentrator waste, ion exchange waste; REDOX ion exchange waste from 241-BY, -BX, -B, and -C tanks; tributyl phosphate waste; inorganic wash waste; coating waste; uranium recovery waste; complex waste; double-shell slurry feed; evaporator feed; organic wash waste; metal waste; non-complexed waste; waste water; in-tank solidification saltcake; cesium recovery waste. The unit received an inadvertent transfer of ~ 6,813 liters (1,800 gallons) of ARC-359 organic ion exchange resin in early 1972. The waste material is classified as non-complexed and presently has a total waste volume of 162,755 liters (43,000 gallons) comprised of 158,970 liters (42,000 gallons) sludge and 3,785 liters (1,000 gallons) of drainable supernatant liquid. The volume of waste converts to approximately .3 meters (1 foot) in the tank.

Reported Date: May 31, 1996

Code: 241-BX-102	Classification: Accepted
Names: 241-BX-102; 241-BX-TK-102	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1971

Description: The 22.9 meter (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 m (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-102 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Release Description: The 241-BX-102 tank was overfilled in 1951, causing a large volume of liquid waste to overflow into the soil column. It was estimated that 348,000 liters (91,600 gallons) of tank waste was lost in the 1951 event. Assuming the metal waste stream contained 0.5 pounds of uranium per gallon of liquid waste, approximately 22.5 tons of uranium was released to the soil. A 1971 report identified 264,950 liters (70,000 gallons) was released from this tank prior to or during 1971. Some or all of the found in 1971 can be attributed to the 1951 overflow event.

Waste Type: Storage Tank
Waste Description: 241-BX-102 tank received bismuth phosphate metal waste; diatomaceous earth; supernatant containing tributyl phosphate waste; metal waste; PUREX coating waste; B Plant low level waste; evaporator bottoms from 241-BX, -BY, -B, and -C tanks; organic wash waste; metal waste; non-complexed waste. The waste material is classified as non-complexed and presently has a total waste volume of 363,360 liters (96,000 gallons) comprised of 147,615 liters (39,000 gallons) of unknown waste; 64,345 liters (17,000 gallons) of diatomaceous earth; 151,400 liters (40,000 gallons) of sludge; no pumpable liquid remaining, and 15,140 liters (4,000 gallons) of drainable supernatant liquid. The volume of waste converts to approximately .8 meters (2.5 feet) in the tank.

Reported Date: May 31, 1996

Code: 241-BX-103	Classification: Accepted
Names: 241-BX-103; 241-BX-TK-103	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1977

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and at 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about (11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-103 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Release Description: The contaminated soil in the vicinity of dry wells 21-03-03, 21-03-05, and 21-03-12 is believed to have been caused by tank overflow and spillage a number of years ago. 113,550 to 340,650 liters (30,000 to 90,000 gallons) of waste spilled on the ground between tank BX-102 and BX-103 in 1951.

Waste Type: Storage Tank
Waste Description: 241-BX-103 tank received bismuth phosphate metal waste; supernatant containing metal waste; tributyl phosphate waste; PUREX coating waste, #1 acid concentrator waste, ion exchange waste, low and high-level waste, and sludge supernatant wastes; organic wash waste; decontamination waste; PNL waste; N Reactor waste; laboratory waste; evaporator feed, evaporator bottoms; REDOX ion exchange waste; non-complexed waste; waste water; B Plant low-level waste from 241-B, -BX, -BY, -C tanks, BXR-002 diversion box, and ER-311 catch tank. The waste material is classified as non-complexed and presently has a total waste volume of 257,380 liters (68,000 gallons) comprised of 234,670 liters (62,000 gallons) of sludge and 22,710 liters (6,000 gallons) of drainable supernatant liquid. There is no pumpable liquid remaining. The volume of waste converts to approximately .5 meters (1.7 feet) in the tank.

Reported Date: May 31, 1996

Code: 241-BX-104	Classification: Accepted
Names: 241-BX-104; 241-BX-TK-104	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1980

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeters (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-104 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank

Waste Description: 241-BX-104 tank received bismuth phosphate metal waste; PUREX coating waste, cladding waste; ion exchange waste (waste fractionization); evaporator bottoms; supernatant containing REDOX high-level waste; complexed and non-complexed waste; double-shell slurry feed; tributyl phosphate waste; water and waste water; cesium recovery waste; in-tank solidification saltcake; B Plant low-level waste, and ion exchange waste from 241-B, -BX, -BY, -C, and -SY tanks, and ER-302-C and ER-311 catch tanks. The waste material is classified as non-complexed and presently has a total waste volume of (374,715 liters (99,000 gallons) comprised of 363,360 liters (96,000 gallons) of sludge and 124,905 liters (33,000 gallons) of drainable supernatant liquid and 102,195 liters (27,000 gallons) of pumpable liquid remaining. The volume of waste converts to approximately .8 meters(2.6 feet) in the tank.

Reported Date: May 31, 1996

Code: 241-BX-105	Classification: Accepted
Names: 241-BX-105; 241-BX-TK-105	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1980

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side

wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-105 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank

Waste Description: 241-BX-105 tank received bismuth phosphate metal waste; PUREX coating waste; ion exchange waste; evaporator bottoms; supernatant containing metal waste; uranium recovery waste; B Plant low-level waste; concentrated reduction and oxidation (REDOX) waste; complexed and non-complexed waste; double-shell slurry feed from 241-BX, -BY, -C, -S, and -SX tanks; tributyl phosphate waste; evaporator feed; waste water. The waste material is classified as non-complexed and presently has a total waste volume of 193,035 liters (51,000 gallons) comprised of 162,755 liters (43,000 gallons) of sludge; 11,355 liters (3,000 gallons) of saltcake; 18,925 liters (5,000 gallons) of supernatant liquid. There remains 41,635 liters (11,000 gallons) drainable liquid and 15,140 liters (4,000 gallons) of pumpable liquid remaining. The volume of waste converts to approximately .3 meters (1 foot) in the tank (WHC-EP-0182-98). It should be noted that recent FIC gauge level readings taken from riser 1 of the tank indicate a waste depth of 24.8 inches (.6 m). Core samples recovered from risers 1 and 8 seem to confirm the waste depth and volume indicated by the FIC gauge (WHC-SD-WM-ER-406, Rev. 0B).

Code: 241-BX-106	Classification: Accepted
Names: 241-BX-106; 241-BX-TK-106	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1977

Description: The 22.9 m (75 foot) diameter single-shell tank is constructed of .3 meter (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meter (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeter (12 inches) below the side wall of the tank and a (1.2 m) radius knuckle. The tank has a 16 foot 4.9 meters (4 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-106 is located on the north side of the 200 East Area about 850 meters (2,800

feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank
Waste Description: 241-BX-106 tank received bismuth phosphate metal waste; PUREX coating waste, ion exchange waste; evaporator bottoms; supernatant containing metal waste; B Plant low-level waste; REDOX ion exchange waste from 241-B, -BX, and -BY tanks; organic wash waste; evaporator feed; non-complexed waste; waste water; tributyl phosphate waste. The waste material is classified as non-complexed and presently has a total waste volume of 143,830 liters (38,000 gallons) comprised of 143,830 liters (38,000 gallons) of sludge. There is no drainable liquid or pumpable liquid remaining. The volume of waste converts to less than .3 meters (1 foot) in the tank.

Code: 241-BX-107	Classification: Accepted
Names: 241-BX-107; 241-BX-TK-107	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1948
Status: Inactive	End Date: 1/1/1977

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-107 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank
Waste Description: 241-BX-107 tank received bismuth phosphate first-cycle waste; metal waste; supernatant containing ion exchange waste from the 241-BX tank farm; evaporator feed; non-complexed waste; uranium recovery waste. The waste material is classified as non-complexed and presently has a total waste volume of 1,302,040 liters (344,000 gallons) comprised of 1,302,040 liters (344,000 gallons) of sludge. There is 113,550 liters (30,000 gallons) drainable liquid and 87,055 liters (23,000 gallons) pumpable liquid remaining. The volume of waste converts to about a 3 meters (10 foot) depth in the tank.

Code: 241-BX-108	Classification: Accepted
Names: 241-BX-108; 241-BX-TK-108	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1974

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick

reinforced concrete with a 1 centimeters (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-108 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Release Description: A leak of about 9,463 liters (2,500 gallons) occurred prior to or during 1974.

Waste Type: Storage Tank

Waste Description: 241-BX-108 tank received bismuth phosphate first-cycle waste; supernatant containing tributyl phosphate waste; PUREX coating waste; B Plant cesium recovery waste; ion exchange waste from 241-BX and -C tanks; non-complexed waste; uranium recovery waste; cladding waste. The waste material is classified as non-complexed and presently has a total waste volume of 98,410 liters (26,000 gallons) comprised of 98,410 liters (26,000 gallons) of sludge. There is 3,785 liters (1,000 gallons) drainable interstitial liquid and no pumpable liquid remaining. The volume of waste converts to about a 10 centimeters (4 inch) depth in the tank.

Code: 241-BX-109	Classification: Accepted
Names: 241-BX-109; 241-BX-TK-109	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1974

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meter (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 metes (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-109 is located on the north side of the 200 East Area about 2,800 feet (850 m) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank
Waste Description: 241-BX-109 tank received bismuth phosphate first-cycle waste; tributyl phosphate waste; PUREX coating waste; cesium recovery waste; ion exchange waste (waste fractionization) and supernatant containing tributyl phosphate waste from 241-BY and -C tanks; non-complexed waste; uranium recovery waste; waste water. The waste material is classified as non-complexed and presently has a total waste volume of 730,505 liters (93,000 gallons) comprised of 730,505 liters (193,000 gallons) of sludge. There is 49,205 liters (13,000 gallons) drainable interstitial liquid and 30,280 liters (8,000 gallons) pumpable liquid remaining. The volume of waste converts to about a 1.7 meters (5.5 foot) depth in the tank.

Code: 241-BX-110 **Classification:** Accepted
Names: 241-BX-110; 241-BX-TK-110 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1977

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-110 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1976. The leak volume estimate is an average of approximately 30,280 liters (8,000 gallons) for 19 tanks.

Waste Type: Storage Tank
Waste Description: 241-BX-110 tank received bismuth phosphate first-cycle waste; evaporator bottoms; supernatant containing coating waste; cesium recovery waste; ion exchange waste (waste fractionization) and B Plant first-cycle waste from 241-B and -C tank farms; non-complexed waste; waste water. The waste material is classified as non-complexed and presently has a total waste volume of 783,495 liters (207,000 gallons) comprised of 738,075 liters (195,000 gallons) sludge, 34,065 liters (9,000 gallons) saltcake, and 11,355 liters (3,000 gallons) supernatant liquid. There is 71,915 liters (19,000 gallons) drainable liquid and 49,205 liters (13,000 gallons) pumpable liquid remaining. The volume of waste converts to about a 1.8 meters (6 foot) depth in the tank.

Code: 241-BX-111 **Classification:** Accepted
Names: 241-BX-111; 241-BX-TK-111 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1950

Status: Inactive**End Date:** 1/1/1977

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meters (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-111 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Release Description: A leak of 30,280 liters (8,000 gallons) occurred prior to or during 1984. The leak volume estimate is an average of approximately 30,280 liters (8,000 gallons) for 19 tanks.

Waste Type: Storage Tank

Waste Description: 241-BX-111 tank received bismuth phosphate first-cycle waste; evaporator bottoms; in-tank solidification (ITS-2) bottoms and recycle system; supernatant containing ion exchange waste; coating waste; first-cycle waste from 241-BX tanks; evaporator feed; non-complexed waste. The waste material is classified as non-complexed and presently has a total waste volume of 613,170 liters (162,000 gallons) comprised of 196,820 liters (52,000 gallons) sludge, 412,565 liter (109,000 gallons) saltcake, and 3,785 liter (1,000 gallons) supernatant liquid. There is 11,355 liters (3,000 gallons) drainable liquid and 3,785 liters (1,000 gallons) pumpable liquid remaining. The volume of waste converts to about a 1.4 m (4.5 foot) depth in the tank.

Code: 241-BX-112**Classification:** Accepted**Names:** 241-BX-112; 241-BX-TK-112**Reclassification:** None**Type:** Single-Shell Tank**Start Date:** 1/1/1950**Status:** Inactive**End Date:** 1/1/1977

Description: The 22.9 meters (75 foot) diameter single-shell tank is constructed of .3 meters (1 foot) thick reinforced concrete with a 1 centimeter (0.375 inch) mild carbon steel liner (ASTM A 283 Grade C) on the bottom and sides and a .38 meter (1.25 foot) thick domed concrete top. The top of the steel liner is 5.5 meters (18 feet) above the bottom of the tank (at the side wall). The tank has a dished bottom, with a maximum depth of 30 centimeters (12 inches) below the side wall of the tank and a 1.2 meters (4 foot) radius knuckle. The tank has a 4.9 meters (16 foot) operating depth. The tank is set on a reinforced concrete foundation about 11.3 meters (37 feet) below grade. A three-ply cotton fabric waterproofing was applied over the foundation and steel tank. Four coats of primer paint were sprayed on all exposed interior tank surfaces. The tank ceiling dome was covered with three applications of magnesium zincfluorosilicate wash. Lead flashing was used to protect the joint where the steel liner met the concrete dome. Asbestos gaskets were used to seal the manholes in the tank dome. The tank was waterproofed on the sides and top with tar and gunnite. Tank capacity is 2,017,405 liters (533,000 gallons). The tank was covered with approximately 2.2 meters (7.25 feet) of overburden for shielding

purposes. At present, the tank farm is surrounded by a chain link fence, topped with three strands of barbed wire. The ground surface is covered with gravel and no vegetation is seen.

Location: Tank 241-BX-112 is located on the north side of the 200 East Area about 850 meters (2,800 feet) north of the 221-B (B Plant) building, directly west of the 241-B Tank Farm.

Waste Type: Storage Tank

Waste Description: 241-BX-112 tank received first-cycle waste; evaporator bottoms; supernatant containing evaporator bottoms waste; tri-butyl phosphate; ion exchange waste (waste fractionization); first-cycle waste from 241-C tanks: waste water; PUREX coating waste; non-complexed waste. The waste material is classified as non-complexed and presently has a total waste volume of 624,525 liters (165,000 gallons) comprised of 620,740 liters (164,000 gallons) sludge and 3,785 liters(1,000 gallons) supernatant liquid. There is 30,280 liters (8,000 gallons) drainable liquid and 7,570 liters (2,000 gallons) pumpable liquid remaining. The volume of waste converts to about a 1.4 meters (4.5 foot) depth in the tank.

Code: 241-BX-153 **Classification:** Accepted

Names: 241-BX-153; 241-BX-153 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1983

Description: Diversion Box 241-BX-153 is constructed of reinforced concrete structure built mostly below grade. Only approximate 38 centimeters (15 inches) of this diversion box appears above grade. The cover blocks are made up in sections consisting of thirty one pre-formed concrete blocks. The layers of concrete blocks are arranged in three stacked rows, the bottom row having the shortest length and the top row having the longest length with 11 total sections. The tapered ends aid in locating the blocks into place and each block overlaps with the one above and/or below it. Each block is about 51 centimeters (20 inches) high and 1.17 meters (46 inches) wide.

Location: Diversion Box 241-BX-153 is located in the southeastern portion of the 241-BX Tank Farm.

Related Sites/Structures: Diversion Box 241-BX-153 interconnects with the following: 241-B-152 diversion box and 241-B-155 diversion box, 200-E-216-PL, 241-BX Tank Farm, 241-BY Tank Farm, and 241-BX-302A Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-BX-302A **Classification:** Accepted

Names: 241-BX-302A; 241-BX-302-A Catch Tank; 9053; 9253; 9453; Drain Lines V357; IMUST; Inactive Miscellaneous Underground Storage Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1985

Description: The buried tank is located inside the fenced 241-BX-155 Tank Farm. It is covered with gravel and surrounded with post and chain. The tank is marked with radiological and IMUST signs.

Location: The 241-BX-302A catch tank is located inside the 241-BX Tank Farm, southeast of the 241-BX-101 tank.

Process 241-BX-302A catch tank was designed to collect waste drainage and spills from the diversion

Description: boxes during transfers.

Related Sites/ Structures: 241-BX-302A catch tank is associated with the 241-BR-152, 241-BX-153, 241-BYR-152 and 241-BXR-152 diversion boxes. Lines V357, 9053, 9253, 9453 are the drain lines from the diversion boxes.

Waste Type: Process Effluent

Waste Description: The total tank volume was estimated in 1984 to be 3,160 liters (835 gallons) of sludge with no supernate. The volume of waste converts to a waste level of about 26 cm (10.25 inches) in the tank. The contents of this tank does not meet the definition of dangerous waste (according to Ecology) and in its present condition, poses no immediate environmental or human safety hazard, either from a criticality risk or leakage of hazardous waste.

Code: 244-BX DCRT **Classification:** Accepted

Names: 244-BX DCRT; 244-BX Double-Contained Receiver Tank; 244-BX Receiver Tank; 244-BX Receiver Vault; 244-BX RT; 244-BX-TK/SMP **Reclassification:** None

Type: Receiver Tank **Start Date:** 1/1/1983

Status: Inactive **End Date:** 1/1/2005

Description: 244-BX Receiver Tank is an underground, double-contained receiver tank (DCRT) constructed of carbon steel with a 117,335 liters (31,000 gallons) design capacity. The tank sets lengthwise in a reinforced concrete, steel-lined vault. The lowest portion of the vault is 8.5 m (28 feet) below grade and houses the tank. The upper portion of the vault is comprised of three sections; the pump pit in the southern section comprises almost half the space. The filter pit is in the middle section and the instrumentation pit is in the northern section of this part of the vault.

Location: 244-BX Receiver Vault is located on the north side of the 200 East Area about 847 meters (2,780 feet) north of the 221-B (B Plant) building and about 22.1 meters (72.6 feet) east of tank 241-BX-101.

Related Sites/ Structures: 244-BX Receiver Vault interconnects with the following: 241-B, 241-BX, & 241-BY Tank Farms.

Waste Type: Chemicals

Waste Description: 244-BX Receiver Tank can accept/transport waste from 241-B, 241-BX, & 241-BY Tank Farms. This tank last received waste from the 241-BY-102 and 241-BY-109 Single-Shell Tanks during the 1991 Stabilization Campaign. The tank currently contains 17,636 gallons (66,752 L) of waste. This represents just over one-half of the tank's design capacity.

Code: 241-BXR-151 **Classification:** Accepted

Names: 241-BXR-151; 241-BXR-151 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1984

Description: Diversion Box 241-BXR-151 is an underground structure constructed of concrete. Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately 14.6 meters (48 feet) by 9.4 meters (30.7 feet). The structure is L shaped from the side view with 4 meters (13 feet) of the north side being 5.1 meters (16.7 feet) high and 5.4 m (17.7 feet) of the southern portion being 2.4 meters (7.75 feet) high. The southern portion of the structure is 2.3 meter (7.5 feet) below grade. The concrete cover is made up in sections consisting of twenty nine interlocking pre-formed concrete blocks.

The concrete blocks are about .9 meters (3 feet) wide and range in thickness from .46 meters (1.5 feet) to .61 meters (2 feet). Each cover block is equipped with lifting bails made from steel bar. The blocks were sealed with a combination of hot sealing compound and a flexcell bituminous fiber expansion joint.

Location: Diversion Box 241-BXR-151 is located in the southern portion of the 241-BX Tank Farm, south of the 241-BX-107 tank.

Process Description: Diversion Box 241-BXR-151 connects with the 244-BXR Vault with the 241-BX Tank Farm.

Related Sites/ Structures: The diversion box is associated with the 244-BXR vault.

Waste Type: Process Effluent

Waste Description: This unit was used for the transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-BXR-152 **Classification:** Accepted

Names: 241-BXR-152; 241-BXR-152 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1984

Description: 241-BXR-152 is an underground concrete structure. It is co-located in a series of three diversion boxes that are joined together. 241-BXR-152 is the center diversion box. 241-BR-152 Diversion Box is on the eastern end and 241-BYR-152 is on the west end of the diversion box group. It's cover blocks and lifting bails are visible from the surface.

Location: Diversion Box 241-BXR-152 is located in the southeastern portion of the 241-BX Tank Farm, inside the tank farm fence. It is south of the 241-BX-101 tank.

Process Description: Diversion Box 241-BXR-152 is constructed of concrete with a height of approximately 3.4 meters (11.1 feet). Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately (10.7 meters (35 feet) by 11.5 meters (37.8 feet). The structure's cover is in sections consisting of several interlocking pre-formed concrete blocks. Diversion Boxes and receiving vaults drain to catch tanks or single-shell tanks.

Related Sites/ Structures: Diversion Box 241-BXR-152 is associated with the 241-BX Tank Farm and the 241-BX-302A catch tank.

Waste Type: Process Effluent

Waste Description: This unit was used to transfer waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 50 pounds (23 kilograms) of lead shielding may be stored in each diversion box.

Code: 241-BXR-153 **Classification:** Accepted

Names: 241-BXR-153; 241-BXR-153 Diversion Box; Line 9453 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1984

Description: The 241-BXR-153 Diversion box is co-located with the 241-BYR-153 Diversion Box. 241-

BXR-153 is on the east side of the 241-BYR-153 Diversion Box. The diversion boxes are underground concrete structures. Their cover blocks and lifting bails are visible from the surface.

Location: Diversion Box 241-BXR-153 is located in the southern portion of the 241-BX Tank Farm, inside the tank farm fence. It is south of the 241-BX-104 tank.

Process Description: Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks. Diversion Box 241-BXR-153 is constructed of concrete with a height of approximately 3.7 meters (12 feet). Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately 11.6 meters (38 feet) by 12 meters (39.3 feet). The structure's cover is in sections consisting of several interlocking pre-formed concrete blocks. The northern section consists of 12 blocks, center section has 11, and the southern section has 8 cover blocks.

Related Sites/Structures: Diversion Box 241-BXR-153 is associated with the 241-BX and 241-BY Tank Farms and the 241-B-152 and 241-B-155 diversion boxes. Line 9453 is the drain line.

Waste Type: Process Effluent

Waste Description: This unit was used to transfer waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 50 pounds (23 kilograms) of lead shielding may be stored in each diversion box.

Code: 244-BXR VAULT **Classification:** Accepted

Names: 244-BXR Vault; 244-BXR VAULT; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 9765 and 7453; 244-BXR Receiving Vault **Reclassification:** None

Type: Receiving Vault **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1985

Description: 244-BXR Vault is an underground concrete structure. Only 0.3 meters (1 foot) of the vault concrete cover appears above grade. The vault is surrounded with post and chain and marked with IMUST signs. The vault houses four tanks of two different sizes in the lower portion of the structure, each within a large concrete chamber. The tanks are numbered BXR-001, BXR-002, BXR-003, and BXR-011 from east to west. Each tank is tied individually to diversion box 241-BXR-151. The concrete cover is made up in sections consisting of twenty-nine interlocking pre-formed concrete blocks. The concrete blocks are about 1 meter (3.4 feet) wide and just over 2.4 meters (8 feet) long.

Location: The 244-BXR Vault is located in the southern portion of the 241-BY Tank Farm, inside the tank farm fence.

Related Sites/Structures: The 244-BXR Vault interconnects with the 241-BXR-151 Diversion Box and the 241-BX Tank Farm. Lines 9765 and 7453 are the drain lines to the 244-BXR sump.

Waste Type: Storage Tank

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. The waste volumes in tanks 244-BXR-001, 244-BXR-002, 244-BXR-003, and 244-BXR-011 are currently unknown. WHC-EP-0560 indicates large volumes of sludge and high cesium-137 concentrations in the 244-BXR vault. In addition, the nitrate and nitrite contents are elevated and could cause this waste to be designated as "dangerous" under the EPA and Ecology criteria. This vault does not pose a criticality hazard from the levels of fissionable isotopes that were found.

This Site has the Following SubSites:

for samples taken from the tank and sump in 1984 are available in WHC-SD-EN-ES-040, Rev 0. The sump may contain ferrocyanide discharged from the 241-BXR-151 diversion box.

The SubSite is Part Of:

Code: 244-BXR VAULT

Names: 244-BXR Vault; 244-BXR VAULT; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 9765 and 7453; 244-BXR Receiving Vault

Code: 244-BXR VAULT:3

Classification: Accepted

Names: 244-BXR VAULT:3; 244-BXR-003; 244-BXR-003 Tank and Sump

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: Tank 244-BXR-003 is located in an individual cell inside of the 244-BXR Vault. The concrete cell contains a sump with a capacity of 170 liters (45 gallons). Each cell within the vault is separated from the adjacent cell by a 0.6 meter (2 foot) thick concrete wall. The tank is constructed of 0.64 centimeter (1/4 inch) Type 347 stainless steel and is 4.3 meters (14 feet) in diameter, 3.7 meters (12 feet) tall, and has a nominal capacity of 56,800 liters (15,000 gallons). The tank contains in-tank cooling coils. When in service, Tank 244-BXR-002 and Tank 244-BXR-003 were configured and used identically. The tanks were used as a pair in waste blending operations. Under normal conditions a slurry stream was brought in from tank 244-BXR-001 and mixed with nitric acid. Tank 244-BXR-003 received a maximum of 53,860 liters (14,230 gallons) per day from tank 244-BXR-001 and a maximum of 29,500 liters (7,800 gallons) per day of nitric acid. The blended solution was then pumped to Tank 244-BXR-011. Tank 244-BXR-003 was isolated in 1985 as part of the 244-BXR Vault isolation. The results for samples taken from the tank and sump in 1984 are available in WHC-SD-EN-ES-040, Rev 0.

The SubSite is Part Of:

Code: 244-BXR VAULT

Names: 244-BXR Vault; 244-BXR VAULT; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 9765 and 7453; 244-BXR Receiving Vault

Code: 244-BXR VAULT:4

Classification: Accepted

Names: 244-BXR VAULT:4; 244-BXR-011; 244-BXR-011 Tank and Sump

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: Tank 244-BXR-011 is located in an individual cell inside of the 244-BXR Vault. The cell contains a sump with a capacity of 170 liters (45 gallons). Each cell within the vault is separated from the adjacent cell by a 0.6 meter (2 foot) thick concrete wall. The tank is constructed of 0.64 centimeter (1/4 inch) Type 347 stainless steel and is 6.1 meters (20 feet) in diameter, 6.1 meters (20 feet) tall, and has a nominal capacity of 189,000 liters (50,000 gallons). When in service, the tank was used as a pump tank for the Uranium Recovery operations. It received approximately 103,000 liters (27,200 gallons) per day of acid solutions from Tanks 244-BXR-002 and 244-BXR-003. The solutions were pumped from 244-BXR-011 to the 241-ER-151 diverter station and from there to U Plant for uranium recovery. Tank 244-BXR-011 was isolated in 1985 as part of the 244-BXR Vault isolation. The results for a tank solids analysis performed in 1978 are available in WHC-SD-EN-ES-040, Rev. 0. Literature indicates that the wall of the Tank 244-BXR-011 is buckled. Occurrence report 79-70 describes the condition of the tank. The tank failure was due to an overpressure condition on the exterior

of the tank from a higher than allowed liquid level in the cell.

The SubSite is Part Of:

Code: 244-BXR VAULT

Names: 244-BXR Vault; 244-BXR VAULT; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 9765 and 7453; 244-BXR Receiving Vault

Code: 241-BY-101

Classification: Accepted

Names: 241-BY-101; 241-BY-TK-101

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1971

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-101 tank is located in the southeast portion of the 241-BY Tank Farm.

Waste Type: Storage Tank

Waste Description: The tank received bismuth phosphate metal waste and supernatant containing tributyl phosphate waste and evaporator bottoms from 241-BY and -C tank farms. Presently, the waste material is classified as non-complexed and has a total waste volume of 1,465,182 liters (387,000 gallons). Saltcake comprises 1,052,230 liters (278,000 gallons), sludge comprises 412,565 liters (109,000 gallons), and no supernatant. There is no pumpable liquid remaining and 18,925 liters (5,000 gallons) drainable liquid remaining.

Reported Date: April 30, 1996

Code: 241-BY-102

Classification: Accepted

Names: 241-BY-102; 241-BY-TK-102

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1977

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-102 tank is located in the eastern portion of the 241-BY Tank Farm.

Waste Type: Storage Tank

Waste Description: The tank received bismuth phosphate metal waste and supernatant containing tributyl phosphate waste, coating waste; and evaporator bottoms from 241-C, -BX, and -BY tanks. Presently, the waste material is classified as non-complexed and has a total waste volume of 277,000 gallons (1,048,445 L). Saltcake comprises the 1,048,445 liters (277,000 gallons) with no sludge or pumpable liquid remaining. There is 41,635 liters (11,000 gallons) of drainable liquid remaining.

Reported Date: April 30, 1996

Code: 241-BY-103 **Classification:** Accepted
Names: 241-BY-103; 241-BY-TK-103 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1950
Status: Inactive **End Date:** 1/1/1973

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.8 meters (45.3 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-103 tank is located in the northeast portion of the 241-BY Tank Farm.

Release UPR-200-E-134

Description:

Waste Type: Storage Tank

Waste Bismuth phosphate metal waste; PUREX coating waste; and supernatant containing evaporator bottoms, cladding waste, tributyl phosphate waste, and PUREX high-level and organic wash wastes from 241-BX, -BY, -C, and -B tanks. Currently contains non-complexed waste with a total waste volume of 1,514,000 liters (400,000 gallons). Saltcake comprises 1,480,200 liters (391,000 gallons), sludge comprises 34,065 liters (9,000 gallons), and no supernatant. Pumpable liquid remaining is 518,545 liters 137,000 gallons).

Reported Date: April 30, 1996

Code: 241-BY-104 **Classification:** Accepted
Names: 241-BY-104; 241-BY-TK-104 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1950
Status: Inactive **End Date:** 1/1/1977

Description: The unit is a single-shell tank built in 1948. It is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-104 tank is located in the southern portion of the 241-BY Tank Farm.

Process The tank received metal waste via cascade from 241-BX-106 (1951). It overflowed to 241-BY-105 via cascade (1951).

Description:

Waste Type: Storage Tank

Waste Bismuth phosphate metal waste; tributyl phosphate waste; and supernatant containing coating waste, tributyl phosphate waste, ion exchange waste, and evaporator bottoms from 241-BY, -BX, and -C tanks. Tank BY-104 contains metal waste from BX tank farms (1951-4). Received accumulated sludge from other ferrocyanide settling tanks. Coating waste, ion exchange waste, and evaporator bottoms waste was sent to the tank through 1977. Currently contains non-complexed waste with a total waste volume of 1,385,310 liters (406,000 gallons), sludge

comprises 151,400 liters (40,000 gallons), and no supernatant. There is no pumpable liquid remaining and 68,130 liters (18,000 gallons) drainable liquid remaining. This is an ITS-2 unit.

Reported Date: April 30, 1996

Code:	241-BY-105	Classification:	Accepted
Names:	241-BY-105; 241-BY-TK-105	Reclassification:	None
Type:	Single-Shell Tank	Start Date:	1/1/1951
Status:	Inactive	End Date:	1/1/1974

Description: The unit is a single-shell tank built in 1948-1949. It is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-105 tank is located in the central portion of the 241-BY Tank Farm.

Release Description: This tank is an assumed leaker with a leak of approximately 30,280 liters (8,000 gallons) reported in 1984.

Process Description: The tank received U Plant uranium recovery process waste from 241-BY-107 and 241-BY-110. The metal waste was received via cascade from 241-BY-104, which had received metal waste via cascade from 241-BX-106.

Waste Type: Storage Tank

Waste Description: Tank BY-105 received metal waste via cascade (1951), U Plant waste from tanks 241-BY-107 and 241-BY-110 (1954) and U Plant waste intermittently until 1966. The tank received wastewater (1957-1974), coating waste (1962-1967), and was an in-tank solidification bottoms receiver (1967). The tank contained evaporator bottoms waste from the in-tank solidification program (1968-1974). Sixty-three tons of Portland cement was added in 1977. Presently, the waste material is classified as non-complexed and has a total waste volume of 1,903,855 liters (503,000 gallons). Saltcake comprised 1,737,315 liters (459,000 gallons), sludge comprises 166,540 liters (44,000 gallons), and no supernatant. There is no pumpable liquid remaining and 726,720 liters (192,000 gallons) drainable liquid remaining.

Reported Date: April 1996

Code:	241-BY-106	Classification:	Accepted
Names:	241-BY-106; 241-BY-TK-106	Reclassification:	None
Type:	Single-Shell Tank	Start Date:	1/1/1953
Status:	Inactive	End Date:	1/1/1977

Description: The unit is a single-shell tank built in 1948 which is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 m (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-106 tank is located in the northern portion of the 241-BY Tank Farm.

Release Description: Current tank leak volume estimate of 30, 280 liters (8, 000 gallons) is based on an average of 19 tanks.

Process Description: The tank was used as a settling tank for ferrocyanide scavenged uranium recovery process waste in 1956.

Waste Type: Storage Tank

Waste Description: Bismuth phosphate first-cycle waste (1953), in-plant ferrocyanide waste from 1955-7, wastewater (1957-1974), and supernatant containing coating waste (1961-1970). In 1968 the tank began to receive evaporator bottoms from 241-BY and -C tank farms waste. The tank received in-tank solidification bottoms and recycle waste between 1970 and 1976 and evaporator feed from 1976-7. The tank also received tributyl phosphate waste. Presently, the waste material is classified as non-complexed and has a total waste volume of 2,429,970 liters (642,000 gallons). Saltcake comprises 2,070,395 liters (547,000 gallons), sludge comprises 359,575 liters (95,000 gallons), and no supernatant. There is 616,955 liters (163,000 gallons) pumpable liquid remaining and 757,000 liters (200,000 gallons) drainable liquid remaining. This is an ITS-2 unit.

Reported Date: April 30, 1996

Code: 241-BY-107 **Classification:** Accepted

Names: 241-BY-107; 241-BY-TK-107 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1974

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 45 feet below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-107 tank is located in the southern portion of the 241-BY Tank Farm.

Release Description: A leak in the amount of 57,153 liters (15,100 gallons) occurred prior to or during 1984. The leak volume was based on observed liquid level decreases within the tank.

Waste Type: Storage Tank

Waste Description: The tank received tributyl phosphate waste; bismuth phosphate first-cycle waste; and supernatant containing tributyl phosphate waste, coating waste, and evaporator bottoms from 241-C, -BX, and -T (BY) tank farms. Presently, the waste material is classified as non-complexed and has a total waste volume of 1,006,810 liters (266,000 gallons). Saltcake comprises 779,710 liters (206,000 gallons), sludge comprises 227,100 liters (60,000 gallons), there is 94,625 liters (25,000 gallons) of drainable liquid and no pumpable liquid remaining. This is an ITS-2 unit.

Reported Date: April 30, 1996

Code: 241-BY-108 **Classification:** Accepted

Names: 241-BY-108; 241-BY-TK-108 **Reclassification:** None

Code: 241-BY-110	Classification: Accepted
Names: 241-BY-110; 241-BY-TK-110	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1977

Description: The unit is a single-shell tank built in 1948. The unit is comprised of carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-110 tank is located in the southwestern portion of the 241-BY Tank Farm.

Waste Type: Storage Tank

Waste Description: Initially tank 241-BY-110 received first cycle waste in 1951. The tank received decontamination waste in 1952. The tank contained first cycle supernatant until 1954 when it was pumped to a ditch. The tank received in-plant ferrocyanide waste from 1954-1947. The tank contained U Plant uranium recovery process waste and coating waste from 1957-1958. The tank also received wastewater in 1957. The tank contained coating waste in 1968-1969. From 1969-1976, the tank was used for storage of evaporator bottoms waste. The tank contained concentrated evaporator feed bottoms waste from 1976-1967. Presently, the waste material is classified as non-complexed and has a total waste volume of 1,506,430 liters (398,000 gallons). Saltcake comprises 1,116,575 liters (295,000 gallons), sludge comprises 398,000 liters (103,000 gallons), and no supernatant. There is no pumpable liquid remaining and 34,065 liters (9,000 gallons) drainable liquid remaining.

Reported Date: April 30, 1996

Code: 241-BY-111	Classification: Accepted
Names: 241-BY-111; 241-BY-TK-111	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1977

Description: The unit is comprised of a carbon steel liner within a reinforced concrete shell, 11.3 meters (37 feet) high, with a capacity of 2,869,030 liters (758,000 gallons). The bottom of the unit is 13.7 meters (45 feet) below grade, and the dome is located below grade for shielding purposes. This type was built to the original design, having a dished bottom but with an increased operating depth of 7 meters (23 feet).

Location: The 241-BY Tank Farm is directly north of the 241-BX Tank Farm. The 241-BY-111 tank is located in the western portion of the 241-BY Tank Farm.

Waste Type: Storage Tank

Waste Description: The tank received bismuth phosphate metal waste; tributyl phosphate; PUREX coating waste; organic wash waste; and supernatant containing evaporator bottoms, tributyl phosphate waste, and organic wash waste from 241-BY and -C tanks. Presently, the waste material is classified as non-complexed and has a total waste volume of 1,737,315 liters (459,000 gallons). Saltcake comprises 1,657,830 liters (438,000 gallons), sludge comprises 79,485 liters (21,000 gallons), there is no drainable liquid or pumpable liquid remaining. Net total of liquids pumped from this tank is 1,185,462 liters (313,200 gallons).

Reported Date: April 30, 1996

Names: 241-BYR-09A; 241-BY-109 Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1951
Status: Inactive **End Date:**
Description: The valve pit is an underground, concrete structure extending approximately 6.1 meters (20 feet) below ground surface.
Location: The valve pit is located inside the 241-BY Tank Farm, on the northwest side of the 241-BY-109 tank.
Process Description: The valve pit contained a pipe valve. The valve handle extended above the ground surface. It was installed as part of the uranium recovery operation project.

Code: 241-BYR-152 **Classification:** Accepted
Names: 241-BYR-152; 241-BYR-152 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1950
Status: Inactive **End Date:** 1/1/1984
Description: 241-BYR-152 is co-located in a series of three diversion boxes that are joined together. 241-BXR-152 is the center diversion box. 241-BR-152 Diversion Box is on the east end and 241-BYR-152 is on the west end of the diversion box group. The diversion boxes are underground cement structures. Their cover blocks and lifting bails are visible from the surface.
Location: Diversion Box 241-BYR-152 is located in the southeastern portion of the 241-BX Tank Farm, inside the tank farm fence. It is south of the 241-BX-101 tank.
Process Description: Diversion Box 241-BYR-152 is constructed of concrete with a height of approximately 3.7 meters (12 feet). Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately 11 meters (36.1 feet) by 11.5 meters (37.8 feet). The structure's cover is in sections consisting of several interlocking pre-formed concrete blocks. Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks.
Related Sites/ Structures: Diversion Box 241-BYR-152 is associated with the 241-BX Tank Farm and 241-BY Tank Farms and the 241-BXR-152 Diversion Box.
Waste Type: Process Effluent
Waste Description: This unit was used for the transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-BYR-153 **Classification:** Accepted
Names: 241-BYR-153; 241-BYR-153 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1950
Status: Inactive **End Date:** 1/1/1984
Description: The diversion boxes are underground concrete structures. Their cover blocks and lifting bails are visible from the surface. The 241-BYR-153 Diversion box is co-located with the 241-BXR-153 Diversion Box. 241-BYR-153 is on the west side of the 241-BXR-153 Diversion Box.
Location: Diversion Box 241-BYR-153 is located in the southern portion of the 241-BX Tank Farm,

inside the tank farm fence. It is south of the 241-BX-104 tank.

Process Description: Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks. Diversion Box 241-BYR-153 is constructed of concrete with a height of approximately 3.7 meters (12 feet). Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. The outer dimensions are approximately 11.3 meters (37 feet) by 10.5 meters (34.5 feet). The structure's cover is in sections consisting of several interlocking pre-formed concrete blocks. The northern section consists of 10 blocks, center section has 11, and the southern section has 8 cover blocks.

Related Sites/ Structures: Diversion Box 241-BYR-153 is associated with the 241-BX and 241-BY Tank Farms.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-BYR-154	Classification: Accepted
Names: 241-BYR-154; 241-BYR-154 Diversion Box	Reclassification: None
Type: Diversion Box	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1984

Description: The diversion box is an underground concrete structure. Its cover blocks and lifting bails are visible from the surface.

Location: Diversion Box 241-BYR-154 is located in the southwestern portion of the 241-BX Tank Farm, inside the tank farm fence. It is south of the 241-BX-110 tank.

Process Description: Diversion Box 241-BYR-154 is constructed of concrete with a height of approximately 3.7 meters (12 feet). Approximately 0.3 meters (1 foot) of the diversion box concrete cover appears above grade. While the outer dimensions are approximately 9.9 meters (32.5 feet) by 9.9 meters (32.5 feet), the structure's shape is irregular because the north section of the diversion box is short by 2.7 meters (9 feet) and the south side is short by 4.1 meters (13.5 feet). The structure's cover is in sections consisting of several interlocking pre-formed concrete blocks. The northern section consists of 10 blocks, center section has 9, and the southern section has 4 cover blocks. Diversion boxes and receiving vaults drain to catch tanks or single-shell tanks.

Related Sites/ Structures: Diversion Box 241-BYR-154 interconnects with the following: 241-BY Tank Farm.

Waste Type: Process Effluent
Waste Description: This unit was used for the transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 200-E-59	Classification: Accepted
Names: 200-E-59; 241-BY-ITS2 Condenser Vessel; 241-BY-ITS2-TK-1; IMUST; ITS-2	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1968
Status: Inactive	End Date: 1/1/1977

Status: Inactive**End Date:** 1/1/1999

Description: The site is the soil inside and adjacent to the chain link fence that surrounds the 241-B Tank Farm. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The individual unplanned releases associated with the 241-B Tank Farm are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas will also be considered tank farm soil. A posted Contamination Area, marked with steel posts and chain, currently extends east and south outside the 241-B Tank Farm fence. The posted area size and shape varies with additional radiological surveys.

Location: The site is located east of Baltimore Ave. and south of 12th Street in 200 East Area.

Release Description: The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks.

Related Sites/ Structures: Unplanned Releases UPR-200-E-4, UPR-200-E-6, UPR-200-E-38, UPR-200-E-73, UPR-200-E-74, UPR-200-E-75, UPR-200-E-76, UPR-200-E-108, UPR-200-E-109, UPR-200-E-127, UPR-200-E-128, UPR-200-E-129, and UPR-200-E-130 are associated with the 241-B Tank Farm. Two of these sites are listed in TPA Appendix B as TSD-associated sites (UPR-200-E-76 and UPR-200-E-109). All are to be addressed with the closeout of the tank farm TSD. As such, site 200-E-120 is also a TSD-associated site.

Waste Type: Soil

Waste Description: Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne contamination spreads occurred from activities conducted in valve pits and diversion boxes. Both types of releases contributed to the contamination in the soil.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-4

Names: UPR-200-E-4; 241-B-151 Diversion Box Contamination Spread; UN-200-E-4

Code: UPR-200-E-6

Names: UPR-200-E-6; Contamination Around the 241-B-153 Diversion Box; UN-200-E-6

Code: UPR-200-E-38

Names: UPR-200-E-38; Release from 241-B-152; UN-200-E-38; UN-216-E-4

Code: UPR-200-E-73

Names: UPR-200-E-73; 241-B-151 Diversion Box Contamination; UN-200-E-73; UN-216-E-1

Code: UPR-200-E-74

Names: UPR-200-E-74; 241-B-152 Diversion Box Contamination; UN-200-E-74; UN-216-E-2

Code: UPR-200-E-75

Names: UPR-200-E-75; 241-B-153 Diversion Box Contamination; UN-200-E-75; UN-216-E-3

Code: UPR-200-E-76

Names: UPR-200-E-76; 241-B-152 Pipeline Break; UN-200-E-76; UN-216-E-4

Code: UPR-200-E-108

Names: UPR-200-E-108; 241-B-102 Tank Release; UN-200-E-108

Code: UPR-200-E-109

Names: UPR-200-E-109; Release from 241-B-104; UN-200-E-109

Code: UPR-200-E-105
Names: UPR-200-E-105; Liquid Release in the 241-BY Tank Farm; UN-200-E-105

Code: UPR-200-E-110
Names: UPR-200-E-110; 241-BY Valve Pit Release; UN-200-E-110

Code: UPR-200-E-116
Names: UPR-200-E-116; 241-BY-112 Flush Release; UN-200-E-116

Code: UPR-200-E-131
Names: UPR-200-E-131; 241-BX-102 Release; UN-200-E-131

Code: UPR-200-E-132
Names: UPR-200-E-132; 241-BX-102 Tank Leak; UN-200-E-132

Code: UPR-200-E-133
Names: UPR-200-E-133; 241-BX-108 Leak; UN-200-E-133

Code: UPR-200-E-134
Names: UPR-200-E-134; 241-BY-103 Tank Leak; UN-200-E-134

Code: UPR-200-E-135
Names: UPR-200-E-135; 241-BY-108 Tank Leak; UN-200-E-135

Code: 200-E-197-PL **Classification:** Accepted

Names: 200-E-197-PL; Encased Pipelines Between 241-BR-152 Diversion Box and 241-B Tank Farm; Lines 9002, 9006, 9010, 9014, 9017, 9020, 9031, 9032, 9035, 9037, 9038, 9041, 9044 and 9047 **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground concrete transfer line encasement. Fourteen 10 centimeter (6 inch) diameter, carbon steel lines are located within the same concrete encasement. They are placed with seven lines on the bottom of the encasement and seven lines above those lines within the concrete encasement.

Location: The pipeline extends from 241-BR-152 Diversion Box, inside 241-BX Tank Farm to the 241-B-101, 241-B-102 and 241-B-103 tanks inside 241-B Tank Farm.

Related Sites/Structures: The waste lines are associated with 241-BR-152 diversion Box, 241-B-101, 241-B-102 and 241-B-103 single shell tanks.

Code: 200-E-208-PL **Classification:** Accepted

Names: 200-E-208-PL; Lines V304 and V305 from 241-BY Tank Farm to 241-B-252 Diversion Box **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two underground, 10 centimeter (4 inch) diameter, carbon steel lines buried in the same soil trench.

Location: The lines extend out of the north side of the 241-BY Tank Farm, turn south on the west side of Baltimore Ave. and cross under Baltimore Ave. to connect to the 241-B-252 Diversion Box, located inside the 241-B Tank Farm.

Related Sites/ Structures: The lines are associated with tanks 241-BY-109 and 241-BY-111 and 241-B-252 Diversion Box.

Code: 200-E-216-PL **Classification:** Accepted

Names: 200-E-216-PL; Lines V235, V236, V237, V242, C251, V252, and V253; Transfer Lines Between 241-BX-153, 241-B-151 and 241-B-152 Diversion Boxes **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is seven stainless steel lines that are buried in the same soil trench. All of the lines are 9 centimeter (3.5 inch) diameter lines.

Location: The transfer lines are located southeast of 241-BX Tank Farm. The lines exit the southeast corner of 241-BX Tank Farm and cross under Baltimore Ave. to connect to the diversion boxes inside 241-B Tank Farm. The lines branch off, forming a "V". Lines V251, V252, V253 and V242 go to the 241-B-152 Diversion Box. Lines V235, V236 and V237 go to the 241-B-151 Diversion Box (see subsites).

Related Sites/ Structures: The transfer lines are associated with the 241-BX-153 Diversion Box, located inside 241-BX Tank Farm and 241-B-151 and 241-B-152 Diversion Boxes, located inside 241-B Tank Farm.

This Site has the Following SubSites:

Code: 200-E-216-PL:1

Names: 200-E-216-PL:1; All seven lines; V235, V23, V237, V251, V252, V253 and V242

Code: 200-E-216-PL:2

Names: 200-E-216-PL:2; Northern Portion of Soil Trench Containing Lines V235, V236 and V237

Code: 200-E-216-PL:3

Names: 200-E-216-PL:3; Southern Portion of Soil Trench Containing Lines V251, V252, V253 and V242

Code: 200-E-216-PL:1 **Classification:** Accepted

Names: 200-E-216-PL:1; All seven lines; V235, V23, V237, V251, V252, V253 and V242 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Subsite 1 is the portion of the group of lines exiting the 241-BX Tank Farm where all seven lines are in the same soil trench.

The SubSite is Part Of:

Code: 200-E-216-PL

Names: 200-E-216-PL; Lines V235, V236, V237, V242, C251, V252, and V253; Transfer Lines Between 241-BX-153, 241-B-151 and 241-B-152 Diversion Boxes

Code: 200-E-216-PL:2 **Classification:** Accepted

Names: 200-E-216-PL:2; Northern Portion of Soil Trench Containing Lines V235, V236 and V237 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive

End Date:

Description: Subsite 2 is the northern portion of the split soil trench containing lines V235, V236 and V237 that connects to the 241-B-151 Diversion Box.

The SubSite is Part Of:

Code: 200-E-216-PL

Names: 200-E-216-PL; Lines V235, V236, V237, V242, C251, V252, and V253; Transfer Lines Between 241-BX-153, 241-B-151 and 241-B-152 Diversion Boxes

Code: 200-E-216-PL:3

Classification: Accepted

Names: 200-E-216-PL:3; Southern Portion of Soil Trench Containing Lines V251, V252, V253 and V242

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: Subsite 3 is the southern portion of the split soil trench containing lines V251, V252, V253 and V242 that connects to the 241-B-152 Diversion Box.

The SubSite is Part Of:

Code: 200-E-216-PL

Names: 200-E-216-PL; Lines V235, V236, V237, V242, C251, V252, and V253; Transfer Lines Between 241-BX-153, 241-B-151 and 241-B-152 Diversion Boxes

WMA C

Code: 216-C-8 **Classification:** Accepted
Names: 216-C-8; 216-C-8 Crib; 216-C-8 French Drain; 271-CR Crib **Reclassification:** None
Type: French Drain **Start Date:** 6/1/1962
Status: Inactive **End Date:** 6/1/1965

Description: In June 2001, the crib location was no longer marked or posted. The area had been recently covered with gravel during road construction in the vicinity of 7th Street and Buffalo Ave. In 2006, a single post and sign marked the crib location. The pipeline that fed 216-C-8 is WIDS sitecode 200-E-290-PL.

Location: The site is located southeast of the 241-C Tank Farm, outside the tank farm perimeter fence.

Process Description: The site received radioactively contaminated ion exchange waste from the 271-CR Building

Related Sites/Structures: The site is associated with the 271-CR building and pipeline 200-E-290-PL.

Waste Type: Process Effluent

Waste Description: The site received the ion exchange waste from the 271-CR Building. The waste volume is unknown. The site contains less than 10 curies total beta.

Code: 241-C-101 **Classification:** Accepted
Names: 241-C-101; 241-C-TK-101 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1970

Description: The tank is an underground, steel tank with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. The footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished-shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A steel liner lines the bottom and sidewall of the tank.

Location: The 241-C-101 tank in the eastern portion of the 241-C Tank Farm.

Process Description: The 241-C-101 tank received bismuth phosphate metal waste, tributyl phosphate process waste, and PUREX process coating waste from tank 241-C-106, which had high levels of strontium in the waste. From 1952 to 1955 the tank was sluiced to recover uranium that had been discharged as waste.

Related Sites/Structures: Four monitoring drywells are identified for this tank. Additionally this tank is equipped with pumps, thermocouples and other ancillary equipment. This tank cascades to 241-C-102. Nine risers are associated with the tank.

Waste Type: Storage Tank

Waste Description: This tank contains bismuth phosphate metal waste, tributyl phosphate waste, and PUREX coating waste. Document WHC-SD-WM-ER-349 references the most complete estimated inventory for this tank. Because this tank was the first tank in a cascading series, most of the solids precipitated out of the solutions into this tank.

Related Sites/ Structures: Structures associated with this tank include 5 drywells, tank monitoring instrumentation, tank risers, the three other tanks in this waste cascading series, and associated piping.

Waste Type: Storage Tank

Waste Description: This tank has waste from the following process: PUREX coating waste, tributyl phosphate waste, coating waste, PUREX high-level waste, B Plant high-level waste, B Plant waste fractionization low-level waste, PUREX sludge supernatant, PUREX low-level waste, waste fractionization PUREX sludge, PUREX organic wash waste, laboratory waste, decontamination waste, REDOX ion exchange waste, REDOX high-level waste, noncomplexed waste, waste fractionization ion exchange waste, N Reactor waste, PNL waste, and evaporator bottoms from 241-A -B, -BX, and -C tank farms. This unit was used as the receiver for operating P-10 saltwell systems within the 241-C Tank Farm. An additional source of waste is PUREX and insoluble strontium-rich sluicing solids from the operation of 244-CR Vault.

Code: 241-C-103 VP **Classification:** Accepted

Names: 241-C-103 VP; 241-C Valve Pit; 241-C-103 Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1979

Status: Inactive **End Date:**

Description: The waste site is an underground corrugated metal structure.

Location: The valve pit is located inside 241-C tank farm, on the southwest side of the 241-C-103 tank.

Process Description: The valve pit was installed as part of the C Farm tank waste interim stabilization salt well system.

Code: 241-C-104 **Classification:** Accepted

Names: 241-C-104; 241-C-TK-104 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1980

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. The footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished-shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A steel liner lines the bottom and sidewall of the tank.

Location: Tank 241-C-104 is located in the southern row of tanks, inside the 241-C Tank Farm.

Process Description: This tank was sluiced during the 1952 to 1955 uranium recovery sluicing operation. During 1954, this tank was used as a tank-to-tank sluicing receiver. This waste was later sent to the 244-CR process vault. The tank began receiving bismuth phosphate metal waste in 1946.

Related Sites/ Structures: Tank 241-C-104 is the first tank in the 241-C-104, 241-C-105, and 241-C-106 cascade line. Other associated structures include ventilation, monitoring drywells, instrumentation, and piping.

Waste Type: Storage Tank

Waste Description: Waste is comprised of unknown waste, sludge, and pumpable liquid. This tank received bismuth phosphate metal waste starting in 1946, strontium-leached sluicing solids in 1977, and

fissile material (including uranium-223) from PUREX thorium campaigns.

Code: 241-C-105 **Classification:** Accepted
Names: 241-C-105; 241-C-TK-105 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1979

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. The footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished-shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A steel liner lines the bottom and sidewall of the tank.

Location: Tank 241-C-105 is located near the center of the 241-C Tank Farm.

Process Description: As part of the 241-C-104, 241-C-105, 241-C-106 cascade line, this tank received bismuth phosphate metal waste from 1947 until 1953. This tank was used as a receiver for PUREX sludge supernate enroute to B Plant for cesium ion exchange processing. This tank was sluiced during 1952 and 1953 for the uranium recovery program.

Related Sites/ Structures: The tank is associated with Radiation monitoring wells, 8 active; Operating exhausters; Temperature element, read manually; Liquid level gage, and automatic on CASS.

Waste Type: Storage Tank

Waste Description: This tank was used as a receiver tank for PUREX sludge supernate enroute to B Plant. It received bismuth phosphate metal waste from 1947 to 1953. The tank contains unknown waste, sludge, and pumpable liquid.

Code: 241-C-106 **Classification:** Accepted
Names: 241-C-106; 241-C-TK-106 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/1979

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. This footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A partial spherical shell dome rests on the cylindrical wall. A steel liner lines the bottom and sidewall of the tank. The operating depth for this tank is 5.2 meters (17 feet).

Location: The tank is located in the northeastern portion of the 241-C Tank Farm.

Process Description: This tank is the last tank in the 241-C-104, 241-C-105 and 241-C-106 cascade. One of the first generation tanks, this unit was designed to receive non-boiling waste. Tank 241-C-106 received bismuth phosphate metal waste in 1947. The tank was sluiced from 1952 to 1955 for uranium recovery efforts.

Related Sites/ Structures: Associated structures for 241-C-106 include monitoring equipment, cascade piping and tanks, ventilation and drywells.

Waste Type: Storage Tank

Waste Description: This tank received bismuth phosphate metal waste, and PUREX process fission product waste,

Description: which included large amounts of strontium. The tank was sluiced in 1952 -1955 for the uranium recovery project. The waste contains process supernate, unknown waste products, sludge, and pumpable liquid.

Code: 241-C-107 **Classification:** Accepted

Names: 241-C-107; 241-C-TK-107 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1978

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. This footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A partial spherical shell dome rests on the cylindrical wall. A steel liner lines the bottom and sidewall of the tank. The operating depth for this tank is 5.2 meters (17 feet).

Location: The 241-C-107 tank is located in the northwestern portion of the 241-C Tank Farm.

Process Description: This is the first tank in the 241-C-107, 241-C-108, 241-C-109 cascade line, designed to receive non-boiling waste. Tank 241-C-107 received first cycle waste and process decontamination wastes from B Plant. This tank also received insoluble, strontium-leached sluicing solids.

Related Sites/ Structures: Structures associated with this tank include other tanks in the cascade, piping and pumps, instrumentation, and ventilation.

Waste Type: Storage Tank

Waste Description: This tank received Bismuth Phosphate first cycle waste beginning in 1946. The tank received insoluble strontium leached, sluicing solids in 1977. This unit is a low-heat load, passively ventilated tank.

Code: 241-C-108 **Classification:** Accepted

Names: 241-C-108; 241-C-TK-108 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/1977

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. This footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A partial spherical shell dome rests on the cylindrical wall. A steel liner lines the bottom and sidewall of the tank. The operating depth for this tank is 5.2 meters (17 feet).

Location: Tank 241-C-108 is located near the center of the 241- C Tank Farm.

Process Description: Tank 241-C-108 was designed as the second tank of the 241-C-107, 241-C-108, 241-C-109 cascade series. It received non-boiling, cascade overflow from tank 241-C-107. Wastes received by this tank include first cycle waste, and process decontamination waste from B Plant. The tank also acted as a primary settling tank for "In-Farm" waste scavenging for the Uranium Recovery process.

Related Sites/ Structures: Structures associated with this tank include cascade piping, tanks 241-C-107, and 241-C-109, dry wells, instrumentation, and ventilation.

designed to receive non-boiling waste. The tank received bismuth phosphate first cycle waste from 1946 to 1967. Tanks 241-C-108, 241-C-109, 241-C-110, 241-C-111, and 241-C-112 were also used as primary settling tanks for "In-Farm" scavenging for the Uranium Recovery process.

Related Sites/ Structures: Associated structures with this tank include four dry wells, instrumentation the two other tanks in the cascade series, piping, and ventilation.

Waste Type: Storage Tank

Waste Description: Tank 241-C-110 is the first tank in the 241-C-110, 241-C-111, and 241-C-112 cascade line.

This tank received bismuth phosphate first cycle waste and process decontamination waste from B Plant. Additionally, this tank was used as a primary settling tank for "In-Farm" scavenging for the Uranium Recovery process.

Code: 241-C-111

Classification: Accepted

Names: 241-C-111; 241-C-TK-111

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1978

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. This footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A partial spherical shell dome rests on the cylindrical wall. A steel liner lines the bottom and sidewall of the tank. The operating depth for this tank is 5.2 meters (17 feet).

Location: The 241-C-111 tank is located on the western side of the 241-C Tank Farm.

Process Description: This tank is the second tank in the 241-C-110, 241-C-111, 241-C-112 cascade line. It was designed to receive non-boiling waste. The tank received bismuth phosphate first cycle waste beginning in 1946. Tanks 241-C-108, 241-C-109, 241-C-110, 241-C-111, and 241-C-112 were also used as primary settling tanks for "In-Farm" scavenging for the Uranium Recovery process.

Related Sites/ Structures: Associated with this tank include five dry wells, instrumentation, the two other tanks in the cascade series, piping, and ventilation.

Waste Type: Storage Tank

Waste Description: Tank 241-C-111 is the second tank in the 241-C-110, -111, and -112 cascade line. This tank received bismuth phosphate first cycle waste and B Plant decontamination waste. Additionally, this tank was used as a primary settling tank for "In-Farm Scavenged Uranium". There is no pumpable liquid remaining in the tank.

Code: 241-C-112

Classification: Accepted

Names: 241-C-112; 241-C-TK-112

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1976

Description: The underground tank is constructed with a cylindrical reinforced-concrete wall that rests on a reinforced-concrete cylindrical footing. This footing gradually tapers to a reinforced-concrete basemat foundation. The basemat foundation is dished shaped and lined with a layer of grout and a layer of asphaltic waterproofing membrane. A partial spherical shell dome rests on the

Location: west of the 241-C-151 Diversion Box.

Process Description: Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks or spills from waste transfers and drainage during jumper operations within the unit.

Related Sites/Structures: The 241-C-152 diversion box is associated with 241-C-301 Catch Tank. This unit interconnects the 241-B-154, and 241-B-153 diversion boxes with the 241-C Tank Farm.

Waste Type: Equipment
Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Process Effluent
Waste Description: This unit was used to transfer waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations. Radiological contamination is estimated to be extremely high.

Code: 241-C-153	Classification: Accepted
Names: 241-C-153; 241-C-153 Diversion Box	Reclassification: None
Type: Diversion Box	Start Date: 1/1/1946
Status: Inactive	End Date: 1/1/1985

Description: The diversion box is an underground, reinforced concrete structure. Surface features include concrete cover blocks and lifting bails.

Location: The 241-C-153 Diversion Box is located in the southwestern portion of the 241-C Tank Farm, south of the 241-C-110 tank.

Process Description: Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks or spills resulting from waste transfers during jumper operations within the unit.

Related Sites/Structures: The diversion box is associated with the 241-C-301 Catch Tank and 241-C-Tank Farm. This unit interconnects the 241-C-151 and 241-C-152 diversion boxes.

Waste Type: Process Effluent
Waste Description: The diversion box transferred liquid waste from the processing plants to the tank farms. The Part A Permit assumed that 50 pounds (23 kilograms) of lead shielding bricks may also be stored in this diversion box.

Waste Type: Chemicals
Waste Description: This unit was used to transfer waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. Diversion box contamination is estimated to be high in alpha, beta, and gamma. Chemical residues may be present.

Code: 241-C-201	Classification: Accepted
Names: 241-C-201; 241-C-TK-201	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1947
Status: Inactive	End Date: 1/1/1977

Description: The underground tank is a vertically configured, reinforced-concrete cylinder, with a slab roof. It is lined with steel. The tank rests on a footing which is integral to the tank base.

Location: The 241-C-201 tank is located on the north side of the 241-C Tank Farm, inside the tank farm

fence.

Process Description: This tank is a 200-series single-shell tank, designed to receive non-boiling waste. Tanks 241-C-201, 241-C-202, 241-C-203, and 241-C-204 have tie lines between each tank to equalize the waste volumes in each tank. This tank received metal waste, and is plumbed to the 241-C-252 diversion box.

Related Sites/ Structures: Structures associated with this tank include: ventilation, piping, instrumentation, and the 241-C-202, 241-C-203 and 241-C-204 tanks.

Waste Type: Storage Tank

Waste Description: Tank 241-C-201 began to operate in 1947 by receiving bismuth phosphate metal waste. This tank was sluiced during the uranium recovery process. No pumpable liquid remains in the tank.

Code: 241-C-202 **Classification:** Accepted

Names: 241-C-202; 241-C-TK-202 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/1977

Description: The underground tank is a vertically configured, reinforced-concrete cylinder, with a slab roof. It is lined with steel. The tank rests on a footing which is integral to the tank base.

Location: Tank 241-C-202 is located on the north side of the 241-C Tank Farm, inside the tank farm fence.

Process Description: This tank is a 200-series single-shell tank, designed to receive non boiling waste. Tanks 241-C-201, 241-C-202, 241-C-203, and 241-C-204 have lines between each tank to equalize the waste volumes in each tank. This tank received metal waste, and is plumbed to the 241-C-252 diversion box.

Related Sites/ Structures: Structures associated with this tank include: ventilation, piping, instrumentation, and the other 200-series tanks.

Waste Type: Storage Tank

Waste Description: Tank 241-C-202 began to operate in 1947 by receiving metal waste. Tanks 241-C-201, -202, -203, and -204 were used to settle waste while supernatant was sent to a crib. This tank was sluiced for uranium recovery. No pumpable liquid remains in the tank. Metal waste in the tank was removed in 1954 and the tank received waste from hot semi-works in 1955 and 1956. Most of the hot semi-works waste was removed in 1970. Waste retrieval completed in August 2005 with the retrieval of 1,032 gallons of waste, resulting in an ending volume in the tank of 147 gallons. Retrieval was accomplished using a vacuum retrieval system. Waste was transported to 241-AN-106 through a hose-in-hose transfer line.

Code: 241-C-203 **Classification:** Accepted

Names: 241-C-203; 241-C-TK-203 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/1976

Description: The site is a vertically configured, underground reinforced-concrete tank, with a slab roof. It is lined with steel. The tank rests on a footing which is integral to the tank base.

Location: The 241-C-203 tank is located on the north side of the 241- C Tank Farm, inside the tank farm fence.

Process Description: This tank is a 200-series single-shell tank, designed to receive non-boiling waste. Tanks 241-C-201, 241-C-202, 241-C-203, and 241-C-204 have lines between each tank to equalize the waste volumes. This tank received metal waste and is plumbed to the 241-C-252 diversion box.

Related Sites/ Structures: Structures associated with this tank include; ventilation, piping, instrumentation, and the other 200-series tanks.

Waste Type: Storage Tank

Waste Description: Tank 241-C-203 began to operate in 1947 by receiving metal waste. In 1986, a cracked sludge surface was observed with no visible liquids. Approximately 9504 liters (2501 gallons) of waste was removed from this tank and transferred to double shell tank 241-AN-106 in 2004.

Code: 241-C-204 **Classification:** Accepted

Names: 241-C-204; 241-C-TK-204 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1977

Description: The tank is a vertically configured, reinforced-concrete cylinder, with a slab roof. The tank is lined with steel. The tank rests on a footing which is integral to the tank base.

Location: The 241-C-204 tank is located on the north side of the 241- C Tank Farm, inside the tank farm fence.

Process Description: This tank is a 200-series single shell tank, designed to receive non-boiling waste. Tanks 241-C-201, 241-C-202, 241-C-203, and 241-C-204 have lines between each tank to equalize the waste volumes in each tank. This tank received metal waste, and is plumbed to the 241-C-252 diversion box.

Related Sites/ Structures: Structures associated with this tank include; ventilation, piping, instrumentation, and the other 200-series C Tank Farm tanks.

Waste Type: Storage Tank

Waste Description: Tank 241-C-204 began to operate in 1948 by receiving metal waste. Tanks 241-C-201, -202, -203, and -204 were used to settle waste while supernatant was sent to a crib. This tank was sluiced for uranium recovery. No pumpable liquid remains in the tank.

Code: 241-C-252 **Classification:** Accepted

Names: 241-C-252; 241-C-252 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1985

Description: The diversion box is an underground, reinforced concrete structure. Surface features include concrete cover blocks and lifting bails.

Location: The diversion box is located in the northwest portion of the 241-C Tank Farm, west of tank 241-C-204.

Process Description: Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks and spills from waste transfers and drainage during jumper operations within the unit.

Related Sites/ Structures: Diversion box 241-C-252 is associated with the 241-C-301 Catch Tank and the 241-C Tank

Farm. The unit interconnects diversion box 241-C-151 and the 241-C Tank Farm.

Waste Type: Process Effluent

Waste Description: This unit was used to transfer waste solutions from processing and decontamination operations.

Volumes were variable according to specific plant operations. Radiological contamination is expected to be high in alpha, beta, and gamma. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment

Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in

each diversion box.

Code: 241-C-301

Classification: Accepted

Names: 241-C-301; 241-C-301C; 241-C-301-C Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines V114 and V155

Reclassification: None

Type: Catch Tank

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1985

Description: The 241-C-301 Catch tank is an underground tank. It is surrounded with post and chain and marked with Inactive Miscellaneous Underground Storage Tank (IMUST) signs.

Location: The 241-C-301 catch tank is located in the northwest portion of the 241-C Tank Farm, northwest of the 241-C-112 tank.

Process Description: Tank 241-C-301C received drainage from diversion boxes 241-C-151, 241-C-152, 241-C-153, and 241-C-252. These diversion boxes received wasted transfers from and the C Farm, B Plant, and PUREX. Incidental wastes were received from the Hot Semiworks operations. Catch tanks are components of tank farms that collect spills and/or leaks during waste transfers between processing facilities and tank farms. Catch tanks also received any water from rainfall, snowmelt, or dust that entered the diversion boxes (the diversion boxes were later weather proofed.) The tanks were coal coated for corrosion protection, and later underwent two cathodic protection upgrades. The catch tank was constructed with 15.2 centimeter (6 inch) thick walls, coated with Amercoat to obtain a non-porous surface.

Related Sites/Structures: This tank is associated with 241-C-151, 241-C-152, 241-C-153, 241-C-252 diversion boxes and 241-C Tank Farm. Line V114 and V155 are the drain lines from the diversion boxes.

Waste Type: Storage Tank

Waste Description: The 241-C-151, 241-C-152, 241-C-153 and 241-C-252 diversion boxes drained waste solutions from leaks or spills that occurred during waste transfer operations. The wastes received in the catch tank include waste from B Plant, PUREX and Hot Semiworks operations. In 1994, the tank contained 5586 liters (1470 gallons) of liquid supernate and 34,260 liters (9016 gallons) of sludge. The tank may also have received ferrocyanide waste.

Code: 241-C-801

Classification: Accepted

Names: 241-C-801; 241-C-801 Cesium Loadout Facility

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1962

Status: Inactive

End Date: 1/1/1976

Description: The site is a single story building located inside the 241-C Tank Farm. The upper portion of the

Waste Type: Equipment
Waste Description: It was estimated that approximately 50 pounds (23 kilograms) of waste lead was stored in this unit.

Code: 241-CR-152 **Classification:** Accepted

Names: 241-CR-152; 241-CR-152 Diversion Box; Line 8253 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1985

Description: The diversion box is an underground, reinforced concrete structure. Surface features include concrete cover blocks and lifting bails.

Location: The 241-CR-152 Diversion Box is located in the southern portion of the 241-C Tank Farm, northwest of the 244-CR Vault. It is attached to the 241-CR-153 Diversion Box.

Process Description: This diversion box is designed to contain leaks from transfers and drainage from operations within the unit. This unit acts as a secondary containment for transfer line jumper connections.

Related Sites/Structures: This unit is interconnected to both the 241-CR-151 diversion box and all the tanks of the 241-C Tank Farm. Line 8253 is the diversion box drain line.

Waste Type: Equipment
Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation.

Code: 241-CR-153 **Classification:** Accepted

Names: 241-CR-153; 241-CR-153 Diversion Box; Line 8307 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1985

Description: The diversion box is an underground, reinforced concrete structure. Surface features include concrete cover blocks and lifting bails.

Location: The 241-CR-153 Diversion Box is located in the southern portion of the 241-C Tank Farm, northwest of the 244-CR Vault. It is attached to the 241-CR-152 Diversion Box.

Process Description: This diversion box is designed to contain leaks from transfers and drainage from operations within the unit. This unit acts as secondary containment for transfer line jumper connections.

Related Sites/Structures: This unit adjoins the 241-C-152 diversion box. Line 8307 is the diversion Box drain line.

Waste Type: Chemicals
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation.

Waste Type: Equipment
Waste Description: It was estimated that approximately 50 pounds (23 kilograms) of waste lead was stored in this unit.

Code: 244-CR VAULT **Classification:** Accepted
Names: 244-CR Vault; 244-CR VAULT; Line 8765 **Reclassification:** None
Type: Receiving Vault **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1988

Description: This vault is an underground, reinforced concrete structure. It is a two-level, multi-cell structure (cells 1, 2, 3 and 11). The lower cell contains the process vessels. Upper cells contain piping and equipment. The structure is constructed with concrete cover blocks which, when removed, allow access to the upper cells. The lower cells contain four process vessels: TK-CR-001, TK-CR-011, TK-CR-002, and TK-CR-003 (see subsites).

Location: This unit is located in the southern portion of the 241-C Tank Farm, southeast of the 241-CR-151 Diversion Box.

Release Description: In 2008, the Hanford C-Farm Leak Assessment Report (RPP-ENV-33418) was issued. It documented failed pipelines and unplanned releases associated with C Farm activities. On February 18, 1965, the 244-CR Vault was found flooded up to approximately the level of the tank tops. Immediate steps were taken to reduce the liquid level by jetting the solution to the 011 Tank. Partial cause of the flooding is attributed to a failure in the coating waste line which enters the 241-CR-151 diversion box. Drainage from this diversion box collects in the 002-CR vault sump. Water from a sampler flush line and drainage from rain and snow contributed to the liquid level in the vault. To date, the 001, 002, and 003 sumps have been emptied, and the 011 sump is being emptied, to the 011 Tank. This liquid is being pumped from the 011 Tank to Tank 103-A in the 241-A Tank Farm. In May 1966, a leak in the PUREX coating waste route (via 241-CR-152 diversion box) was detected by an abnormal liquid level increase of the 002CR vault sump. The leaking flexible jumper in the 241-CR-152 diversion box was replaced. Diversion box 241-CR-152 and 244-CR Vault sump are concrete structures with painted surfaces. It is uncertain whether leaked waste was contained inside diversion box 241-CR-152 and 244-CR Vault sump.

Process Description: The receiver was used for interim storage and processing operations of 241-C Tank Farm. It had the capacity to add chemicals, mix solutions and cool the tank contents. Waste was also received from the Hot Semiworks Facility. The 244-CR-003 Tank in the 244-CR Vault is used for the interim storage of salt well waste from 241-C Tank Farm.

Related Sites/ Structures: The associated structures include the 241-C Tank Farm and the Hot Semiworks operations. Line 8765 is the drain line from 241-CR-151 to the 244-CR sump.

Waste Type: Storage Tank
Waste Description: The unit contained the following wastes: metal waste, first cycle waste, B Plant decontamination waste, PUREX fission product waste, uranium recovery sluicing waste, coating waste, radioactive condensates, sink wastes, REDOX spent solvent waste, other REDOX waste, PUREX organic wash waste, PUREX acid process waste, PUREX spent solvent waste, strontium recovery waste, and critical mass laboratory waste.

This Site has the Following SubSites:

Code: 244-CR VAULT:1
Names: 244-CR VAULT:1; 244-CR-001 Tank and Sump; 244-CR-TK-001

Code: 244-CR VAULT:2
Names: 244-CR VAULT:2; 244-CR-002 Tank and Sump; 244-CR-TK-002

Code: 244-CR VAULT:3
Names: 244-CR VAULT:3; 244-CR-TK-003

Code: 244-CR VAULT:4
Names: 244-CR VAULT:4; 244-CR-TK-011; 244-CR

Code: 244-CR VAULT:1 **Classification:** Accepted

Names: 244-CR VAULT:1; 244-CR-001 Tank and Sump; **Reclassification:** None
244-CR-TK-001

Type: Receiving Vault **Start Date:**

Status: Inactive **End Date:**

Description: 244-CR-001 is a 189,250 liter (50,000 gallon) tank located in a 6.7 meter (22 foot) by 7.9 meter (26 foot) by 8.8 meter (29 foot) cell (cell 1) within the 244-CR Vault. The concrete cell has a 170 liter (45 gallon) capacity sump. The 244-CR Vault and associated tanks and cells were used as the uranium sludge recovery and distribution vault for the 241-C Tank Farm. CR Vault was also used for the interim storage and transfer of waste from B-Plant, PUREX and Hot Semi-Works. Tank 244-CR-001 was the slurry accumulator, receiving waste from the C Farm tanks. The slurry was processed with nitric acid. In 2002, the tank was estimated to contain 7,570 liters (2,000 gallons) of waste solids from the Uranium Recovery Program. In 2005, the tank contained 5,197 liters (1,375 gallons) of liquid and sludge. Cell #1 contained 291 liters (77 gallons) of liquid.

The SubSite is Part Of:

Code: 244-CR VAULT
Names: 244-CR Vault; 244-CR VAULT; Line 8765

Code: 244-CR VAULT:2 **Classification:** Accepted

Names: 244-CR VAULT:2; 244-CR-002 Tank and Sump; **Reclassification:** None
244-CR-TK-002

Type: Receiving Vault **Start Date:**

Status: Inactive **End Date:**

Description: 244-CR-001 is a 56,775 liter (15,000 gallon) tank located in a 4.9 meter (16 foot) by 6.0 meter (20 foot) by 5.79 meter (19 foot) cell (cell 2) within the 244-CR Vault. The concrete cell has a 170 liter (45 gallon) capacity sump. The 244-CR Vault and associated tanks and cells were used as the uranium sludge recovery and distribution vault for the 241-C Tank Farm. CR Vault was also used for the interim storage and transfer of waste from B-Plant, PUREX and Hot Semi-Works. Tank 244-CR-002 was the blending tank, mixing waste from the 244-CR-001 with nitric acid. In 2002, the tank was estimated to contain 5,678 liters (1,500 gallons) of waste solids from the Uranium Recovery Program. In 2005, the tank contained 2,846 liters (753 gallons) of liquid and sludge. Cell 2 contained 5,579 liters (1,476 gallons) of liquid and sludge.

The SubSite is Part Of:

Code: 244-CR VAULT
Names: 244-CR Vault; 244-CR VAULT; Line 8765

Code: 244-CR VAULT:3 **Classification:** Accepted

Names: 244-CR VAULT:3; 244-CR-TK-003 **Reclassification:** None
Type: Receiving Vault **Start Date:**
Status: Inactive **End Date:**

Description: 244-CR-003 is a 56,775 liter (15,000 gallon) tank located in a 4.9 meter (16 foot) by 6.0 meter (20 foot) by 5.79 meter (19 foot) cell (cell 3) within the 244-CR Vault. The concrete cell has a 170 liter (45 gallon) capacity sump. The 244-CR Vault and associated tanks and cells were used as the uranium sludge recovery and distribution vault for the 241-C Tank Farm. CR Vault was also used for the interim storage and transfer of waste from B-Plant, PUREX and Hot Semi-Works. Tank 244-CR-003 was a blending tank, mixing waste from the 244-CR-001 with nitric acid. In 2002, the tank was estimated to contain 15,973 liters (4,200 gallons) of saltwell waste with an unknown amount of solids. In 2005, the tank contained 8,112 liters (2,146 gallons) of liquid and sludge. Cell 3 contained 6,709 liters (1,775 gallons) of liquid and sludge. 244-CR-003 was the last active tank in the CR Vault. The tank had been available to be used for saltwell pumping of the C Tank Farm.

The SubSite is Part Of:

Code: 244-CR VAULT
Names: 244-CR Vault; 244-CR VAULT; Line 8765

Code: 244-CR VAULT:4 **Classification:** Accepted
Names: 244-CR VAULT:4; 244-CR-TK-011; 244-CR **Reclassification:** None
Type: Receiving Vault **Start Date:**
Status: Inactive **End Date:**

Description: 244-CR-011 is a 189,250 liter (50,000 gallon) tank located in a 6.7 meter (22 foot) by 7.9 meter (26 foot) by 8.8 meter (29 foot) cell (cell 11) within the 244-CR Vault. The concrete cell has a 170 liter (45 gallon) capacity sump. The 244-CR Vault and associated tanks and cells were used as the uranium sludge recovery and distribution vault for the 241-C Tank Farm. CR Vault was also used for the interim storage and transfer of waste from B-Plant, PUREX and Hot Semi-Works. Initially, tank 244-CR-011 acted as a process pump tank for the transfer of processed waste from the CR Vault to the diversion station for transfer to the Uranium Recovery facility or other operations. In 2002, the tank was estimated to contain 132,475 liters (35,000 gallons) of supernate and rainwater. In 2005, 15,082 liters (3,990 gallons) of sludge was reported. No liquid volume was remaining in the tank. Cell 11 contained 27,639 liters (7,312 gallons) of liquid and sludge.

The SubSite is Part Of:

Code: 244-CR VAULT
Names: 244-CR Vault; 244-CR VAULT; Line 8765

Code: 244-CR-WS-1 **Classification:** Accepted
Names: 244-CR-WS-1; 244-CR French Drain **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The unit is a french drain, It is covered and partially filled with gravel.

Location: The drain is located on the south side of the 291-CR Ventilation Building stack, inside the 241-C Tank Farm fence.

Process Description: This drain received condensate from the 291-CR Stack, plenum chamber exhaust fans and the

Description: plenum inlet.

Related Sites/ Structures: The structure is associated with the 291-CR ventilation building.

Waste Type: Water

Waste Description: This unit received condensate from the 291-CR Stack, the plenum chamber exhaust fans and the plenum inlet.

Code: 200-E-133 **Classification:** Accepted

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm **Reclassification:** None

Type: Contamination Migration **Start Date:** 1/1/1946

Status: Inactive **End Date:**

Description: The site is the soil inside and adjacent to the chain link fence that surrounds the 241-C Tank Farm. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The individual unplanned releases associated with the 241-C Tank Farms are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas are also part of this site.

Location: The 241-C Tank Farm is located at the intersection of 7th Street and Buffalo Ave. in 200 East Area.

Release Description: The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm complex over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks. In 2008, the Hanford C-Farm Leak Assessment Report (RPP-ENV-33418) was issued. It documented failed pipelines and unplanned releases associated with activities inside the 241-C Tank Farm. Some of the releases included the underground process line (V172) from the 252-C diversion box to 241-C-112 tank in C Tank Farm failure. The failed pipeline, inside C tank farm, was isolated. Jumpers were fabricated and installed to establish a new process route. Line V112, adjacent to diversion box 241-C-151, was identified as a leaker. The date and amount of waste leaker from this pipeline is unknown. In August 1974, Occurrence Report 74-120 states that pipeline V-103, located inside 241-C farm, leaked and caused high levels of contamination between tanks 241-C-104 and 241-C-105. High readings were noted in dry well 30-03-02. A liquid level rise in Tank 103-C, the cesium feed tank, was apparently caused by a failed line in the encasement between the 152-CR diversion box and Tank 102-C which permitted coating waste from the Purex Plant to leak into the encasement and drain to Tanks 101-C, 102-C, and 103-C via the tank pump pits. Coating waste has been routed through a spare line to Tank 102-C and no further leaks have been detected. The coating waste solution accumulated in Tank 103-C did not significantly affect cesium loading capability as a cask was loaded normally following the incident.

Related Sites/ Structures: The site is associated with UPR-200-E-16, UPR-200-E-27, UPR-200-E-68, UPR-200-E-81, UPR-200-E-82, UPR-200-E-107, UPR-200-E-118, UPR-200-E-136, and UPR-200-E-137. Most of these sites are listed in TPA Appendix B as TSD-associated sites, and are to be addressed with the closeout of the tank farm TSD. As such, site 200-E-133 is also a TSD-associated site.

Waste Type: Process Effluent
Waste Description: Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne contamination spreads occurred from activities conducted in valve pits and diversion boxes. Both types of releases contributed to the contamination in the soil.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-16
Names: UPR-200-E-16; 241-C Overground Transfer Line Leak; UN-200-E-16

Code: UPR-200-E-27
Names: UPR-200-E-27; 244-CR Contamination Spread; UN-200-E-27

Code: UPR-200-E-68
Names: UPR-200-E-68; Radioactive Contamination Spread; UN-200-E-68; UN-216-E-68

Code: UPR-200-E-81
Names: UPR-200-E-81; 241-CR-151 Line Break; UN-200-E-81; UN-216-E-9

Code: UPR-200-E-82
Names: UPR-200-E-82; V122; 241-C-152 Line Break; B Plant Ion Exchange Feed Line Leak; UN-200-E-82; UN-216-E-10

Code: UPR-200-E-107
Names: UPR-200-E-107; Contamination Spread in 241-C Tank Farm; UN-200-E-107

Code: UPR-200-E-118
Names: UPR-200-E-118; Airborne Release from 241-C-107; UN-200-E-118

Code: UPR-200-E-136
Names: UPR-200-E-136; 241-C-101 Tank Leak; UN-200-E-136

Code: UPR-200-E-137
Names: UPR-200-E-137; 241-C-203 Leak; UN-200-E-137

Code: 2607-EG	Classification: Accepted
Names: 2607-EG	Reclassification: None
Type: Septic Tank	Start Date: 1/1/1951
Status: Inactive	End Date:

Description: There are two, 2607-EG septic tanks. The first tank failed and was replaced in 1972. The 2607-EG Septic Tank is marked by a large diameter, vertical concrete pipe. It received sanitary wastewater and sewage from the 271-CR Building. The associated drain field had a capacity of 619 gallons (2,350 liters) per day.

Location: This septic tanks are located southeast of the 241-C Tank Farm fence and east of the 271-CR Building.

Process Description: The 2607-EG Septic Tanks and associated drain fields were designed to accept sanitary sewer effluent from the 271-CR Building.

Related Sites/Structures: The 2607-EG Septic Tank is associated with the 241-C Tank Farm and the 271-CR Building.

Waste Type: Sanitary Sewage
Waste Description: The current flow rates to Septic Tank 2607-EG are unknown. However, the 2607-EG septic system received sanitary sewer effluent from the 271-CR Building at a rate of 6 cubic feet (0.2

cubic meters) per day in 1987.

Code: UPR-200-E-72 **Classification:** Accepted
Names: UPR-200-E-72; Radioactive Contamination from Uncovered Buried Waste; UN-200-E-72 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1985
Status: Inactive **End Date:**
Description: A WIDS sign has been placed at the approximate location of the site.
Location: The site is located south of the 241-C Tank Farm, near the 216-C-8 Crib.
Release Description: In 1985, radiological surveys were being performed outside the 241-C Tank Farm fence following a contamination incident at 241-C-151. A contaminated area was found south of 241-C Tank Farm that indicated the burial of previously undocumented contaminated material. The area contained specks of contamination reading up to 7 rad per hour. The source of the contamination is assumed to be the buried material.
Waste Type: Misc. Trash and Debris
Waste Description: The contamination consisted of beta/gamma particulates with dose rates up to 7 rad per hour on the uncovered material and the surrounding area.

Code: UPR-200-E-91 **Classification:** Accepted
Names: UPR-200-E-91; UN-200-E-91; UN-216-E-19 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: This site was a large area of contaminated soil, located north and east of the 241-C Tank Farm. In 1981, the contaminated soil was removed from this area and taken to another location (UPR-200-E-56). The radiological posting was removed in 1981. This release site is no longer marked or posted.
Location: UPR-200-E-91 was located adjacent to the northeast corner of the 241-C Tank Farm.
Release Description: The release occurred over time, due to radioactive particles migrating out of the adjacent 241-C Tank Farm. At one time, water from an equipment decontamination station, located inside the tank farm, seeped downhill into this area. Vapor emissions and windblown particulates from the contaminated surfaces of the tank farm contributed to the buildup of ground contamination at the site.
Related Sites/Structures: UPR-200-E-91 was associated with the 241-C Tank Farm. The contaminated soil was removed to UPR-200-E-56. A smaller radiologically posted area is located in the vicinity of where this unplanned release had been. See WIDS site code 200-E-115.
Waste Type: Soil
Waste Description: The release consisted of wind blown radiologically contaminated soil from tank farm activities and water run off from an equipment decontamination located inside 241-C tank farm. The contaminated soil was removed. The area outside the tank farm fence was revegetated with perennial wheatgrass and cheatgrass in 1981.

WMA S/SX

Code: 216-S-3 **Classification:** Accepted

Names: 216-S-3; 216-S-3 Crib; 216-S-5 **Reclassification:** None

Type: Crib **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1956

Description: The unit consists of two open bottomed crib boxes 3.1 meters (10 feet) by 3.1 meters (10 feet) made of timbers. The two crib boxes are connected in series 15 meters (50 feet) apart, with overflow from one box into the other via a pipe. These boxes are set into a gravel layer in the bottom of a trench. The trench was the backfilled. Each box contains two flanged riser pipes extending from the top of the box.

Location: The unit was located outside the 241-S Tank Farm east fence. In 1996, the eastern tank farm fence line was expanded. The crib is now inside the tank farm fence.

Process Description: The unit received condensate from the riser condensers on the 241-S-101 and 241-S-104 Tanks.

Related Sites/Structures: The crib is associated with the condensers on the 241-S-101 and 241-S-104 tanks located inside the 241-S Tank Farm. The site is also associated with the 216-S-15 Pond.

Waste Type: Process Effluent

Waste Description: The site received condensate from condensers on the 241-S-101 and 241-S-104 Tanks in the 241-S Tank Farm. The waste is low in salt and is neutral to basic. The inorganics at the site consist of nitrate, sodium, sodium dichromate, sodium hydroxide, sodium aluminate, and ammonium nitrate. The Reduction Oxidation (REDOX) Radiation Monitoring Report for September 1953 states that the condensate diverted to this crib was sampled. The analysis indicated 95% of the activity was due to zirconium-niobium.

Code: 216-S-15 **Classification:** Accepted

Names: 216-S-15; 216-S-2; 241-S-110 Pond; UN-216-W-3; 110-S Tank Overflow Pond **Reclassification:** None

Type: Pond **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1952

Description: This site consists of a pond that was deactivated by removing the above-ground piping and backfilling it with clean soil.

Location: This site is located at the northeast corner of the 216-S-3 Crib. The site was located outside the east 241-S Tank Farm fence. In 1996, the eastern tank farm fence line was expanded. The site is now inside the tank farm fence.

Process Description: The site provided surface liquid disposal for the 241-S-110 Tank condenser spray cooling water.

Related Sites/Structures: The site is associated with the 241-S-110 tank.

Waste Type: Process Effluent

Waste Description: The site received condenser spray cooling water from the 241-S-110 Tank. The waste was low in salt, neutral to basic, and contained nitrates.

Code: 241-S-A **Classification:** Accepted
Names: 241-S-A; 241-S-A Diversion Box; 241-S-A Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1952
Status: Inactive **End Date:**
Description: This unit is a rectangular concrete structure used to divert waste flow to the proper destination, Valve handles extend through and above a concrete cover block on the 241-S-A Valve Pit.
Location: The 241-S-A Valve Pit is located in the 241-S Tank Farm, between Tanks 241-S-102 and 241-S-101.
Process Description: The 241-S-A Valve Pit is used to direct waste flow.
Related Sites/Structures: Structures associated with the 241-S-A Valve Pit include: a flush pit, a leak detector, valve handles, and the 241-S-102 Tank.
Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities of waste are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-S-B **Classification:** Accepted
Names: 241-S-B; 241-S-B Diversion Box; 241-S-B Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1952
Status: Inactive **End Date:**
Description: This unit is a rectangular concrete structure used to divert waste flow to the proper destination. Valve handles extend through and above a concrete cover block on the 241-S-B Valve Pit.
Location: The 241-S-B Valve Pit is located in the 241-S Tank Farm, south of Tanks 241-S-102 and 241-S-101.
Process Description: The 241-S-B Valve Pit is used to direct waste flow.
Related Sites/Structures: Structures associated with the 241-S-B Valve Pit include: a flush pit, a leak detector, valve handles, and the 241-S-102 Tank.
Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities of waste are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-S-C **Classification:** Accepted
Names: 241-S-C; 241-S-C Diversion Box; 241-S-C Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1952
Status: Inactive **End Date:**
Description: This unit is a rectangular concrete structure used to divert waste flow to the proper destination.

Valve handles extend through and above a concrete cover block on the 241-S-C Valve Pit.

Location: The 241-S-C Valve Pit is located in the 241-S Tank Farm, south of Tanks 241-S-107 and 241-S-108.

Process Description: The 241-S-C Valve Pit is used to direct waste flow.

Related Sites/ Structures: Structures associated with the 241-S-C Valve Pit include: a flush pit, a leak detector, valve handles, and the 241-S-107 Tank.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities of waste are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-S-D **Classification:** Accepted

Names: 241-S-D; 241-S-D Diversion Box; 241-S-D Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1952

Status: Inactive **End Date:**

Description: This unit is a rectangular concrete structure used to divert waste flow to the proper destination. Valve handles extend through and above a concrete cover block on the 241-S-D Valve Pit.

Location: The 241-S-D Valve Pit is located in the 241-S Tank Farm, south of Tanks 241-S-107 and 241-S-108.

Process Description: The 241-S-D Valve Pit is used to direct waste flow.

Related Sites/ Structures: Structures associated with the 241-S-D Valve Pit include: a flush pit, a leak detector, valve handles, and the 241-S-107 Tank.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities of waste are variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-S-101 **Classification:** Accepted

Names: 241-S-101; 241-S-TK-101 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1980

Description: This unit is a second generation single-shell storage tank. Tank 241-S-101 is the first tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-101 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Tank 241-S-101 received waste from REDOX, Pacific Northwest Laboratory, and PUREX facilities. Additional sources include N reactor, 241-U, 241-S, and 241-SX Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-S-101 include passive ventilation, a liquid observation well, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-101 included: REDOX high-level wastes, REDOX coating waste, supernatant containing Pacific Northwest Laboratory waste, coating waste, PUREX low-level waste, laboratory waste, B Plant high-level waste, terminal liquor and evaporator bottoms, partial neutralization feed, N Reactor waste, ion exchange waste, and double-shell slurry feed from 241-U, 241-S and 241-SX Tank Farms.

Code: 241-S-102

Classification: Accepted

Names: 241-S-102; 241-S-TK-102

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1980

Description: This unit is a second generation single-shell storage tank. Tank 241-S-102 is the second tank of a three-tank cascade series. This tank is concrete reinforced, cylindrical, and dome-roofed with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-102 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Release Description: On 7/27/2007, a spill was reported inside the 241-S Tank Farm at the S-102 Pump Pit. Higher than normal radiation levels (200-250 mr/hr at 8-15 feet) were observed. A spill of liquid from an above ground transfer line occurred while attempting to backflush a clogged pump screen. The release was estimated to be less than 100 gallons.

Process Description: Waste sources for Tank 241-S-102 include the REDOX facility and 241-U, 241-S, 241-SX, and 241-SY Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-S-102 include a passive ventilation liquid observation well, eight dry wells, and temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-102 include: evaporator bottoms, REDOX high-level waste, noncomplexed waste, double-shell slurry feed, and partial neutralization feed from 241-S, 241-SX, 241-SY, and 241-U Tank Farms.

Code: 241-S-103

Classification: Accepted

Names: 241-S-103; 241-S-TK-103

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1980

Description: This unit is a second generation single-shell storage tank. Tank 241-S-103 is the third tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-103 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Waste sources for Tank 241-S-103 include the REDOX facility and 241-S, 241-SX, 241-SY,

Description: and 241-U Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-S-103 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-103 included REDOX high-level waste, REDOX coating waste, evaporator bottoms, noncomplexed waste, partial neutralization feed, and double-shell slurry feed from 241-S, 241-SX, 241-SY, and 241-U Tank Farms.

Code: 241-S-104

Classification: Accepted

Names: 241-S-104; 241-S-TK-104

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1968

Description: This unit is a second generation single-shell storage tank. Tank 241-S-104 is the first tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-104 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Tank 241-S-104 received waste from the REDOX facility and the 241-S Tank Farm.

Related Sites/ Structures: Structures associated with Tank 241-S-104 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-104 included REDOX high-level and coating waste, and waste from 241-S Tank Farm.

Code: 241-S-105

Classification: Accepted

Names: 241-S-105; 241-S-TK-105

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1976

Description: This unit is a second generation single-shell storage tank. Tank 241-S-105 is the second tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-105 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Tank 241-S-105 received waste from the REDOX facility.

Related Sites/ Structures: Structures associated with Tank 241-S-105 include passive ventilation, a liquid observation well, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: REDOX coating and high-level waste were transferred to Tank 241-S-105.

Description:

Code: 241-S-106 **Classification:** Accepted
Names: 241-S-106; 241-S-TK-106 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1953
Status: Inactive **End Date:** 1/1/1976

Description: This unit is a second generation single-shell storage tank. Tank 241-S-106 is the third tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-106 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-S-106 include the REDOX facility and 241-S Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-S-106 include passive ventilation, a liquid observation well, six drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-106 included REDOX high-level waste and evaporator bottoms from the 241-S Tank Farm.

Code: 241-S-107 **Classification:** Accepted
Names: 241-S-107; 241-S-TK-107 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1980

Description: This unit is a second generation single-shell storage tank. Tank 241-S-107 is the first tank of a three-tank cascade series. This tank is a reinforced concrete, cylindrical structure with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-S-107 is located within 241-S Tank Farm Facility. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-S-107 include REDOX and PUREX facilities, Pacific Northwest Laboratory, N Reactor, and 241-BX, 241-C, 241-S, 241-SX, 241-SY, 241-U Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-S-107 include passive ventilation, six drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-S-107 included REDOX high-level waste and coating waste, decontamination waste, B Plant high-level and low-level waste, Pacific Northwest Laboratory waste, laboratory waste, N Reactor waste, PUREX low-level waste, ion exchange waste, fractionization waste, evaporator bottoms, double-shell slurry feed, partial neutralization feed, and complexed concentrate from 241-BX, 241-C, 241-S, 241-SX, 241-SY, and 241-U Tank Farms.

Waste Description: operations. Volumes were variable according to specific plant operations. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-S-302A **Classification:** Accepted

Names: 241-S-302A; 241-S-302-A Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines V542, V763, V764, and DR324 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1991

Description: This unit is a cylindrical, steel tank. The catch tank is buried underground for radiation shielding. The tank is surrounded with posts and chain and labeled with IMUST signs.

Location: The 241-S-302A Catch Tank is located east of the 241-S and the 241-SX Tank Farms, inside the tank farm fence. It is north of the 241-S-151 diversion box.

Process Description: The tank was installed to receive spills, leakage, line flushes, and drainage associated with waste transfers through the 241-S-151 and 241-SX-151 Diversion Boxes.

Related Sites/Structures: The 241-S-302A Catch Tank is associated with the 241-S-151 and the 241-SX-151 Diversion Boxes. Drain lines V542, V763, V764 and DR324 are associated with the diversion boxes.

Waste Type: Process Effluent

Waste Description: The tank collected leaking and excess process waste that passed through the 241-S-151 and 241-SX-152 Diversion Boxes. Wastes characteristic of the 241-S, 241-SX and 241-U Tank Farms as well as the 222-S Laboratory are expected to be present in the catch tank.

Code: 241-S-304 **Classification:** Accepted

Names: 241-S-304; 241-S-304 Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1991

Status: Inactive **End Date:** 1/1/2005

Description: The catch tank is below ground surface, inside a concrete pump pit with concrete cover blocks. The pump pit measures 3 meters by 3 meters (10 foot by 10 foot) and is 1.75 meters (5.75 feet) deep. The catch tank is constructed of carbon steel.

Location: The 241-S-304 Catch Tank is located east of 241-SX Tank Farm and northeast of the 241-S-151 Diversion Box. It is inside the fenced boundary of the 241-S, SX and SY Tank Farm complex.

Process Description: The 241-S-304 catch tank received precipitation drainage and drainage from the 241-S-151 Diversion Box. This tank was placed into service in 1991 to replace the 241-S-302A catch tank.

Related Sites/Structures: The tank is associated with the 241-S-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: The catch tank receives precipitation drainage and 241-S-151 Diversion Box drainage.

Code:	244-S DCRT	Classification:	Accepted
Names:	244-S DCRT; 244-S Double-Contained Receiver Tank; 244-S Receiver Tank; 244-S RT; 244-S-TK/SMP; Lines 5350 and 5351; 244-S Catch Station	Reclassification:	None
Type:	Receiver Tank	Start Date:	1/1/1987
Status:	Inactive	End Date:	1/1/2005
Description:	The 244-S Receiver Tank is constructed of carbon steel. It sets vertically inside a reinforced concrete, steel lined vault with 0.31 meters (1 foot) thick walls and a 1.4 meters (4.5 foot) thick base. The tank vault is separated from a pump pit above by a 30 centimeter (12 inch) thick concrete slab.		
Location:	The 244-S Receiver Tank is located inside the S,SX,SY Tank Farm fence, south of the 241-SY-103 Tank.		
Process Description:	The 244-S Receiver Tank served as an interim storage area for liquid radioactive mixed waste.		
Related Sites/Structures:	This unit is associated with Diversion Boxes 241-S-151 and 241-UX-154. The 244-S Receiver Tank is also associated with 222-S, Plutonium Finishing Plant, U Plant, and T Plant Facilities.		
Waste Type:	Storage Tank		
Waste Description:	The unit stores and transports radioactive mixed waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations.		

Code:	241-SX-A	Classification:	Accepted
Names:	241-SX-A; 241-SX-A Diversion Box; 241-SX-A Valve Pit	Reclassification:	None
Type:	Valve Pit	Start Date:	1/1/1954
Status:	Inactive	End Date:	
Description:	This unit is a rectangular concrete structure used to divert waste flow to the proper destination. It has been covered with foam. Valve handles extended through and above the concrete cover block.		
Location:	The 241-SX-A Valve Pit is located southeast of Tank 241-SX-102 and northeast of Tank 241-SX-105.		
Process Description:	The 241-SX-A Valve Pit is used to direct waste flow.		
Related Sites/Structures:	Structures associated with the 241-SX-A Valve Pit include: a flush pit, a leak detector, valve handles, and Tank 241-SX-102.		
Waste Type:	Process Effluent		
Waste Description:	The unit is used to transport radioactive waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.		

Code:	241-SX-B	Classification:	Accepted
Names:	241-SX-B; 241-SX-B Diversion Box; 241-SX-B	Reclassification:	None

cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-102 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-102 include the REDOX facility, and the 241-BX, 241-TX, 241-SX, and 241-U Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-SX-102 include: drywells, a liquid observation well, a hydrogen monitor, temperature and surface level measurement instruments. This tank is actively vented through Tank 241-SX-109 which is connected to the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to 241-SX-102 included: REDOX high-level waste, carbonate waste, concrete, REDOX high-level waste, ion exchange waste, evaporator bottoms, and partial neutralization feed from 241-BX, 241-SX, 241-TX, and 241-S Tank Farms.

Code: 241-SX-103

Classification: Accepted

Names: 241-SX-103; 241-SX-TK-103

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1980

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-103 is the third tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-103 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-103 include the REDOX facility, and the 241-BX, 241-S, and 241-SX Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-SX-103 include: drywells, a liquid observation well, a hydrogen monitor, temperature and surface level measurement instruments. This tank is actively vented through Tank 241-SX-109 which is connected to the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-103 included: REDOX high-level waste, concrete, coating waste, evaporator bottoms, organic wash waste, and partial neutralization feed from 241-BX, 241-SX, and 241-S Tank Farms.

Code: 241-SX-104

Classification: Accepted

Names: 241-SX-104; 241-SX-TK-104

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1980

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-104 is the first tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-104 is located in the 241-SX Tank Farm. This facility is located on Thirteenth

Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-104 include the REDOX facility, the 241-S, and the 241-SX Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-SX-104 include: drywells, a liquid observation well, a hydrogen monitor, temperature and surface level measurement instruments. This tank is actively vented through Tank 241-SX-109 which is connected to the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-104 included: REDOX high-level waste and ion exchange waste, double-shell slurry feed, and evaporator bottoms from the 241-S and the 241-SX Tank Farms.

Code: 241-SX-105 **Classification:** Accepted

Names: 241-SX-105; 241-SX-TK-105 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1980

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-105 is the second tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-105 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-105 include the REDOX facility, the 241-BX, 241-S, 241-TX and 241-U Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-SX-105 include: lateral wells, drywells, a liquid observation well, a hydrogen monitor, temperature and surface level measurement instruments. This tank is actively vented through Tank 241-SX-109 which is connected to the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-105 included: REDOX high-level waste and ion exchange waste, double-shell slurry feed, evaporator bottoms, and partial neutralization feed from 241-BX, 241-S, 241-X, and 241-U Tank Farms.

Code: 241-SX-106 **Classification:** Accepted

Names: 241-SX-106; 241-SX-TK-106 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1980

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-106 is the third tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-106 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-106 include the REDOX facility, 241-BX, 241-S, 241-TX, and 241-U Tank Farms.

Process Description: 241-B, 241-C, 241-S, 241-SY, 241-SX, 241-TX and 241-U Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-SX-106 include drywells, a liquid observation well, a hydrogen monitor, temperature and surface level measurement instruments. This tank is actively vented through Tank 241-SX-109 which is connected to the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-106 included: Hanford laboratory waste, Pacific Northwest Laboratory waste, REDOX and waste fractionation ion exchange waste, evaporator bottoms, B Plant low level waste, PUREX low level waste, coating waste, and partial neutralization feed from 241-B, 241-BX, 241-C, 241-S, 241-SX, 241-SY, 241-TX, and 241-U Tank Farms.

Code: 241-SX-107 **Classification:** Accepted

Names: 241-SX-107; 241-SX-TK-107 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1964

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-107 is the first tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-107 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-107 include the REDOX facility, 100 F Area, and the 241-SX Tank Farm.

Related Sites/ Structures: Structures associated with Tank 241-SX-107 include lateral wells, drywells, temperature and surface level measurement instruments. This tank is actively ventilated through the 241-SX Sludge Cooler.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-107 included: coating waste and REDOX high-level waste. The unit contains 41 small bottles of neutralized waste from 100 F Area, each containing less than 1 gram (0.04 ounce) Plutonium 239.

Code: 241-SX-108 **Classification:** Accepted

Names: 241-SX-108; 241-SX-TK-108 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1962

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-108 is the first tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-108 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-108 include the REDOX facility, and the 241-SX Tank Farm.

Related Sites/ Structures: Structures associated with Tank 241-SX-108 include: lateral wells, drywells, temperature and surface level measurement instruments. This tank is actively vented through the 241-SX Sludge

bottles or containers containing a total of 4 ounces (110 grams) natural uranium, 2 ounces (62 grams) depleted uranium, 0.21 ounce (6 grams) enriched uranium, and 7 ounces (204 grams) plutonium were added to this unit.

Code: 241-SX-111 **Classification:** Accepted
Names: 241-SX-111; 241-SX-TK-111 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1974

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-111 is the second tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-111 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: The waste source for Tank 241-SX-111 is the REDOX Facility.

Related Sites/Structures: Structures associated with Tank 241-SX-111 include: lateral wells, drywells, temperature and surface level measurement instruments. This tank is actively vented through the 241-SX-Sludge Cooler.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-SX-111 included: REDOX high-level waste and supernatant containing REDOX high-level waste and REDOX ion exchange waste from the 241-SX Tank Farm.

Code: 241-SX-112 **Classification:** Accepted
Names: 241-SX-112; 241-SX-TK-112 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1969

Description: This unit is a third generation single-shell tank designed for self-boiling waste. Tank 241-SX-112 is the third tank of a three tank cascade series. This tank is a reinforced concrete, cylindrical structure with a steel liner. The tank is buried underground to provide radiation shielding.

Location: Tank 241-SX-112 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: Waste sources for Tank 241-SX-112 include the REDOX Facility, and the 241-SX Tank Farm.

Related Sites/Structures: Structures associated with Tank 241-SX-112 include: lateral wells, drywells, temperature and surface level measurement instruments. This tank is actively vented through the 241-SX-Sludge Cooler.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-SX-112 included: REDOX high-level waste and supernatant containing REDOX high-level waste from 241-SX Tank Farm.

Code: 241-SX-113 **Classification:** Accepted

shielding.

Location: Tank 241-SX-115 is located in the 241-SX Tank Farm. This facility is located on Thirteenth Street, northwest of the REDOX Plant.

Process Description: The waste source for Tank 241-SX-115 is the REDOX Facility.

Related Sites/ Structures: Structures associated with Tank 241-SX-115 include: lateral wells, drywells, and a surface level measurement instrument. This tank has passive ventilation.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-SX-115 included: REDOX high-level waste and supernatant containing REDOX high-level waste.

Code: 241-SX-151 **Classification:** Accepted

Names: 241-SX-151; 241-SX-151 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1983

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. The tank farm fence is posted with various radiological postings.

Location: The 241-SX-151 Diversion Box is located northeast of tank 241-SX-101, inside the 241-SX Tank Farm fence.

Process Description: The 241-SX-151 Diversion Box was used to direct liquid waste to other tank farm locations in 200 East and West Areas via jumper connections and underground transfer lines.

Related Sites/ Structures: The 241-SX-151 Diversion Box is associated with the 241-S-151 and 241-SX-152 Diversion Boxes and the 241-SX Tank Farm.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-SX-152 **Classification:** Accepted

Names: 241-SX-152; 241-SX-152 Diversion Box; 241-SX-152 Transfer Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1981

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. The tank farm fence is posted with various radiological postings.

Location: The 241-SX-152 Diversion Box is located north of Tank 241-SX-101, inside the 241-SX Tank Farm fence.

Process Description: The 241-SX-152 Diversion Box was used to direct liquid waste to other tank farm locations in 200 East and West Areas via jumper connections and underground transfer lines.

Related Sites/Structures: The 241-SX-152 Diversion Box is associated with the 241-SX-151 Diversion Box, the 241-U-151 Diversion Box, 231-SX-302 catch tank through line V595, and the 241-SX Tank Farm.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-SX-401 **Classification:** Accepted

Names: 241-SX-401; 241-SX-401 Condenser Shielding Building; 241-SX-401 Waste Disposal Condenser House **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1975

Description: This unit is constructed of reinforced concrete with walls varying in thickness from 0.31 to 0.77 meters (1 to 2.5 feet) thick for shielding purposes.

Location: The 241-SX-401 Condenser Building is located west of Tank 241-SX-106, inside the 241-SX Tank Farm.

Process Description: This building processed condensation from the 241-SX Tank Farm off gases.

Related Sites/Structures: A dry well is associated with the condenser building, 216-S-21 crib and pipeline 200-W-160-PL.

Waste Type: Equipment

Waste Description: The unit contains radioactively contaminated equipment and concrete. The quantity of waste has not been determined. Radiation levels are high.

Code: 241-SX-402 **Classification:** Accepted

Names: 241-SX-402; 241-SX-402 Condenser Shielding Building; 241-SX-402 Waste Disposal Condenser House **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1975

Description: This unit is constructed of reinforced concrete with walls varying in thickness from 0.31 to 0.77 meters (1 to 2.5 feet) thick for shielding purposes.

Location: The 241-SX-402 Condenser Building is located west of Tank 241-SX-109 within 241-SX Tank Farm.

Process Description: This unit processed condensation for the 241-SX Tank Farm off gases.

**Related Sites/
Structures:****Waste Type:** Equipment**Waste** The unit contains radioactively contaminated equipment and concrete. The quantity of waste**Description:** has not been determined. The unit is only mildly contaminated.**Code:** 200-W-96**Classification:** Accepted**Names:** 200-W-96; Contaminated Soil at 241-S/SX/SY
Tank Farm**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** The site is the soil inside and adjacent to the chain link fence that surrounds the 241-S/SX/SY Tank Farms. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The individual unplanned releases associated with the 241-S,SX,SY Tank Farms are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas will also be considered tank farm soil. The 216-S-3 crib, 216-S-15 overflow pond and a portion of the 242-S Evaporator building are also located inside the tank farm fence.**Location:** The site is located east of Cooper Ave., inside 200 West Area.**Release Description:** The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks. On 7/27/2007, a spill was reported inside the 241-S Tank Farm at the S-102 Pump Pit. Higher than normal radiation levels (200-250 mr/hr at 8-15 feet) were observed. A spill of liquid from an above ground transfer line occurred while attempting to backflush a clogged pump screen. The release was estimated to be less than 100 gallons.**Related Sites/
Structures:** Unplanned Releases UPR-200-W-49, UPR-200-W-50, UPR-200-W-80, UPR-200-W-81, UPR-200-W-127, UPR-200-W-140, UPR-200-W-141, UPR-200-W-142, UPR-200-W-143, UPR-200-W-144, UPR-200-W-145, UPR-200-W-146, and 200,W-37 occurred inside the tank farm and were consolidated into 200-W-96. 200-W-54 is located adjacent to the tank farm fence and is associated with the 241-S/SX/SY Tank Farms operations.**Waste Type:** Process Effluent**Waste** Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne**Description:** contamination spreads occurred from activities conducted in valve pits and diversion boxes. Both types of releases contributed to the contamination in the soil.**The Following Sites Were Consolidated With This Site:****Code:** 200-W-37**Names:** 200-W-37; Buried Tygon Tubing Near 241-S-101**Code:** UPR-200-W-49**Names:** UPR-200-W-49; Contamination Southeast of 241-SX; UN-200-W-49**Code:** UPR-200-W-50**Names:** UPR-200-W-50; Contamination Spread from 241-SX-114; UN-200-W-50

Code: UPR-200-W-80
Names: UPR-200-W-80; 241-S/SX Contamination Migration; UN-200-W-80

Code: UPR-200-W-81
Names: UPR-200-W-81; Contamination Specks in 241-S/SX; UN-200-W-81

Code: UPR-200-W-127
Names: UPR-200-W-127; Liquid Release from 242-S Evaporator to the Ground; UN-200-W-127

Code: UPR-200-W-140
Names: UPR-200-W-140; 241-SX-107 Leak

Code: UPR-200-W-141
Names: UPR-200-W-141; 241-SX-108 Leak

Code: UPR-200-W-142
Names: UPR-200-W-142; 241-SX-109 Leak

Code: UPR-200-W-143
Names: UPR-200-W-143; 241-SX-111 Leak

Code: UPR-200-W-144
Names: UPR-200-W-144; 241-SX-112 Leak

Code: UPR-200-W-145
Names: UPR-200-W-145; 241-SX-113 Leak

Code: UPR-200-W-146
Names: UPR-200-W-146; 241-SX-115 Leak

WMA T

Code: 241-T-101 **Classification:** Accepted
Names: 241-T-101; 241-T-TK-101 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1979

Description: This unit is a first generation, underground single-shell storage tank. Tank 241-T-101 is the first tank of a cascade that also includes tanks 241-T-102 and 241-T-103. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-101 is located on the north side of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Tank 241-T-101 received waste from multiple sources including Tank 241-SX-106, Tank 241-S-110, B Plant and T Plant.

Related Sites/Structures: Structures associated with Tank 241-T-101 include: thermocouple tree, liquid observation wells, surface level measurement device, and leak detection dry wells.

Waste Type: Storage Tank

Waste Description: Waste sources for 241-T-101 include coating waste from Tank 241-SX-106, coating and ion exchange waste from B Plant, and metal waste from T Plant operations.

Code: 241-T-102 **Classification:** Accepted
Names: 241-T-102; 241-T-TK-102 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1945
Status: Inactive **End Date:** 1/1/1976

Description: This unit is a first generation, underground single-shell storage tank. Tank 241-T-102 is the second tank of a cascade that also includes tanks 241-T-101, and 241-T-103. The tank is cylindrical, dome roofed, concrete reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-102 is located on the north side of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Tank 241-T-102 received waste cascading from Tank 241-T-101. Additional sources include waste from Tank 241-S-110, Tank 241-C-102, and the T-Plant.

Related Sites/Structures: Structures associated with Tank 241-T-102 include surface level measurement device, liquid observation well, salt well screen, and nozzles.

Waste Type: Storage Tank

Waste Description: Waste sources for the 241-T-102 include coating waste from Tank 241-SX-106, coating and ion exchange waste from B Plant, and metal waste from the T Plant operations.

Code: 241-T-103 **Classification:** Accepted
Names: 241-T-103; 241-T-TK-103 **Reclassification:** None

Description: 104, coating waste from Tank 241-C-102, tributyl phosphate waste and first cycle decontamination waste.

Related Sites/ Structures: Structures associated with 241-T-107 include dry wells, passive ventilation, temperature measurement device, and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Waste types transferred to Tank 241-T-107 include first cycle bismuth phosphate waste, tributyl phosphate, ion exchange waste, and coating waste.

Code: 241-T-108 **Classification:** Accepted

Names: 241-T-108; 241-T-TK-108 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1974

Description: This unit is a first generation, underground single-shell tank. Tank 241-T-108 is the second tank of the third cascade of tanks receiving waste in the T-Farm. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete well. This unit is below grade for shielding purposes.

Location: Tank 241-T-108 is located in the center of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Waste sources for Tank 241-T-108 include: evaporator bottoms from Tank 241-TX-117, tributyl phosphate process waste, and first cycle decontamination waste. It received cascade overflow waste from Tank 241-T-107.

Related Sites/ Structures: Structures associated with 241-T-108 include drywells, passive ventilation, temperature measurement device, and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Waste types transferred to Tank 241-T-108 include: tributyl phosphate, bismuth phosphate first-cycle waste, Hanford Laboratory operations waste, supernatant containing tributyl phosphate waste, B Plant low-level waste, ion exchange waste, and evaporator bottoms.

Code: 241-T-109 **Classification:** Accepted

Names: 241-T-109; 241-T-TK-109 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1974

Description: This unit is a first generation, underground single-shell tank. Tank 241-T-109 is the third tank of the third cascade of tanks receiving waste in the T Farm. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-109 is located in the western portion of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Waste sources for Tank 241-T-109 include saltcake from 241-T Evaporator that was added from Tank 241-TX-117, tributyl phosphate, and first cycle decontamination cascade overflow waste from Tank 241-T-108.

Related Sites/ Structures: Structures associated with the 241-T-109 include drywells, passive ventilation, temperature, and surface level measurement device.

Waste Type: Storage Tank

Waste Description: Waste types transferred to Tank 241-T-109 include: bismuth phosphate first-cycle waste, tributyl phosphate waste, evaporator bottoms, B Plant low-level waste, ion exchange waste, and waste from 241-T and -TX tank farms.

Code: 241-T-110 **Classification:** Accepted

Names: 241-T-110; 241-T-TK-110 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1976

Description: This unit is a first generation, underground single-shell tank. Tank 241-T-110 is the first tank of the fourth cascade of tanks receiving waste in the T Farm. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-110 is located in the southeastern portion of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Waste sources for Tank 241-T-110 include 224-U waste and second cycle decontamination waste.

Related Sites/ Structures: Structures associated with 241-T-110 include drywells, passive ventilation, liquid observation well, and a surface level measurement device.

Waste Type: Storage Tank

Waste Description: Waste types transferred to 241-T-110 include bismuth phosphate second-cycle waste and the 224-U Building waste.

Code: 241-T-111 **Classification:** Accepted

Names: 241-T-111; 241-T-TK-111 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1974

Description: This unit is a first generation, underground single-shell tank. Tank 241-T-111 is the second tank of the fourth cascade of tanks receiving waste in the T Farm. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-111 is located in the southern portion of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Waste sources for Tank 241-T-111 include 224-U waste and second cycle decontamination cascade overflow waste from Tank 241-T-110.

Related Sites/ Structures: Structures associated with 241-T-110 include drywells, passive ventilation, liquid observation well, and a surface level measurement device.

Waste Type: Storage Tank

Waste Description: Waste types transferred to Tank 241-T-111 include: bismuth phosphate second-cycle waste and

224-U Building waste.

Code: 241-T-112 **Classification:** Accepted
Names: 241-T-112; 241-T-TK-112 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1976

Description: This unit is a first generation, underground single-shell tank. Tank 241-T-112 is the third tank of the fourth cascade of tanks receiving waste in the T Farm. The tank is cylindrical, dome-roofed, and concrete-reinforced with a steel liner lying across the tank bottom and up the concrete wall. This unit is below grade for shielding purposes.

Location: Tank 241-T-112 is located in the southwestern portion of the 241-T Tank Farm, which is located north of the intersection of 23rd Street and Camden Avenue.

Process Description: Waste sources for tank 241-T-112 include second cycle decontamination waste, decontamination waste, and laboratory waste.

Related Sites/ Structures: Structures associated with 241-T-112 include drywells, passive ventilation, temperature and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Waste types transferred to Tank 241-T-112 include: bismuth phosphate second-cycle waste, Pacific Northwest Laboratory waste, decontamination waste; and supernatant containing B Plant low-level waste and ion exchange waste from the 241-T tank.

Code: 241-T-151 **Classification:** Accepted
Names: 241-T-151; 241-T-151 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1980

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. The tank farm fence is posted with various radiological postings.

Location: The 241-T-151 Diversion Box is located near the southeast corner of 241-T Tank Farm, inside the tank farm fence.

Process Description: The 241-T-151 Diversion Box was used to direct liquid waste to other tank farm locations in 200 East and West Areas via jumper connections and underground transfer lines.

Related Sites/ Structures: The 241-T-151 Diversion Box is associated with the 241-T-153 and 241-U-151 Diversion Box, the 241-T-301 Catch Tank, and the 241-T Tank Farm.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with this unit include transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-T-201 **Classification:** Accepted
Names: 241-T-201; 241-T-TK-201 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1976

Description: This unit is an underground, concrete-reinforced vertical single-shell tank. Tank 241-T-201 has a steel liner and rests upon a concrete base slab. This unit is below grade for shielding purposes.

Location: Tank 241-T-201 is located in the western portion of the 241-T Tank Farm.

Process Description: Some documents state the waste in 241-T-201 is from the 224-U Building. However, WHC-SD-WM-ER-351 states the 241-T-201 was full of "224" waste when initial level readings were taken in 1952, but does not specify if the waste was from 224-T or 224-U. ARH-2155 and RHO-CD-673 both state that the 216-T-32 Crib received 224-T waste via the 241-T-201 tank.

Related Sites/Structures: The tank is associated with the 216-T-32 crib and the 241-T-252 Diversion Box. Equipment associated with 241-T-201 includes passive ventilation, temperature, and surface level measurement devices.

Waste Type: Storage Tank
Waste Description: Waste in Tank 241-T-201 is from the 224 Building.

Code: 241-T-202 **Classification:** Accepted
Names: 241-T-202; 241-T-TK-202 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1976

Description: This unit is an underground, concrete-reinforced vertical single-shell tank. Tank 241-T-202 has a steel liner and rests upon a concrete base slab. This unit is below grade for shielding purposes.

Location: Tank 241-T-202 is located in the western portion of the 241-T Tank Farm.

Process Description: Some documents state the waste in 241-T-201 is from the 224-U Building. However, WHC-SD-WM-ER-351 states the 241-T-201 was full of "224" waste when initial level readings were taken in 1952, but does not specify if the waste was from 224-T or 224-U. ARH-2155 and RHO-CD-673 both say that the 216-T-32 Crib received 224-T waste via the 241-T-201 tank.

Related Sites/Structures: Structures associated with 241-T-202 include the 241-T-252 Diversion Box, passive ventilation, temperature, and surface level measurement devices.

Waste Type: Storage Tank
Waste Description: Waste in Tank 241-T-202 is from the 224 Building.

Code: 241-T-203 **Classification:** Accepted
Names: 241-T-203; 241-T-TK-203 **Reclassification:** None

southwest of the 241-T-112 Tank.

Process Description: This unit transported waste solutions from processing and decontamination operations.

Related Sites/Structures: The diversion box is associated with 241-T-201, 241-T-202, 241-T-203, 241-T-204, 241-T-153, 221-T, and 241-T Tank Farm. The diversion box drains to the 241-T-301 Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit transported various mixed waste solutions from processing and decontamination operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment

Waste Description: Transfer piping and nozzles are associated with the 241-T-252 Diversion Box.

Waste Type: Equipment

Waste Description: Waste lead is also stored in the diversion box.

Code: 241-T-301B **Classification:** Accepted

Names: 241-T-301B; 241-T-301-B; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines V664 and V727; 241-T-0301; 241-T-301 Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1985

Description: The 241-T-301B Catch Tank is an underground, reinforced concrete tank. The tank is surrounded with posts and chain and labeled with IMUST signs. This unit has a concrete-domed lid and uses a vertical construction design. The catch tank is below grade for shielding purposes.

Location: The 241-T-301B catch tank is located in the southwestern portion of the 241-T Tank Farm, east of the 241-T-252 Diversion Box.

Process Description: This unit collected overflow waste from diversion boxes 241-T-151, 241-T-152, 241-T-153, and 241-T-252 via a 15.2 centimeter (6 inch) schedule 40 stainless steel pipe.

Related Sites/Structures: The 241-T-301 Catch Tank is associated with the 241-T-151, 241-T-152, 241-T-153, and 241-T-252 diversion boxes. Drain lines V664 and V727 connect the diversion boxes to the catch tank.

Waste Type: Process Effluent

Waste Description: This tank collected overflow radioactive process waste from 241-T-252, 241-T-151, 241-T-152 and 241-T-153 Diversion Boxes.

Code: 241-TR-152 **Classification:** Accepted

Names: 241-TR-152; 241-TR-152 Diversion Box; Line 6053 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1980

Description: This unit is constructed of reinforced concrete and is rectangular in shape.
Location: This unit is located east of Tank 241-T-104 within the 241-T Tank Farm.
Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/Structures: The 241-TR-152 Diversion Box is associated with the 241-TR-153 and 241-TXR-151 Diversion Boxes, and the 241-T Tank Farm. The drain line is line 6053.

Waste Type: Equipment
Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations.

Code: 241-TR-153 **Classification:** Accepted

Names: 241-TR-153; 241-TR-153 Booster Pump Pit; 241-TR-153 Diversion Box; Line 6172 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1983

Description: This unit is constructed of reinforced concrete and is rectangular in shape.
Location: The 241-TR-153 Diversion Box is located east of Tank 241-T-107 within the 241-T Tank Farm.
Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/Structures: The 241-TR-153 Diversion Box is associated with the 241-TR-152 and 241-TXR-151 Diversion Boxes, 241-T Tank Farm, and the 241-T-301B Catch Tank. The drain line to 241-T-102 is number 6172.

Waste Type: Equipment
Waste Description: Waste lead is stored in the diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Chemicals
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation.

Code: 200-W-52 **Classification:** Accepted

Names: 200-W-52; 216-T-7 Crib; 241-T-3 Crib **Reclassification:** None

Type: Crib **Start Date:** 1/1/1948
Status: Inactive **End Date:** 1/1/1955

Description: The crib is located inside the 241-T Tank Farm fence. The fence is posted with Radiological Buffer Area/Underground Radioactive Material signs. The tank farm has a gravel surface. The crib is not separately identified.

Location: The crib is located inside the 241-T Tank Farm fence, east of the 216-T-7 Tile Field.

Process Description: The site consists of one wooden crib box with inlet and outlet piping and a riser pipe. The box is set into a gravel layer in the bottom of a pit with sloping sides. It is connected to a tile field that is located west of the crib. The 216-T-7 crib received second cycle supernate from 221-T, 224-T waste and tank 5-6 waste after it cascaded through the 241-T-110, 241-T-111 and 241-T-112 tanks. The 216-T-7 Tile Field received overflow from the crib.

Related Sites/ Structures: The crib is associated with the 216-T-7 Tile Field, the 241-T Tank Farm, 221-T and 224-T.

Waste Type: Process Effluent
Waste Description:

Code: 200-W-93 **Classification:** Accepted
Names: 200-W-93; Contaminated Soil at 241-T Tank Farm **Reclassification:** None

Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site is the soil inside and adjacent to the chain link fence that surrounds the 241-T Tank Farm. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The 216-T-7 and 216-T-32 Cribs are located inside the tank farm fence and are marked with "Crib" signs. The 216-T-7 Tile Field is partially inside the tank farm, but most of it extends westward, beyond the fence line. The individual unplanned releases associated with the 241-T Tank Farm are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas will also be considered tank farm soil. A posted Underground Radioactive Material area currently extends outside the 241-T Tank Farm fence on the west side.

Location: The site is located west of 221-T, at the intersection of 23rd Street and Camden Ave., in 200 West Area.

Release Description: The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks.

Related Sites/ Structures: Unplanned Releases UPR-200-W-7, UPR-200-W-147 and UPR-200-W-148 are associated with the 241-T Tank Farm. The 216-T-7 and 216-T-32 Cribs are located inside the tank farm fence.

Waste Type: Process Effluent
Waste Description: Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne contamination spreads occurred from activities conducted in valve pits and diversion boxes.

Both types of releases contributed to the contamination in the soil.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-W-7

Names: UPR-200-W-7; Contamination Spread from the 241-T-151 and 241-T-152 Diversion Boxes; UN-200-W-7

Code: UPR-200-W-147

Names: UPR-200-W-147; 241-T-103 Leak

Code: UPR-200-W-148

Names: UPR-200-W-148; 241-T-106 Leak

WMA TX/TY

Code: 242-T	Classification: Accepted
Names: 242-T; 242-T Evaporator Facility; 241-T Evaporator	Reclassification: None
Type: Evaporator	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1986

Description: The 242-T is a reinforced concrete and structural steel building. The facility consists of the 242-T building with the control room in the southeast portion, 242-TB and the 242-TA vault. The evaporator portion of 242-T contains a feed cell, an evaporator vessel, a cyclone separator, a catch tank and two preheater tanks. The condensate portion contains the off-gas vessels, two condensate catch tanks and a sample gallery. The 242-TA Vault is a concrete lined pit with a ground level steel cover. A 15,120 liter (4000 gallon) receiver tank is inside the vault. This tank received Z Plant waste.

Location: The building is adjacent to the east side of the 241-TX/TY Tank Farm fence.

Process Description: The 242-T Evaporator Facility was originally constructed to increase storage capacity in the existing underground tank farm tanks through a batch evaporation, waste concentration process. From 1950 to 1955 and 1965 through 1976, 242-T operated as a tank waste evaporator. The evaporation operation of non-boiling tank farm waste was discontinued in 1976. From 1976 to 1980, the 242-T Evaporator was used to neutralize Z Plant salt acid waste. This process ended in 1980, with the completion of the 244-TX Double-Shell Receiver Tank. From 1980 to 1985 the control area of the facility was utilized to support the saltwell pumping program.

Related Sites/ Structures: The 242-T is associated with the 241-TX/TY tanks.

Waste Type: Process Effluent

Waste Description: During the 1950's, the facility concentrated separation process, first cycle decontamination waste from the tank farms. First cycle waste typically contained 10% of the original fission products and 1% plutonium in solution with nitrates, phosphates and sulfates. From the 1960's to the late 1970's, it received single-shell supernatant waste, complexed radioactive waste, and dilute miscellaneous radioactive waste. From 1976 to 1980, the evaporator was used to neutralize Z Plant waste. During its active life, the facility received and processed 127,204,560 liters (33,652,000 gallons) of waste.

Code: 242-T-135	Classification: Accepted
Names: 242-T-135; IMUST; Inactive Miscellaneous Underground Storage Tank	Reclassification: None
Type: Storage Tank	Start Date:
Status: Inactive	End Date:

Description: The unit is a tank partially below grade, constructed of stainless steel. An agitator and a hopper are installed on top of the tank. The tank is surrounded with steel posts and chain, located behind a steel radiation shield wall. The area surrounding the tank is posted with Contamination Area and IMUST signs.

Location: The tank is located adjacent to the east wall of the 242-T Catch Tank Room and north of the 242-T Control Room. The 242-T buildings are located adjacent to the 241-TX Tank Farm, outside the fence.

Process: The tank was installed to hold decontamination solutions from the 242-T Evaporator. The

Process Description: solutions were charged through a hopper on the top of the tank and removed through the top using a jet.

Related Sites/ Structures: The unit is associated with the operation of the 242-T evaporator .

Waste Type: Process Effluent

Waste Description: The contents of the tank are not known. The tank mission was storage of 242-T decontamination solutions. The content of the tank would include 242-T decontamination solutions.

Code: 242-T-151 **Classification:** Accepted

Names: 242-T-151; 242-T-151 Diversion Box. Line V830 **Reclassification:** None

Type: Diversion Box **Start Date:**

Status: Inactive **End Date:**

Description: This unit is constructed of reinforced concrete and is rectangular in shape.

Location: This unit is located southeast of the 241-TX-116 Tank, inside the 241-TX Tank Farm.

Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 242-T-151 Diversion Box is associated with the 241-TX Tank Farm, 241-T-153 Diversion Box, and 242-T Evaporator. The drain line for this diversion box is V830.

Waste Type: Equipment

Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Process Effluent

Waste Description: This unit was used for the transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Code: 242-TA-R1 **Classification:** Accepted

Names: 242-TA-R1; IMUST; Inactive Miscellaneous Underground Storage Tank; Receiver Tank TK-R1; Receiver TK-Vault; Z Waste; 242-TA; 242-TA Receiver Tank Vault **Reclassification:** None

Type: Receiving Vault **Start Date:**

Status: Inactive **End Date:**

Description: The unit is a below-grade 16 foot diameter (at bottom) by 20 foot high cylindrical structure, with a 16 foot octagon-shaped top at grade level. The vault is constructed of concrete and contains a 4200 gallon tank. The surface is surrounded with a metal rail fence and labeled with IMUST signs.

Location: The unit is located inside the 241-TX Tank Farm, adjacent to the southwest corner of the 242-T

Building.

Process Description: The Z Waste Receiver Tank received high salt waste from tank D-5 in the 241-Z building. The Z Waste Receiver Tank waste was sent to the Blend Tank TK-B1 inside the 242-T building. Off-gasses from the tank are sent to the vessel vent system in the 242-TB building.

Related Sites/ Structures: The tank is associated with the 241-Z facility.

Waste Type: Process Effluent

Waste Description: The waste reportedly contains 0.007 grams per gallon of Plutonium; 4.756 molar concentration of nitrate ion; 0.15 molar concentration of Sodium ion; 0.842 molar concentration of trivalent Aluminum; 0.648 molar concentration of free Hydrogen atoms; 0.454 molar concentration of divalent Aluminum Fluoride; 0.180 molar concentration of bivalent Magnesium; 0.087 molar concentration of trivalent Iron; 0.059 molar concentration of Potassium ion; 0.013 molar concentration of Sulphate ion; and 0.0005 molar concentration of divalent Uranium Oxide.

Code: 241-TX-101	Classification: Accepted
Names: 241-TX-101; 241-TX-TK-101	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1949
Status: Inactive	End Date: 1/1/1980

Description: This unit is a second-generation underground single-shell storage tank. Tank 241-TX-101 is the first tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-101 is located in the southeastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-101 included the REDOX Facility, PUREX, and B-Plant.

Related Sites/ Structures: Structures associated with Tank 241-TX-101 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to this unit includes bismuth phosphate metal waste, REDOX waste, coating waste, tributyl phosphate, and waste fractionation ion exchange waste. Other waste includes high level and low level waste from B-Plant, non-complexed waste, PUREX low-level waste, organic wash waste, partial neutralization feed waste, and evaporator bottoms. The unit also received decontamination waste from 241-C, -BX, -SX, -TX Tank Farms.

Code: 241-TX-102	Classification: Accepted
Names: 241-TX-102; 241-TX-TK-102	Reclassification: None
Type: Single-Shell Tank	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1975

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-102 is the second tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-102 is located in the southern portion of the 241-TX Tank Farm.

Process**Description:**

**Related Sites/
Structures:** Structures associated with Tank 241-TX-102 include passive ventilation, drywells, and a surface level measurement instrument.

Waste Type: Storage Tank

**Waste
Description:** Waste transferred to Tank 241-TX-102 included bismuth phosphate metal waste, 242-T Evaporator waste, and supernatant containing REDOX high-level waste, and evaporator bottoms from 241-TX Tanks.

Code: 241-TX-103

Classification: Accepted

Names: 241-TX-103; 241-TX-TK-103

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1980

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-103 is the third tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-103 is located in the southern portion of the 241-TX Tank Farm.

**Process
Description:** Waste sources for Tank 241-TX-103 included the 242-A Evaporator, and the 241-TX Tanks.

**Related Sites/
Structures:** Structures associated with Tank 241-TX-103 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

**Waste
Description:** Waste transferred to Tank 241-TX-103 included bismuth phosphate metal waste, 242-T Evaporator waste, noncomplexed waste, tributyl phosphate waste, and partial neutralization feed from 241-TX Tanks.

Code: 241-TX-104

Classification: Accepted

Names: 241-TX-104; 241-TX-TK-104

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1977

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-104 is the fourth tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-104 is located in the southwestern portion of the 241-TX Tank Farm.

**Process
Description:** Waste sources for Tank 241-TX-104 included the REDOX Facility, PUREX, and B-Plant, 242-T Evaporator, and Tank Farms 241-TY and 241-TX.

**Related Sites/
Structures:** Structures associated with Tank 241-TX-104 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

**Waste
Description:** Waste transferred to Tank 241-TX-104 included bismuth phosphate metal waste, 242-T

Description: Evaporator waste, and supernatant containing REDOX ion exchange and high-level waste, PUREX organic wash waste, B Plant low-level waste, and tributyl phosphate from 241-TY and 241-TX Tanks.

Code: 241-TX-105 **Classification:** Accepted

Names: 241-TX-105; 241-TX-TK-105 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1976

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-105 is the first tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-105 is located in the southeastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-105 included the REDOX Facility, PUREX, and the 241-BX and 241-SX Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-TX-105 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to tank 241-TX-105 included bismuth phosphate metal waste, 242-T Evaporator waste, and supernatant containing REDOX ion exchange and high-level waste, and PUREX organic wash waste from 241-BX and 241-SX Tank Farms.

Code: 241-TX-106 **Classification:** Accepted

Names: 241-TX-106; 241-TX-TK-106 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1977

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-106 is the second tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-106 is located in the southeastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-106 included the REDOX Facility, PUREX, 242-T Evaporator, and the 241-TX Tank Farm.

Related Sites/Structures: Structures associated with Tank 241-TX-106 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-106 included bismuth phosphate metal waste, tributyl phosphate waste, 242-T Evaporator waste, and supernatant containing REDOX ion exchange and high-level waste, PUREX organic wash waste, evaporator bottoms, and coating waste from 241-TX Tanks.

single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-109 is located in the eastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-109 included the 242-T Evaporator and the 241-T, 241-TX, and 241-TY Tank Farms.

Related Sites/ Structures: Structures associated with Tank 241-TX-109 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-109 included: bismuth phosphate first-cycle waste, 242-T Evaporator waste, and evaporator bottoms from the 241-T, 241-TX, and 241-TY Tanks.

Code: 241-TX-110 **Classification:** Accepted

Names: 241-TX-110; 241-TX-TK-110 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1977

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-110 is the second tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-110 is located in the central portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-110 included the 242-T Evaporator and T Plant.

Related Sites/ Structures: Structures associated with Tank 241-TX-110 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-110 included bismuth phosphate first-cycle waste and 242-T Evaporator waste.

Code: 241-TX-111 **Classification:** Accepted

Names: 241-TX-111; 241-TX-TK-111 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1977

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-111 is the third tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-111 is located in the central portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-111 included the 242-T Evaporator, T Plant, and the 241-TY Tanks.

Related Sites/ Structures: Structures associated with Tank 241-TX-111 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Structures: well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-111 included bismuth phosphate first-cycle waste, 242-T

Evaporator waste, and supernatant containing tributyl phosphate waste from 241-TX Tanks.

Code: 241-TX-112 **Classification:** Accepted

Names: 241-TX-112; 241-TX-TK-112 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1976

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-112 is the fourth tank of a four-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-112 is located in the western portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-112 included the 242-T Evaporator, T Plant, and the 241-TY Tanks.

Related Sites/Structures: Structures associated with Tank 241-TX-112 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-112 included 242-T Evaporator waste, bismuth phosphate

first-cycle waste, and supernatant containing evaporator bottoms from the 241-TX Tanks.

Code: 241-TX-113 **Classification:** Accepted

Names: 241-TX-113; 241-TX-TK-113 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1976

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-113 is the first tank of a three-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-113 is located in eastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-113 included the 242-T Evaporator and the 241-TX Tanks.

Related Sites/Structures: Structures associated with Tank 241-TX-113 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste Transferred to Tank 241-TX-113 included 242-T Evaporator waste and supernatant

containing evaporator bottoms from 241-TX Tanks.

Code: 241-TX-114 **Classification:** Accepted

Names: 241-TX-114; 241-TX-TK-114 **Reclassification:** None

Location: Tank 241-TX-116 is located in the northeastern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-116 included the 241-TX Tanks.

Related Sites/Structures: Structures associated with Tank 241-TX-116 include passive ventilation, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-116 included supernatant containing evaporator bottoms from 241-TX Tanks. Diatomaceous earth was added in 1969.

Code: 241-TX-117 **Classification:** Accepted

Names: 241-TX-117; 241-TX-TK-117 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1976

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-117 is the second tank of a three-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-117 is located in the northern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-117 included the 242-T Evaporator and 241-TX Tanks.

Related Sites/Structures: Structures associated with Tank 241-TX-117 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TX-117 included supernatant containing first-cycle waste and evaporator bottoms from 241-TX Tanks. Diatomaceous earth was also added in 1969.

Code: 241-TX-118 **Classification:** Accepted

Names: 241-TX-118; 241-TX-TK-118 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1980

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TX-118 is the third tank of a three-tank cascade series. This cylindrical tank is concrete-reinforced with a single steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TX-118 is located northwestern portion of the 241-TX Tank Farm.

Process Description: Waste sources for Tank 241-TX-118 included 242-T Evaporator, 234-Z and 235-Z Buildings, and the 241-T, 241-TX, 241-TY, 241-U Tank Farms.

Related Sites/Structures: Structures associated with Tank 241-TX-118 include passive ventilation, a liquid observation well, drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to tank 241-TX-118 included 242-T Evaporator feed tank waste, 234-Z and

Description: 235-Z Buildings waste, caustic solution, tributyl phosphate waste, decontamination waste, bismuth phosphate first-cycle waste, evaporator bottoms, partial neutralization feed, and coating waste from the 241-T, 241-TX, 241-TY, and 241-U Tank Farms.

Code: 241-TX-153 **Classification:** Accepted

Names: 241-TX-153; 241-TX-153 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1980

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. The tank farm fence is posted with various radiological postings.

Location: This unit is located inside the 241-TX Tank Farm, southeast of the 241-TX-101 Tank.

Process Description: This unit is used to transfer of solutions from processing and decontamination operations to various tank farm facilities via underground transfer lines..

Related Sites/ Structures: The 241-TX-153 Diversion Box is associated with the 241-TX-155 Diversion Box and the 241-TX Tank Farm, the 241-TX-302A and 241-TX-302B Catch Tanks and UPR-200-W-126. The pipeline from the diversion box to the 216-T-19 crib is sitecode 200-W-213-PL.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solution from processing and decontamination operations. Volumes were variable according to specific plant operations. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box

Code: 241-TX-302A **Classification:** Accepted

Names: 241-TX-302A; 241-TX-302-A Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Lines V627 and V628 **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1982

Description: This unit is an underground, horizontal cylindrical tank made of steel. The tank farm surface has been covered with gravel. The tank is surrounded with posts and chain and labeled with IMUST signs.

Location: This tank is located southwest of the 241-TX-153 Diversion Box, inside the 241-TX Tank Farm.

Process Description: The 241-TX-302A Catch Tank received drainage from Diversion Box 241-TX-153 and associated encasements.

Related Sites/ Structures: This unit is associated with the 241-TX-153 Diversion Box and the 241-TX-302X Catch Tank. Lines V627 and V628 are the drain lines from the 241-TX-153 diversion Box.

Waste Type: Process Effluent

Waste Description: This tank collected waste solution spills that occurred during transfers from processing and decontamination operations via the 241-TX-153 Diversion Box. Volumes collected were

variable according to specific plant operations. In 1994, it was estimated the tank contained approximately 113 liters (30 gallons) of supernate liquid and 9261 liters (2450 gallons) of sludge.

Code: 241-TX-302XB **Classification:** Accepted

Names: 241-TX-302XB; IMUST; Inactive Miscellaneous Underground Storage Tank; 241-TX-302B Catch Tank; 241-TX-302-X; 241-TX-302-X (B) **Reclassification:** None

Type: Catch Tank **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1985

Description: This unit is a horizontal, cylindrical tank made of carbon steel. The tank is surrounded with posts and chain and labeled with IMUST signs. The tank is buried underground to provide radiation shielding.

Location: This catch tank is located east of Tank 241-TX-101, inside the 241-TX Tank Farm.

Process Description: This tank received drainage from a concrete encasement originating at the 241-TX-153 Diversion Box.

Related Sites/Structures: The 241-TX-302-X Catch Tank is associated with Diversion Box 241-TX-153.

Waste Type: Storage Tank

Waste Description: This unit was used for containment of waste solution spills that occurred during transfers from processing and decontamination operations. The contents include metal waste and radiological mixed waste. As of May 1994, 1341 liters (353 gallons) remained in the tank. Per WRPS-0901391, the liquid waste level at that time was 6.5 inches and the solid waste level was 3 inches. The solids volume is 103 gallons. The amount of liquid waste in the tank was estimated to be 237 gallons. The total volume is 340 gallons.

Code: 244-TX DCRT **Classification:** Accepted

Names: 244-TX DCRT; 244-TX Double-Contained Receiver Tank; 244-TX Receiver Tank; 244-TX Receiver Vessel; 244-TX RT; 244-TX-TK/SMP **Reclassification:** None

Type: Receiver Tank **Start Date:** 1/1/1981

Status: Inactive **End Date:** 1/1/2005

Description: This unit is an underground, horizontal cylindrical vessel that sets in a reinforced concrete, steel-lined vault.

Location: The unit is located north of the 241-TX Tank Farm, within the 241-TY Tank Farm fence.

Process Description: Waste sources for the 244-TX Receiver Tank included the Plutonium Finishing Plant, T Plant, and the 241-T Tank Farm.

Related Sites/Structures: The 244-TX Receiver Tank is associated with the Plutonium Finishing Plant, T- Plant, 241-T Tank Farm, and 241-TX-152 Diversion Box.

Waste Type: Process Effluent
Waste Description: Waste transferred to this unit include T Plant decontamination waste, Plutonium Finishing Plant waste, and waste solution stored in the 241-T Tank Farms.

Code: 241-TXR-151 **Classification:** Accepted
Names: 241-TXR-151; 241-TXR-151 Diversion Box; **Reclassification:** None
Line 7765
Type: Diversion Box **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1980

Description: The diversion box is a rectangular reinforced concrete structure. Most of the structure is below ground. A few inches of the structure that extends above ground is covered with a gray weather coating. The tank farm fence is posted with various radiological postings.

Location: This unit is located east of the 244-TXR Vault, inside the 241-TX Tank Farm fence.

Process Description: This unit is used to transfer waste solutions from processing and decontamination operations to various tank farm facilities.

Related Sites/ Structures: Structures associated with the 241-TXR-151 Diversion Box include the 241-TR-152 and 241-TR-153 Diversion Boxes and the 244-TXR Vault. The drain line to the 244-TXR sump is line 7765.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of radioactive waste solutions from processing and decontamination operations. Contamination in the diversion box is estimated to be high in alpha, beta and gamma radiation. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 241-TXR-152 **Classification:** Accepted
Names: 241-TXR-152; 241-TXR-152 Diversion Box; **Reclassification:** None
Line 7053
Type: Diversion Box **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1980

Description: This unit is constructed of reinforced concrete and is rectangular in shape. The 241-TXR-152 has been weather covered.

Location: This unit is located east of Tank 241-TX-105, inside the 241-TX Tank Farm.

Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 241-TXR-152 Diversion Box is associated with the 241-TXR-151 Diversion Box and the 241-TX Tank Farm and drains to the 241-TX-101 Tank through line 7053.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-TXR-153 **Classification:** Accepted
Names: 241-TXR-153; 241-TXR-153 Diversion Box; Line 7253 **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1980
Description: This unit is constructed of reinforced concrete and is rectangular in shape. The 241-TXR-153 has been weather covered.
Location: This unit is located east of Tank 241-TX-105, inside the 241-TX Tank Farm.
Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.
Related Sites/Structures: The 241-TXR-153 Diversion Box is associated with the 241-TXR-151 Diversion Box and the 241-TX Tank Farm and drains to the 241-TX-105 Tank through line 7253.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles. Waste lead is also stored in the diversion box.

Code: 244-TXR VAULT **Classification:** Accepted
Names: 244-TXR VAULT; 244-TXR Vault (Tanks TXR-001, -002, -003); IMUST; Inactive Miscellaneous Underground Storage Tank; 241-TXR-244; 244-TXR **Reclassification:** None
Type: Receiving Vault **Start Date:** 1/1/1950
Status: Inactive **End Date:** 1/1/1957
Description: The 244-TXR Vault is a rectangular, reinforced concrete pit. The vault is surrounded with post and chain and marked with IMUST signs. The vault houses three steel storage tanks (244-TK-TXR-1, -TXR-2, and TXR-3; see "Subsite" sections). The 244-TK-TXR-1 Tank has a 50,000 gallon (189,000 liter) capacity and the 244-TK-TXR-2 and TXR-3 each have a 15,000 gallon (56,800 liters) capacity. The vault is buried to a depth that places the upper surface of its lid about 12 inches (30.5 centimeters) above grade.
Location: The vault is located within the tank farm fence, south of the 241-TX Tank Farm and west of Camden Avenue.
Process Description: The vault and associated tanks were used for processing was from 241-T and 241-TX tank farms and to transfer the processed waste to U Plant for uranium recovery.

Related Sites/ Structures: connected to the 241-TXR-151, 241-TR-152, and 241-TR-153 Diversion Boxes.

Waste Type: Equipment
Waste Description: Equipment associated with the 244-TXR Vault includes the steel tanks, piping, nozzles, and other miscellaneous equipment.

Waste Type: Chemicals
Waste Description: The vault received uranium waste, generated at T-Plant, that was transferred to the 241-T and 241-TX Tank Farms. The vault product consisted of processed slurry that was transferred to U Plant for uranium recovery.

This Site has the Following SubSites:

Code: 244-TXR VAULT:1
Names: 244-TXR VAULT:1; 244-TXR-001
Code: 244-TXR VAULT:2
Names: 244-TXR VAULT:2; 244-TXR-002
Code: 244-TXR VAULT:3
Names: 244-TXR VAULT:3; 244-TXR-003

Code: 244-TXR VAULT:1	Classification: Accepted
Names: 244-TXR VAULT:1; 244-TXR-001	Reclassification: None
Type: Receiving Vault	Start Date:
Status: Inactive	End Date:

Description: Tank 244-TXR-0001 is located in a concrete cell, inside the 244-TXR Vault. The cell is 6.7 meters (22 feet) by 7.9 meters (26 feet) by 8.8 meters (28.8 feet). The tank is 6.1 meters (20 feet) tall and 6.1 meters (20 feet) in diameter. The tank has a 189,000 liter (50,000 gallon) capacity. The tank was used as a slurry accumulator for bismuth phosphate waste from tanks in T and TX farms. The tank is isolated and stabilized. Samples were collected and analyzed in 1984 from both the tank and the sump. Results included 1.05 micro curies/liter Total Alpha, 4,510 micro curies/liter Total Beta, and 4,490 micro curies/liter cesium-137- GEA. 0.108 N0-2 and 0.442 N03 were noted without units. Hanford Occurrence Report 79-68 indicates this tank is of questionable integrity.

The SubSite is Part Of:

Code: 244-TXR VAULT
Names: 244-TXR VAULT; 244-TXR Vault (Tanks TXR-001, -002, -003); IMUST; Inactive Miscellaneous Underground Storage Tank; 241-TXR-244; 244-TXR

Code: 244-TXR VAULT:2	Classification: Accepted
Names: 244-TXR VAULT:2; 244-TXR-002	Reclassification: None
Type: Receiving Vault	Start Date:
Status: Inactive	End Date:

Description: Tank 244-TXR-002 is located in a concrete cell, inside the 244-TXR Vault. The cell is 4.9 meters (16 feet) by 6.1 meters (20 feet) by 5.8 meters (19 feet). The tank is 3.7 meters (12 feet) tall and 4.3 meters (14 feet) in diameter. It has a 56,775 liter (15,000 gallon) capacity. The tank was used to acidify material for the uranium recovery process. Slurry was transferred from tank 001 and nitric acid was added prior to being pumped to U-Plant. The tank is isolated and stabilized. The tank contains 11,147 liters (2945 gallons) of sludge and no supernate. Samples

were collected and analyzed in 1975 from the tank and had a dose rate of 1.5 R/hr. Results included 0.72 micro curies/liter Pu, 100 micro curies/liter Cs-134, 22,000 micro curies/liter Cs-137 and 10 micro curies/liter Sr-90. There was also 630 mg/L Al, 19,400 mg/L Na, 82,500 mg/L NO₃ and 110 mg/L Cl.

The SubSite is Part Of:

Code: 244-TXR VAULT

Names: 244-TXR VAULT; 244-TXR Vault (Tanks TXR-001, -002, -003); IMUST; Inactive Miscellaneous Underground Storage Tank; 241-TXR-244; 244-TXR

Code: 244-TXR VAULT:3

Classification: Accepted

Names: 244-TXR VAULT:3; 244-TXR-003

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: Tank 244-TXR-003 is located in a concrete cell, inside the 244-TXR Vault. The cell is 4.9 meters (16 feet) by 6.1 meters (20 feet) by 5.8 meters (19 feet). The tank is 3.7 meters (12 feet) tall and 4.3 meters (14 feet) in diameter. It has a 56,775 liter (15,000 gallon) capacity. The tank was used to acidify material for the uranium recovery process. Slurry was transferred from tank 001 and nitric acid was added prior to being pumped to U-Plant. The tank is isolated and stabilized. The tank contains 26,450 liters (6460 gallons) of sludge and no supernate. No sample information is mentioned.

The SubSite is Part Of:

Code: 244-TXR VAULT

Names: 244-TXR VAULT; 244-TXR Vault (Tanks TXR-001, -002, -003); IMUST; Inactive Miscellaneous Underground Storage Tank; 241-TXR-244; 244-TXR

Code: 241-TY-101

Classification: Accepted

Names: 241-TY-101; 241-TY-TK-101

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1973

Description: This unit is a second-generation, underground single-shell storage tank. Tank 241-TY-101 is the first tank of a two-tank cascade series. This tank is concrete-reinforced, cylindrical, and dome-roofed with a steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TY-101 is located in the northeastern portion of the 241-TY Tank Farm.

Process Description: Waste sources for Tank 241-TY-101 include the 242-T Evaporator and T-Plant.

Related Sites/ Structures: Structures associated with Tank 241-TY-101 include passive ventilation, drywells, temperature and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TY-101 included bismuth phosphate first-cycle waste, tributyl phosphate waste, and evaporator bottoms from 241-TY, -TX, and -SX Tank Farms.

Code: 241-TY-102

Classification: Accepted

Names: 241-TY-102; 241-TY-TK-102

Reclassification: None

Location: Tank 241-TY-104 is located on the west side of the 241-TY Tank Farm.

Process Description: Waste sources for Tank 241-TY-104 include the 242-T Evaporator and T-Plant.

Related Sites/Structures: Structures associated with Tank 241-TY-104 include passive ventilation, drywells, temperature and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-TY-104 included tributyl phosphate waste, REDOX ion exchange waste, PUREX organic wash waste, bismuth phosphate first-cycle waste, and decontamination waste from 241-TX and -TY Tank Farms.

Code: 241-TY-105 **Classification:** Accepted

Names: 241-TY-105; 241-TY-TK-105 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1960

Description: This unit is a second-generation single-shell storage tank. Tank 241-TY-105 is the first tank of a two-tank cascade series. This tank is concrete-reinforced, cylindrical, and dome-roofed with a steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TY-105 is located in the southeast portion of the 241-TY Tank Farm.

Process Description: Tank 241-TY-105 received tributyl phosphate waste.

Related Sites/Structures: Structures associated with Tank 241-TY-105 include passive ventilation, drywells, temperature and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Tank 241-TY-105 received tributyl phosphate waste.

Code: 241-TY-106 **Classification:** Accepted

Names: 241-TY-106; 241-TY-TK-106 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1959

Description: This unit is a second generation single-shell storage tank. Tank 241-TY-106 is the second tank of a two-tank cascade series. This tank is concrete-reinforced, cylindrical, and dome-roofed with a steel liner lying across the tank bottom and up the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-TY-106 is located in the southwestern portion of the 241-TY Tank Farm.

Process Description: Tank 241-TY-106 received tributyl phosphate waste.

Related Sites/Structures: Structures associated with Tank 241-TY-106 include passive ventilation, drywells, temperature and surface level measurement devices.

Waste Type: Storage Tank

Waste Description: Tank 241-TY-106 contains tributyl phosphate waste. Diatomaceous earth was added in 1969.

Description:

Code: 241-TY-153	Classification: Accepted
Names: 241-TY-153; 241-TY-153 Diversion Box	Reclassification: None
Type: Diversion Box	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1981

Description: This unit is constructed of reinforced concrete and is rectangular in shape.

Location: This unit is located in the southeast corner of the 241-TY Tank Farm.

Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 241-TY-153 Diversion Box is associated with the 241-TY Tank Farm, the 241-TY-302A Catch Tank, and the 241-TX-153 and 241-TX-155 Diversion Boxes. The drain line is V651.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Equipment

Waste Description: Waste lead is stored in the diversion box.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solution from processing and decontamination operations. Lead shielding may also be contained inside the diversion box.

Code: 241-TY-302A	Classification: Accepted
Names: 241-TY-302A; 241-TY-302-A Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank; Line V651	Reclassification: None
Type: Catch Tank	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1981

Description: This unit is a horizontal, cylindrical tank made of steel. The tank is surrounded with post and chain and marked with IMUST signs. The tank is buried underground to provide radiation shielding.

Location: This unit is located in the southeast corner of the 241-TY Tank Farm.

Process Description: The catch tank received drainage from Diversion Box 241-TY-153.

Related Sites/ Structures: The 241-TY-302A Catch Tank is associated with the 241-TY-153 Diversion Box and the 241-TY Tank Farm. The drain line is line V651.

Waste Type: Process Effluent

Waste Description: This tank collected overflow waste solutions from processing and decontamination operations that passed through the 241-TY-153 Diversion Box. Volumes were variable according to specific plant operation. The volume is unknown and not monitored.

Code: 241-TY-302B **Classification:** Accepted
Names: 241-TY-302B; 241-TY-302-B Catch Tank; **Reclassification:** None
IMUST; Inactive Miscellaneous Underground
Storage Tank
Type: Catch Tank **Start Date:** 1/1/1953
Status: Inactive **End Date:** 1/1/1981

Description: This unit is a horizontal, cylindrical tank made of steel. The tank is surrounded with post and chain and marked with IMUST signs. The tank is buried underground to provide radiation shielding.

Location: This unit is located in the northeast corner of the 241-TY Tank Farm.

Process Description: This catch tank received drainage from a concrete encasement originally at Diversion Box 241-TY-153.

Related Sites/ Structures: The 241-TY-302B Catch Tank is associated with the 241-TY-153 Diversion Box.

Waste Type: Storage Tank
Waste Description: This unit accepted overflow waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation.

Code: 200-W-94 **Classification:** Accepted
Names: 200-W-94; Contaminated Soil at 241-TX/TY **Reclassification:** None
Tank Farm
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site is the soil inside and adjacent to the chain link fence that surrounds the 241-TX/TY Tank Farm complex. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The individual unplanned releases associated with the 241-TX/TY Tank Farms are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas will also be considered tank farm soil. A portion of the 242-T Evaporator building is located inside the tank farm fence.

Location: The site is located south of 23rd Street and west of Camden Ave., in 200 West Area.

Release Description: The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks.

Related Sites/ Structures: Unplanned Release sites UPR-200-W-12, UPR-200-W-17, UPR-200-W-100, UPR-200-W-126, UPR-200-W-129, UPR-200-W-149, UPR-200-W-150, UPR-200-W-151, UPR-200-W-152 and UPR-200-W-153 are associated with the 241-TX/TY Tank Farms.

Waste Type: Process Effluent
Waste Description: Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne contamination spreads occurred from activities conducted in valve pits and diversion boxes.

WMA U

Code: 241-U-A **Classification:** Accepted

Names: 241-U-A; 241-U-A Diversion Box; 241-U-A Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1973

Status: Inactive **End Date:**

Description: This unit is a rectangular reinforced concrete structure. The valve pit is below grade with the cover block above grade. It has been covered with foam. Valve handles extended above the cover block through penetrations.

Location: Valve Pit 241-U-A is located southeast of Tank 241-U-102 and northeast of Tank 241-U-105.

Release Description: This unit is designed to contain leaks from transfers and drainage from operations within the unit.

Process Description: This unit was designed to route waste solutions to the 241-U Tanks from the 242-S Evaporator Building.

Related Sites/Structures: The 241-U-A Valve Pit is associated with the 241-U Tank Farm and the 241-U-105 Tank. Flush Pit 241-U-A is also associated with the valve pit.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-U-B **Classification:** Accepted

Names: 241-U-B; 241-U-B Diversion Box; 241-U-B Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1973

Status: Inactive **End Date:**

Description: This unit is a rectangular reinforced concrete structure that has been covered with foam. The valve pit is below grade with the cover block above grade. Valve handles extended above the cover block through penetrations.

Location: Valve Pit 241-U-B is located southwest of Tank 241-U-101 and northwest of Tank 241-U-104.

Process Description: This unit was designed to route waste solutions to the 241-U Tanks from the 242-S Evaporator Building.

Related Sites/Structures: The 241-U-B Valve Pit is associated with the 241-U Tank Farm and the 241-U-105 Tank. Flush Pit 241-U-B is also associated with the valve pit.

Waste Type: Process Effluent

Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-U-C **Classification:** Accepted
Names: 241-U-C; 241-U-C Diversion Box; 241-U-C Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1973
Status: Inactive **End Date:**
Description: This unit is a rectangular reinforced concrete structure that has been covered with foam. The valve pit is below grade with the cover block above grade. Valve handles extend above the cover block through penetrations.
Location: Valve Pit 241-U-C is located southeast of Tank 241-U-108 and northeast of Tank 241-U-111.
Process Description: This unit was designed to route waste solutions to the 241-U Tanks from the 242-S Evaporator Building.
Related Sites/Structures: The 241-U-C Valve Pit is associated with the 241-U Tank Farm and the 241-U-111 Tank. Flush Pit 241-U-C is also associated with the valve pit.
Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-U-D **Classification:** Accepted
Names: 241-U-D; 241-U-D Diversion Box; 241-U-D Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1973
Status: Inactive **End Date:**
Description: This unit is a rectangular reinforced concrete structure that has been covered with foam. The valve pit is below grade with the cover block above grade. Valve handles extend above the cover block through penetrations.
Location: Valve Pit 241-U-D is located southwest of Tank 241-U-107 and northwest of Tank 241-U-110.
Process Description: This unit was designed to route waste solutions to the 241-U Tanks from the 242-S Evaporator Building.
Related Sites/Structures: The 241-U-D Valve Pit is associated with the 241-U Tank Farm and the 241-U-111 Tank. Flush Pit 241-U-D is also associated with the valve pit.
Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-U-101 **Classification:** Accepted
Names: 241-U-101; 241-U-TK-101 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1959
Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-101 is the

first tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-101 is located northeastern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-101 included the T-Plant and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-101 include passive ventilation, two drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-101 included metal waste from T-Plant. Waste was received from various storage tanks for processing in the 242-T Evaporator. Tank 241-U-101 received a variety of solid waste items. These included experimental fuel elements, shroud tubes, and samarium balls. The total fissile material contents of the waste was 54.01 ounces (1,530 grams) of 4.5 percent enriched uranium and 0.21 ounces (6 grams) of plutonium.

Code: 241-U-102

Classification: Accepted

Names: 241-U-102; 241-U-TK-102

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1976

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-102 is the second tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-102 is located in the northern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-102 included the T-Plant and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-102 include passive ventilation, six drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-102 included metal waste from T-Plant. Waste was also received from various storage tanks for processing in the 242-T Evaporator.

Code: 241-U-103

Classification: Accepted

Names: 241-U-103; 241-U-TK-103

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1947

Status: Inactive

End Date: 1/1/1978

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-103 is the third tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-103 is located in the northwestern portion of the 241-U Tank Farm.

Release Description: UPR-200-W-128.

Process

Description:

Related Sites/ Structures: Structures associated with Tank 241-U-103 include a hydrogen monitor, passive ventilation, liquid observation well, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-103 included metal waste from T-Plant and waste from various storage tanks for processing in the 242-T Evaporator.

Code: 241-U-104

Classification: Accepted

Names: 241-U-104; 241-U-TK-104

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1947

Status: Inactive

End Date: 1/1/1961

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-104 is the first tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-104 is located in the eastern portion of the 241-U Tank Farm.

Release Description: UPR-200-W-155

Process Description: Waste sources for Tank 241-U-104 included the T-Plant and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-104 include passive ventilation, four drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-104 included bismuth phosphate metal waste. Diatomaceous earth was added in 1969.

Code: 241-U-105

Classification: Accepted

Names: 241-U-105; 241-U-TK-105

Reclassification: None

Type: Single-Shell Tank

Start Date: 1/1/1947

Status: Inactive

End Date: 1/1/1978

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-105 is the second tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-105 is located in the central portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-105 included the T-Plant and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-105 include, a hydrogen monitor, passive ventilation, liquid observation well, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-105 included bismuth phosphate metal waste, REDOX waste,

coating waste, decontamination waste, and evaporator feed and bottoms waste.

Code: 241-U-106 **Classification:** Accepted
Names: 241-U-106; 241-U-TK-106 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1948
Status: Inactive **End Date:** 1/1/1977

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-106 is the third tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-106 is located in the western portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-106 included the T-Plant and REDOX Facilities.

Related Sites/Structures: Structures associated with Tank 241-U-106 include passive ventilation, liquid observation well, four drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-U-106 included bismuth phosphate metal waste, REDOX waste, coating waste, decontamination waste, and evaporator feed and bottoms waste.

Code: 241-U-107 **Classification:** Accepted
Names: 241-U-107; 241-U-TK-107 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1948
Status: Inactive **End Date:** 1/1/1980

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-107 is the first tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-107 is located in the eastern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-107 included the T Plant and REDOX Facilities.

Related Sites/Structures: Structures associated with Tank 241-U-107 include a hydrogen monitor, passive ventilation, liquid observation well, four drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-U-107 included bismuth phosphate metal waste, REDOX waste, coating waste, decontamination waste, and evaporator feed and bottoms waste.

Code: 241-U-108 **Classification:** Accepted
Names: 241-U-108; 241-U-TK-108 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1979

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-108 is the

second tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-108 is located in the central portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-108 included the T Plant, U Plant, and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-108 include a hydrogen monitor, passive ventilation, liquid observation well, four drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-108 included bismuth phosphate metal waste, REDOX waste, coating waste, decontamination waste, and evaporator feed and bottoms waste.

Code: 241-U-109 **Classification:** Accepted

Names: 241-U-109; 241-U-TK-109 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1980

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-109 is the third tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-109 is located in the western portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-109 included the T Plant, U Plant, and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-109 include a hydrogen monitor, passive ventilation, liquid observation well, four drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to this unit included bismuth phosphate metal waste, REDOX waste, coating waste, decontamination waste, and evaporator feed and bottoms waste.

Code: 241-U-110 **Classification:** Accepted

Names: 241-U-110; 241-U-TK-110 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1975

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-110 is the first tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-110 is located in the southeastern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-110 included the T Plant, U Plant, and REDOX Facilities.

Related Sites/ Structures: Structures associated with Tank 241-U-110 include a hydrogen monitor, passive ventilation, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: This unit received first-cycle decontamination waste, REDOX waste, and evaporator feed.

Code: 241-U-111 **Classification:** Accepted
Names: 241-U-111; 241-U-TK-111 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/1980

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-111 is the second tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-111 is located in the southern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-111 included the T Plant and REDOX Facilities.

Related Sites/Structures: Structures associated with Tank 241-U-111 include a hydrogen monitor, passive ventilation, liquid observation well, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: Tank 241-U-111 received first-cycle decontamination waste, REDOX waste, and 242-T Evaporator waste.

Code: 241-U-112 **Classification:** Accepted
Names: 241-U-112; 241-U-TK-112 **Reclassification:** None
Type: Single-Shell Tank **Start Date:** 1/1/1947
Status: Inactive **End Date:** 1/1/1975

Description: This unit is a first-generation, underground single-shell storage tank. Tank 241-U-112 is the third tank of a three-tank cascade series. This tank is concrete-reinforced, cylindrical, and dome-roofed with a single steel liner lying across the tank wall. The tank is buried underground to provide radiation shielding.

Location: Tank 241-U-112 is located in the southwestern portion of the 241-U Tank Farm.

Process Description: Waste sources for Tank 241-U-112 included the T Plant and REDOX Facilities.

Related Sites/Structures: Structures associated with Tank 241-U-112 include a hydrogen monitor, passive ventilation, five drywells, temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-U-112 included bismuth phosphate first-cycle waste and REDOX high-level waste from the 241-U Tank Farm.

Code: 241-U-153 **Classification:** Accepted
Names: 241-U-153; 241-U-153 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1981

Description: The tank farm is surrounded with a locked chain link fence. The tank farm has been covered with a layer of gravel. The 241-U-153 Diversion Box structure is mostly below ground. It is a reinforced concrete structure with 3 inch (8 centimeter) Hanford style nozzles.

Location: The 241-U-153 Diversion Box is located in the southeast corner of the 241-U Tank Farm. It is east of the 241-U-110 tank.

Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/ Structures: This unit is associated with the 241-U-151, 241-U-152, 241-UR-152, 241-U-153 Diversion Boxes, 200-W-181-PL, 200-W-184-PL, 200-E-185-PL and the 241-U Tank Farm.

Waste Type: Equipment
Waste Description: Waste lead is stored in the diversion box.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations. Lead shielding may also be contained inside the diversion box.

Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Code: 241-U-201 **Classification:** Accepted

Names: 241-U-201; 241-U-TK-201 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1977

Description: This tank is made of reinforced-concrete and is lined with a steel cylinder. The structure has a concrete base slab and is buried underground to provide radiation shielding.

Location: Tank 241-U-201 is located inside the 241-U Tank Farm, west of tank 241-U-109.

Process Description: Waste sources for Tank 241-U-201 included the REDOX Facility and 241-U Tanks.

Related Sites/ Structures: 241-U-201 is associated with 241-U-202, 241-U-203, 241-U-204 and 241-U-252. It has passive ventilation and temperature and surface level measurement instruments.

Waste Type: Storage Tank
Waste Description: Waste transferred to Tank 241-U-201 included supernatant containing REDOX high-level waste from the 241-U Tank Farm.

Code: 241-U-202 **Classification:** Accepted

Names: 241-U-202; 241-U-TK-202 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1978

Description: This tank is made of reinforced-concrete and is lined with a steel cylinder. The structure has a

concrete base slab and is buried underground to provide radiation shielding.

Location: Tank 241-U-202 is located inside the 241-U Tank Farm, west of tank 241-U-109.

Process Description: Waste sources for Tank 241-U-202 included the REDOX Facility and 241-U Tanks.

Related Sites/Structures: 241-U-202 is associated with 241-U-201, 241-U-203, 241-U-204 and 241-U-252. It has passive ventilation and temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-202 included supernatant containing REDOX high-level waste from the 241-U Tank Farm.

Code: 241-U-203 **Classification:** Accepted

Names: 241-U-203; 241-U-TK-203 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1977

Description: This tank is made of reinforced-concrete and is lined with a steel cylinder. The structure has a concrete base slab and is buried underground to provide radiation shielding.

Location: Tank 241-U-203 is located inside the 241-U Tank Farm, west of the 241-U-112 tank.

Process Description: Waste sources for Tank 241-U-203 included the REDOX Facility and 241-U Tanks.

Related Sites/Structures: 241-U-203 is associated with 241-U-201, 241-U-202, 241-U-204 and 241-U-252. It has passive ventilation and temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-203 included supernatant containing REDOX high-level waste from the 241-U Tank Farm.

Code: 241-U-204 **Classification:** Accepted

Names: 241-U-204; 241-U-TK-204 **Reclassification:** None

Type: Single-Shell Tank **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1978

Description: This tank is made of reinforced-concrete and is lined with a steel cylinder. The structure has a concrete base slab and is buried underground to provide radiation shielding.

Location: Tank 241-U-204 is located inside the 241-U Tank Farm, west of the 241-U-112 tank.

Process Description: Waste sources for Tank 241-U-204 included the REDOX Facility and 241-U Tanks.

Related Sites/Structures: 241-U-204 is associated with 241-U-201, 241-U-202, 241-U-203, and 241-U-252. It has passive ventilation and temperature and surface level measurement instruments.

Waste Type: Storage Tank

Waste Description: Waste transferred to Tank 241-U-204 included supernatant containing REDOX high-level waste from the 241-U Tank Farm.

Code: 244-U DCRT **Classification:** Accepted

Names: 244-U DCRT; 244-U Double-Contained Receiver Tank; 244-U Receiver Tank; 244-U Receiving Vault; 244-U RT; 244-U-TK/SUMP **Reclassification:** None

Type: Receiver Tank **Start Date:** 1/1/1987

Status: Inactive **End Date:**

Description: This site consists of an underground reinforced concrete structure in a steel-lined vault. Inside the vault (lower part of structure) is a 21,000-gallon (79,500 liter) carbon steel tank, set horizontally. The structure also contains a pump pit and sump. Approximately 0.31 meter (1 foot) of the structure extends above ground.

Location: This site is located near the southeast corner of the 241-U Tank Farm.

Process Description: This site was intended to receive saltwell waste from the 241-U Tank Farm. This site has not been used for its intended purpose. No waste has been placed in this tank.

Related Sites/ Structures: The unit is associated with 241-U Tank Farm and the 244-U-2904 Flush Pit.

Waste Type: Water

Waste Description: This site does not contain waste, although the site was designed to receive saltwell waste. The unit tank does contains water from operational tests.

Code: 244-U-2904 **Classification:** Not Accepted

Names: 244-U-2904; 244-U Flush Pit **Reclassification:** None

Type: Flush Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site is a building inside the 241-U tank farm fence. The building does not contain any radioactive or hazardous material. The postings on the 241-U Tank Farm fence include Contamination Area, Radiation Area, Radioactive Material and Underground Radioactive Material Area signs.

Location: The flush pit is located in the southeast corner of the 241-U Tank Farm, inside the tank farm fence. It is directly south of the 244-U Double Contained Receiver Tank.

Process Description: The 244-U DCRT was never commissioned and hence has never seen any waste. The flush pit associated with this DCRT has never had any waste associated with it and is considered inactive.

Related Sites/ Structures: The flush pit is associated with the 244-U DCRT.

Code: 241-UR-151 **Classification:** Accepted

Names: 241-UR-151; 241-UR-151 Diversion Box; Drain Lines 5764 and 5765 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1980

Description: The diversion box and surrounding area has been covered with shotcrete. This unit is constructed of reinforced concrete and is rectangular in shape.

Location: The 241-UR-151 Diversion Box is located in the northern portion of the 241-U Tank Farm, inside the tank farm fence.

Process Description: This unit is the master diversion box for the 241-U Tank Farm. The diversion box was used to transfer waste solution to and from the tank farm.

Related Sites/ Structures: The 241-UR-151 Diversion Box is associated with the 241-UR-152, 241-UR-153, 241-UR-154, and 241-U-151 Diversion Boxes. The unit is also associated to the 221-U Canyon Building and various 200 West Area Operations Facilities. The drain lines are 5764 and 5765.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Equipment

Waste Description: Waste lead is stored in the diversion box.

Code: 241-UR-152 **Classification:** Accepted

Names: 241-UR-152; 241-UR-152 Diversion Box; Line 5053 **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1980

Description: This unit is an underground reinforced concrete structure. All nozzles are 4 inch (10 centimeters) REDOX style.

Location: This unit is located east of Tank 241-U-101, inside the 241-U Tank Farm.

Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.

Related Sites/ Structures: The 241-UR-152 Diversion Box is associated with the 241-UR-151 Diversion Box and the 241-U-101, 241-U-102, and 241-U-103 cascade series. The drain line to 241-U-102 is line 5053.

Waste Type: Equipment

Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Equipment

Waste Description: Waste lead is stored in the diversion box.

Waste Type: Chemicals

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations.

Code: 241-UR-153 **Classification:** Accepted
Names: 241-UR-153; 241-UR-153 Diversion Box; Line 5253 **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1946
Status: Inactive **End Date:** 1/1/1983
Description: This unit is a reinforced concrete structure.
Location: This unit is located east of the 241-U-104 Tank, inside the 241-U Tank Farm.
Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.
Related Sites/Structures: The 241-UR-153 Diversion Box is associated with the 241-U-153 and 241-UR-152 Diversion Boxes and the 241-U-104, 241-U-105, 241-U-106 Cascade Series. The drain line to tank 241-U-105 is line 5253.
Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation.
Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.
Waste Type: Equipment
Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-UR-154 **Classification:** Accepted
Names: 241-UR-154; 241-UR-154 Diversion Box; Line 5453 **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1949
Status: Inactive **End Date:** 1/1/1980
Description: This unit is a reinforced concrete structure.
Location: The 241-UR-154 Diversion Box is located east of the 241-U-107 Tank, inside the 241-U Tank Farm.
Process Description: This unit was used for the transfer of waste solutions from processing and decontamination operations.
Related Sites/Structures: This unit is associated with the 241-U-153, 241-U-151, 241-U-152, 241-UR-153 Diversion Boxes and the 241-U-107, 241-U-108, 241-U-109 Cascade Series. The drain line to tank 241-U-107 is line 5453.
Waste Type: Equipment
Waste Description: Equipment associated with the diversion box includes transfer piping and nozzles.

Waste Type: Equipment
Waste Description: It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Waste Type: Process Effluent
Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations.

Code: 244-UR VAULT **Classification:** Accepted

Names: 244-UR VAULT; 244-UR Vault (Tanks -001 Through -004); IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 5764 and 5765 **Reclassification:** None

Type: Receiving Vault **Start Date:** 1/1/1952

Status: Inactive **End Date:** 1/1/1975

Description: The 241-U Tank Farm is posted as a Contamination Area. The vault was covered with pumped concrete in 1992. The vault is surrounded with post and chain and marked with IMUST signs. The 244-UR Vault is an underground concrete structure divided vertically into four sections (process vaults). Each section houses a tank and a sump. The sections are divided horizontally to provide pump pits above the tanks. The pump pits contain pumps and piping that were used during liquid transfers. The walls, floors, horizontal divisions, and roofs (ground level) are constructed of reinforced concrete. The sumps are located in the sections occupied by Tanks 244-UR-001, 244-UR-002, 244-UR-003 and 244-UR-004. Tank 244-UR-001 is a slurry accumulator tank. Tanks 244-UR-002 and 244-UR-003 are identical blend tanks. Tank 244-UR-004 is a process tank. There are also above ground service facilities that include four instrument shelters, an inlet filter enclosure, and six risers used to measure liquid levels in tanks and sumps. Conditioned inlet air to the vault was supplied through an above grade supply system located just north of the vault. Exhaust air from the vault was passed through an underground filter chamber, then to an above grade exhaust fan and discharge stack. The 244-UR Vault was used until 1956 and was taken out of regular service in 1957. Apparently, the vault tanks were not used after this time and the entire vault was interim stabilized in 1985. Presumably, some wastes (sludges and liquids) were left in the tanks of the 244-UR Vault at the close of active vault use in the 1950's as records from the 1970's and early 1980's report varying amounts of wastes in the tanks and tank pits/sumps. Intrusion of water (precipitation) from the ground surface above the vault contributed to the varying amounts of liquid found in the tank pits during this period. SD-WM-TI-356 lists liquid level readings (and the reasons for increases and decreases in the liquid level readings) in the tanks and sumps over the period from 1974 through 1985. The records associated with the tank isolation project (B-231) of the mid 1980's provide the most reliable current estimates of tank and tank pit waste volumes. These estimates are provided for each of the tanks (see subsites section). Project B-231 isolated the 244-UR Vault as a single system. Four above grade instrument and electrical enclosures were removed. The underground conduit trenches existing between each enclosure and the companion vault compartment were sealed by casting a concrete slab over the enclosure footing. Grade level raw water nozzles that connected to the vault internal piping were cut and capped. Grade level steam distribution piping and control valving were removed. Process steam lines that connected to the vault internal piping were cut and capped. Encased process pipelines interconnect the 244-UR Vault with the 241-UR-151 Diversion Box. Closure of these lines was not required as both diversion boxes were already isolated. Process air lines were cut and blind flanges were installed onto both sides of each branch line isolated. The evaporative cooling unit was abandoned in place and the ducting cut, then sealed with a concrete plug. The above grade ventilation fans, above grade ducting, and discharge stack were previously removed. The fan inlet plenum was built into the fan base structure and was plugged by filling the plenum with sand and casting a fiberglass weather cover over the fan inlet ducts. The grade level vault cover

blocks were sealed by a fiberglass weather cover. WHC-EP-0560 states that liquid level readings for 1979 indicate the 244-UR-001 and 244-UR-003 had been pumped down to "minimum level", whereas 244-UR-002 was still listed as "active" ("Auxiliary Tanks, Sumps, and Vaults Solid and Liquid Volumes", J. E. Mirabella, 1978). Tank 244-UR-004 was also pumped to a minimum level.

Location: This site is located at the north end of the 241-U Tank Farm.

Process Description: The 244-UR Vault was constructed in 1951 for use in conjunction with uranium recovery processing conducted in U Plant (221-U). The function of the vault included reception of uranium-bearing waste slurries from Tanks 241-U-101, 241-U-102, 241-U-103, and 241-U-107 in the 241-U Tank Farm, which at that time contained neutralized metal waste generated by the original bismuth phosphate process. The vault was used for subsequent blending, pH adjustment (acidification) and conditioning of this waste as feed material for the tributyl phosphate uranium extraction process in the U Plant Canyon.

Related Sites/Structures: The unit is associated with 241-U Tank Farm and transfer lines. The drain lines to the sump are lines 5764 and 5765.

Waste Type: Process Effluent

Waste Description: This unit received waste from 241-U Tank Farm. The volumes in Tanks 244-UR-001, 244-UR-002, 244-UR-003 and 244-UR-004 are unknown and not monitored. Tank volume estimates are provided in WHC-SD-EN-ES-040, Rev. 0 (see subsites information).

Waste Type: Equipment

Waste Description: The vault equipment, tanks, and concrete surfaces are contaminated.

Waste Type: Asbestos (non-friable)

Waste Description: The vault contains a pipe that has asbestos insulation and is encased in concrete. This pipe is also radioactively contaminated.

This Site has the Following SubSites:

Code: 244-UR VAULT:1

Names: 244-UR VAULT:1; 244-UR-001

Code: 244-UR VAULT:2

Names: 244-UR VAULT:2; 244-UR-002

Code: 244-UR VAULT:3

Names: 244-UR VAULT:3; 244-UR-003

Code: 244-UR VAULT:4

Names: 244-UR VAULT:4; 244-UR-004

Code: 244-UR VAULT:1

Classification: Accepted

Names: 244-UR VAULT:1; 244-UR-001

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: The site is a vertical 0.635-centimeter (0.25-inch) carbon steel plate tank having a capacity of 189,250 liters (50,000 gallons). The tank dimensions are 6.1 meters by 6.1 meters (20 feet by 20 feet). The tank contains 7,010 liters (1,872 gallons) of sludge and 1476.2 liters (390 gallons) of supernatant. The tank was constructed in 1951 and was in operation from 1952 to 1956. The tank was taken out of service in 1957. Currently, the tank is stabilized and isolated. Tank 244-

UR-001 was used as a slurry accumulator tank (comparable to 244-BXR Vault Tank, 244-BX-001 and 244-TXR Vault Tank, 244-TX-001). As such, it was used as the collection point for waste slurries sluiced-mined from the U Tank Farm. The accumulated wastes were pumped from Tank 244-UR-001 to other tanks in the vault for further conditioning (see subsites 244-UR-002 and 244-UR-003). Limited analytical data on the contents of Tank 244-UR-001 are available from a 1977 Atlantic Richfield Hanford Company (ARHCO) employee memorandum, "Isolation Criteria for 'Auxiliary' Tanks", C. M. Walker (Memorandum not in Waste Information Data System [WIDS] files). The values listed below have been taken from WHC-SD-EN-ES-040, Rev. 0. - pH 7.5, radiation level 25 millirads/hour, specific gravity 1.0 - cesium-137 476 microcuries/liter (1,800 microcuries/gallon) - uranium 0.528 milligrams/liter (2 milligrams/gallon) - total beta 845 microcuries/liter (3,200 microcuries/gallon) - total alpha 0.032 microcuries/liter (0.12 microcuries/gallon). Limited information on the contents of the 244-UR-001 Sump were reported in the same memorandum listed above. The values listed below have been taken from WHC-SD-EN-ES-040, Rev. 0. - pH 8.6, radiation level 30 millirads/hour - cesium-137 673 microcuries/liter (1,700 microcuries/gallon) - total beta 845 microcuries/liter (3,200 microcuries/gallon) - total alpha 0.0145 microcuries/liter (0.055 microcuries/gallon) WHC-SD-EN-ES-040, Rev.0 has listed the following safety issues: - Hydrogen Buildup: Low risk since the total waste volume in the tank and sump is limited to about 18,925 liters (5,000 gallons). - Ferrocyanide: No risk since little or no ferrocyanides are present and the tank contains mostly water. - Organic Salts: Tributyl phosphate containing wastes were present in this tank, so some amount of organic salts is probably present. However, it is expected that this represents a low risk as the wastes are dilute. - Flammability: Low risk as little or no flammable material and no ignition sources are present. - Vapor Emission: Low risk because present waste content is not expected to contain significant amounts of volatile material. - Tank Integrity: No evidence of leaks emerged in the 1970's. Present waste content is not strongly corrosive, yet design life of the tank has been exceeded. Consequently, there is low to moderate risk of tank leakage. - Criticality Safety: Low risk (traces of plutonium only). - Radiological Hazard: High risk because UPR-200-W-24 resulted in contamination of soils surrounding the vault. Background readings in the vault are the 1 to 50 millirem range. - Heat Generation: Low risk (No Data). SD-WM-TI-356 lists liquid level readings and cumulative change history for the tank and sump. The last reading for the tank, on July 15, 1985, was 20.3 centimeters (8.00 inches). The last reading in the sump, on June 27, 1985, was 55.9 centimeters (22.00 inches).

The SubSite is Part Of:

Code: 244-UR VAULT

Names: 244-UR VAULT; 244-UR Vault (Tanks -001 Through -004); IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 5764 and 5765

Code: 244-UR VAULT:2

Classification: Accepted

Names: 244-UR VAULT:2; 244-UR-002

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: The site is a vertical type 347, stainless steel, 0.635-centimeter (0.25-inch) thick tank having a capacity of 56,775 liters (15,000 gallons). The tank is 3.66 meters by 4.27 meters (12 feet by 14 feet). The tank contains 8720.6 liters (2,304 gallons) of sludge and 810 or 2157.5 liters (214 or 570 gallons) (conflicting data) of supernatant. The tank was constructed in 1951 and was in operation from 1952 to 1976 (?). The tank is stabilized and isolated. Tanks 244-UR-002 and 244-UR-003, essentially identical tanks, were used for blending, temperature adjustment, acidification, and venting of wastes received from 244-UR-001 (comparable to 244-BXR Vault Tank, 244-BX-002 and 244-TXR Vault Tank, 244-TX-002). Nitric acid used in this conditioning was received from Tank 244-UR-004. A sample of liquid was obtained from cell

2 of the 244-UR Vault on November 5, 1974 (Sample # T-9505). (Source data not available in the Waste Information Data System [WIDS] files.) The results listed below have been taken from WHC-SD-EN-ES-040, Rev. 0 and WHC-EP-0560. - visual appearance, yellow with no solids - pH 9.1, radiation level 1 millirad/hour, specific gravity 1.01 - cesium-137 177 microcuries/liter (670 microcuries/gallon) - aluminum <.0013 molar (> < 35 milligrams/liter) - sodium .0732 molar (1,690 milligrams/liter) - nitrite .000645 molar (30 milligrams/liter) - nitrate .0306 molar (1,900 milligrams/liter) - plutonium < 1.40 micrograms/liter (<5.34 micrograms/gallon) - phosphate >>.00356 molar (340 milligrams/liter) - iron .0000414 molar (>>1 milligram/liter) - carbonate .0325 molar (2,000 milligrams/liter) - strontium-89,90 5.68 microcuries/liter (21.5 microcuries/gallon) - water 99.95% Although the memorandum indicates that the sample was from Tank 244-UR-002, it is suspected that the sample is actually from the pit or sump since the June 7, 1977 Atlantic Richfield Company (ARCHO) internal memorandum, "Isolation Criteria for 'Auxiliary' Tanks", C. M. Walker, 1977, gives limited analytical results for Tank 244-UR-002 and sump contents as follows. - total beta 845 microcuries/liter (3,200 microcuries/gallon) - total alpha 0.032 microcuries/liter (0.12 microcuries/gallon). Tank - pH 0.7, radiation level 50 millirads/hour - specific gravity 1.03 - cesium-137 0.87 microcuries/liter (3.3 microcuries/gallon) - total beta 1321 microcuries/liter (5,000 microcuries/gallon) - total alpha 0.37 microcuries/liter (1.4 microcuries/gallon) Sump - pH 9.0, radiation level 10 millirads/hour - cesium-137 47.56 microcuries/liter (180 microcuries/gallon) - total beta 66.05 microcuries/liter (250 microcuries/gallon) - total alpha 0.1 microcuries/liter (0.38 microcuries/gallon) WHC-SD-EN-ES-040, Rev.0 has listed the following safety issues. - Hydrogen Buildup: Low risk since the total waste volume in the tank and sump is limited to about 11,355 liters (3,000 gallons) of dilute liquid waste. Any hydrogen generated should readily diffuse out of the tank and vault. - Ferrocyanide: No risk since little or no ferrocyanides are present and the tank contains mostly water. - Organic Salts: Tributyl phosphate containing wastes were present in this tank, so some amount of organic salts is probably present. However, it is expected that this represents a low risk as the wastes are dilute. - Flammability: Low risk as little or no flammable material and no ignition sources are present. - Vapor Emission: Low risk because present waste content is not expected to contain significant amounts of volatile material. - Tank Integrity: No evidence of leaks emerged in the 1970's. Present waste content is not moderately corrosive, and the design life of the tank has been exceeded. Consequently, there is moderate to high risk of tank leakage. - Criticality Safety: Low risk (traces of plutonium only). - Radiological Hazard: High risk because UPR-200-W-24 resulted in contamination of soils surrounding the vault. Background readings in the vault are the 1 - 50 millirem range. - Heat Generation: Low risk (No Data).

SD-WM-TI-356 lists liquid level readings and cumulative change history for the tank and sump. The last reading for the tank, on July 12, 1985, was 71.8 centimeters (28.25 inches). The last reading in the sump, on April 23, 1985, was 55.9 centimeters (15.25 inches).

The SubSite is Part Of:

Code: 244-UR VAULT

Names: 244-UR VAULT; 244-UR Vault (Tanks -001 Through -004); IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 5764 and 5765

Code: 244-UR VAULT:3

Classification: Accepted

Names: 244-UR VAULT:3; 244-UR-003

Reclassification: None

Type: Receiving Vault

Start Date:

Status: Inactive

End Date:

Description: The site is a vertical type 347, stainless steel, 0.635-centimeter (0.25-inch) thick tank having a capacity of 56,775 liters (15,000 gallons). The tank is 3.66 meters by 4.27 meters (12 feet by

14 feet). The tank contains 5934.9 liters (1,568 gallons) of sludge and 0 liters of supernatant. The tank was constructed in 1951 and was in operation from 1952 to 1976 (?). The tank is stabilized and isolated. Tank 244-UR-002 and 244-UR-003, essentially identical tanks, were used for blending, temperature adjustment, acidification, and venting of wastes received from 244-UR-001 (comparable to 244-BXR Vault Tank, 244-BX-002 and 244-TXR Vault Tank, 244-TX-002). Nitric acid used in this conditioning was received from Tank 244-UR-004. A sample of liquid was obtained from cell 3 of the 244-UR Vault on November 5, 1974 (Sample # T-9505). (Source data not available in the Waste Information Data System [WIDS] files.) The results listed below have been taken from WHC-SD-EN-ES-040, Rev. 0 and WHC-EP-0560. - visual appearance, yellow with no solids - pH 9.1, radiation level 1 millirad/hour, specific gravity 1.01 - cesium-137 177 microcuries/liter (670 microcuries/gallon) - aluminum <.0013 molar (> < 35 milligrams/liter) - sodium .0732 molar (1,690 milligrams/liter) - nitrite .000645 molar (30 milligrams/liter) - nitrate .0306 molar (1,900 milligrams/liter) - plutonium < 1.40 micrograms/liter (<5.34 micrograms/gallon) - phosphate ><.00356 molar (340 milligrams/liter) - iron .0000414 molar (><1 milligram/liter) - carbonate .0325 molar (2,000 milligrams/liter) - strontium-89,90 5.68 microcuries/liter (21.5 microcuries/gallon) - water 99.95% Although the memorandum indicates that the sample was from Tank 244-UR-003, it is suspected that the sample is actually in the pit or sump since the June 7, 1977 Atlantic Richfield Company (ARCHO) internal memorandum, "Isolation Criteria for 'Auxiliary' Tanks", C. M. Walker, 1977, gives limited analytical results for Tank 244-UR-003 and sump contents as follows. - total beta 845 microcuries/liter (3,200 microcuries/gallon) - total alpha 0.032 microcuries/liter (0.12 microcuries/gallon). Tank - pH 0.7, radiation level 50 millirads/hour - specific gravity 1.03 - cesium-137 0.87 microcuries/liter (3.3 microcuries/gallon) - total beta 1321 microcuries/liter (5,000 microcuries/gallon) - total alpha 0.37 microcuries/liter (1.4 microcuries/gallon) Sump - pH 9.0, radiation level 10 millirads/hour - cesium-137 47.56 microcuries/liter (180 microcuries/gallon) - total beta 66.05 microcuries/liter (250 microcuries/gallon) - total alpha 0.1 microcuries/liter (0.38 microcuries/gallon) WHC-SD-EN-ES-040, Rev.0 has listed the following safety issues. - Hydrogen Buildup: Low risk since the total waste volume in the tank and sump is limited to about 11,355 liters (3,000 gallons) of dilute liquid waste. Any hydrogen generated should readily diffuse out of the tank and vault. - Ferrocyanide: No risk since little or no ferrocyanides are present and the tank contains mostly water. - Organic Salts: Tributyl phosphate containing wastes were present in this tank, so some amount of organic salts is probably present. However, it is expected that this represents a low risk as the wastes are dilute. - Flammability: Low risk as little or no flammable material and no ignition sources are present. - Vapor Emission: Low risk because present waste content is not expected to contain significant amounts of volatile material. - Tank Integrity: No evidence of leaks emerged in the 1970's. Present waste content is not moderately corrosive, and the design life of the tank has been exceeded. Consequently, there is moderate to high risk of tank leakage. - Criticality Safety: Low risk (traces of plutonium only). - Radiological Hazard: High risk because UPR-200-W-24 resulted in contamination of soils surrounding the vault. Background readings in the vault are the 1 - 50 millirem range. - Heat Generation: Low risk (No Data).

SD-WM-TI-356 lists liquid level readings and cumulative change history for the tank and sump. The last reading for the tank, on July 15, 1985, was 41.9 centimeters (16.5 inches). The last reading in the sump, on July 15, 1985, was 66.7 centimeters (26.25 inches).

The SubSite is Part Of:

Code: 244-UR VAULT

Names: 244-UR VAULT; 244-UR Vault (Tanks -001 Through -004); IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 5764 and 5765

Code: 244-UR VAULT:4

Classification: Accepted

Names: 244-UR VAULT:4; 244-UR-004**Reclassification:** None**Type:** Receiving Vault**Start Date:****Status:** Inactive**End Date:**

Description: The 244-UR-004 is a stainless steel process tank measuring 3 meters (10 feet) in diameter and 4.2 meters (14 feet) tall. The tank has a 31,150 liter (8,230 gallon) capacity. The UR-004 was used to store nitric acid and has been reported to be empty. This tank fed nitric acid to the UR-002 and UR-003 tanks, during the Uranium Recovery Process operation in the 1950's. Because it was an acid feed tank, it is not believed to be radiologically contaminated.

The SubSite is Part Of:**Code:** 244-UR VAULT**Names:** 244-UR VAULT; 244-UR Vault (Tanks -001 Through -004); IMUST; Inactive Miscellaneous Underground Storage Tank; Lines 5764 and 5765

Code: 200-W-95**Classification:** Accepted**Names:** 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence**Reclassification:** None**Type:** Contamination Migration**Start Date:****Status:** Inactive**End Date:**

Description: The site is the soil inside and adjacent to the chain link fence that surrounds the 241-U Tank Farm. Various radiological postings and warning signs are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devices for the underground structures are visible on the surface. The individual unplanned releases associated with the 241-U Tank Farm are not separately marked or posted. Occasionally, radioactive contamination is found adjacent to the outside of the tank farm fence, resulting in a contamination zone extension around the tank farm perimeter. These areas will also be considered tank farm soil. A small area near the west access gate, outside the fence, was excavated to attempt to remove contaminated soil. This area was marked with Contamination Area signs but was covered with clean dirt and downposted to an Underground Radioactive Material area in December 2003.

Location: The site is located at the intersection of 16th Street and Camden Ave., in 200 West Area.

Release Description: The exact extent (horizontal and vertical) of the soil contaminated by unplanned releases that occurred within this farm over the years are not known. Some of the single shell tanks have leaked to the soil below the tank farm. Other releases spread contamination to the surface soil surrounding the tanks.

Related Sites/ Structures: Unplanned Releases UPR-200-W-128, UPR-200-W-132, UPR-200-W-154, UPR-200-W-155, UPR-200-W-156, UPR-200-W-157, UPR-200-W-24 and 200-W-91 are associated with the 241-U Tank Farm. These WIDS sitecodes have been consolidated into 200-W-95.

Waste Type: Process Effluent

Waste Description: Liquid releases occurred from underground leaks in tanks and transfer lines. Airborne contamination spreads occurred from activities conducted in valve pits and diversion boxes. Both types of releases contributed to the contamination in the soil.

The Following Sites Were Consolidated With This Site:**Code:** 200-W-91**Names:** 200-W-91; Underground Radioactive Material Area Adjacent to the North Side of 241-U Tank Farm

Code: UPR-200-W-24
Names: UPR-200-W-24; Release from the 244-UR Vault; UN-200-W-24

Code: UPR-200-W-128
Names: UPR-200-W-128; Contamination Release Inside 241-U Tank Farm

Code: UPR-200-W-132
Names: UPR-200-W-132; 241-UR-151 Diversion Box Release; UN-200-W-132

Code: UPR-200-W-154
Names: UPR-200-W-154; 241-U-101 Leak

Code: UPR-200-W-155
Names: UPR-200-W-155; 241-U-104 Leak

Code: UPR-200-W-156
Names: UPR-200-W-156; 241-U-110 Leak

Code: UPR-200-W-157
Names: UPR-200-W-157; 241-U-112 Leak

Not Applicable

Code: 100-B-4 **Classification:** Not Accepted

Names: 100-B-4; Building Foundation; Undocumented Solid Waste Site **Reclassification:** None

Type: Spoils Pile/Berm **Start Date:**

Status: Inactive **End Date:**

Description: The site is a rectangular area 8.5 meters (28 feet) east/west by 13.1 meters (43 feet) north/south and encircled by large stones neatly stacked 0.3 meters (1 foot) high. Inside the area and on the north end is a 4 meter (13 foot) by 4.0 meter (13 foot) area encircled by 0.3 meter (1 foot) soil berm. Two 0.3 meter (1 foot) mounds of soil are in the south portion of the area. The surrounding area appears to have been a plowed field that was cleared of large stones. A long line of similar rocks runs parallel to the perimeter road, between the encircled area and the road. The site is distinguishable from the surrounding area only by the arrangement of large stones and soil. During a site visit on 9/13/94, two metal objects were present nearby, but didn't appear to be necessarily associated with this site. One of the objects looked like an empty, rusty paint can.

Location: The site is in the 100B area , 760 meters (2500 feet) northeast of the 105-B reactor building and 170 meters (550 feet) northwest of 1607-B1. It is due west of the perimeter road.

Code: 100-B-7 **Classification:** Not Accepted

Names: 100-B-7; 100-B Clean Water Pipelines; 100-B Service Water Pipelines **Reclassification:** None

Type: Product Piping **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1968

Description: The site encompasses the clean water upstream pipelines for the 100-B Area, including underground pipelines used to transport raw, fire, export, and sanitary water from the river pumphouse, to the water treatment facilities and to 100-B Area facilities and fire hydrants. Excluded lines are those within buildings, process and septic sewer pipes, pipes that carried water treated with sodium dichromate, and all lines that are downstream from the reactor building, i.e., those lines that carry cooling water from the reactor to the retention basin, trench, and/or the river are excluded.

Location: The location is described as underground lines running from the 181-B Pumphouse to the 183-B Water Treatment Facilities, and from there to other 100-B Area buildings, fire hydrants, and south to the 100-C Area, stopping at a line about half-way between the B and C areas, at about northing 144370 N.

Process Description: Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, and pumped to the reactor core at a rate of 1.93E+05 liters (51,000 gallons) to 2.69E+05 liters (71,000 gallons) per minute.

Related Sites/Structures: Related structures include the 181-B River Pumphouse, the 182-B Reservoir, 108-B Building, 183-B Basins and Clearwells, 185-B Building, 190-B Building, and 105-B Reactor. Associated pipeline sites include 100-B-14 (Septic and Process Sewer Pipelines), 100-B-8 (Effluent Pipelines), and 100-C-5 (100-C Area Water Treatment Facility Pipelines, which connect to these in the 100-B Area).

Waste Type: Water

Waste: Only uncontaminated piping remains.

Description:

Code: 100-B-17 **Classification:** Accepted

Names: 100-B-17; Transite on Columbia River Shoreline at 100B **Reclassification:** Rejected (8/19/2010)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is an old dumping area. The site is below the high water mark and is visible only at very low river flow.

Location: The site is located just west of 181-B River Pumphouse on the Columbia River shoreline. At approximate coordinates, E 564499.8, N 145319.2 and E 564509.9 and N 145332.3.

Waste Type: Demolition and Inert Waste

Waste Description: The waste is a mixture of material ranging from corrugated transite, fire brick, milk bottles, concrete form fittings, small rebar, pipe fittings, chunks of vitrified clay, nuts and bolts. The corrugated transite consists of 15-20 large chunks that vary from 0.61 to 1.83 m (2 to 6 ft), 0.15 to 0.61 m (0.5 to 2 ft) wide, spread over most of a 220 sq m (2400 sq ft), in a single layer orientation. The transite is covered with green slime and the metal pieces are extremely rusted. Likely, the material has been in the river for a long time. The corrugated transite is not breaking into smaller chunks.

Code: 100-B-29 **Classification:** Not Accepted

Names: 100-B-29; Pipe Located Southeast of the 183-B Clearwells **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: The site consisted of an approximately 0.15 m (6 in) diameter carbon steel pipe, about 3 m (10 ft) long, with a partially intact mastic wrap (P6120025). The pipe was oriented in a northwest to southeast direction. The northwesterly end was jagged metal suggesting that it may have been severed during an excavation. T

Location: The site is located in the 100-B/C Area southeast of the 183-B Clearwells and southeast of the road intersection of Bodie and Bow Streets. The approximate Washington State Plane coordinates are E 564943, N 144341.

Code: 100-B-30 **Classification:** Not Accepted

Names: 100-B-30; Pipe Located South of the 100-B/C Perimeter Road **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of an approximately 0.08 m (3 in) carbon steel pipe, over 4 m (13 ft) long, with a coupling joint on one end. The pipe appears to be lined with concrete. The other end was severed, possibly with the use of a cutting torch. The pipe is oriented in a northwest to southeast direction and is not part of an intact system. The southeasterly end of the pipe is partially buried below grade and the presence of vegetation at that end suggests that the pipe has been at this location for an extended period of time. There is no evidence of staining or any additional pipe or piping systems in the area, and is located in an area of other scattered surface

debris outside the 100-B/C perimeter fence. The pipe is believed to be surficial debris only.

Location: The site is located in 100-B/C Area, south of the 100-B/C perimeter road, and north of the railroad tracks. At approximate Washington State Plane Coordinates E 564732, N 143699, The inner pipe material was sampled on February 18, 2009 (Sample No. J18HX2) and analyzed for asbestos using Polarized Light Microscopy. The results showed that the material did not contain asbestos minerals.

Waste Type: Equipment

Waste Description: The waste is a single segment of pipe.

Code: 118-B-7	Classification: Accepted
Names: 118-B-7; 111-B Solid Waste Burial Site	Reclassification: Rejected (12/9/2004)
Type: Burial Ground	Start Date: 1/1/1951
Status: Inactive	End Date: 1/1/1968

Description: The unit appears as the southern portion of a cobble-covered field. The central portion of the field is covered with natural vegetation and there is a permanent concrete marker in the southern section.

Location: This unit is located adjacent to and just south of the 111-B Decontamination Station.

Process Description: This site received decontamination materials and assorted equipment from the 111-B Decontamination Facility and workshop from 1951 to 1968.

Waste Type: Equipment

Waste Description: This unit received small amounts of waste from the 111-B Facility, which was originally used as a charge makeup and reactor fuel inspection station. After one year, the 111-B Facility was used as a decontamination facility for equipment and a workshop for low-level contaminated equipment. This unit also received decontamination materials and assorted equipment from that building. Small amounts of reactor hardware may have also been placed in this unit. Potential contaminants include: Co-60, Ni-63, RCRA metals

Code: 126-B-1	Classification: Accepted
Names: 126-B-1; 184-B Power House Ash Pit; 188-B Ash Disposal Area	Reclassification: Rejected (6/25/1998)
Type: Coal Ash Pit	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1969

Description: The 126-B-1 site is a large vegetation covered depression and surrounding ash piles. The depression is approximately 60 meters (200 feet) long, 60 meters (200 feet) wide, and 3 meters (10 feet) deep. An earthen berm divides the site into two sections. The pit is bounded on the north, east, and west sides by three large ash piles that extend 9 to 10 meters (30 to 33 feet) high. On the west side of the pit is a large wooden ramp that is in a state of disrepair. A large pipe enters the depression in the southwest corner. Including the surrounding ash piles, the overall site dimensions are approximately 200 meters by 200 meters (650 feet by 650 feet).

Location: The 126-B-1 Ash Pit is located north of the 184-B Powerhouse.

Process Description: Coal ash from the 184-B Powerhouse was mixed with raw river water and sluiced in slurry form to the ash pit via a 20 centimeter (8 inch) ashcolite pipe.

Related Sites/ Structures: The ash pit is related to the 184-B Powerhouse.

Waste Type: Ash

Waste Description: The site received coal ash from the 184-B Powerhouse. Coal ash from analogous sites has been analyzed using the EP Toxicity Test in accordance with WAC 173-303, and no hazardous materials were found.

Code: 126-B-4

Classification: Accepted

Names: 126-B-4; 126-B-4 Brine Pit. 184-B Salt Dissolving Pit and Brine Pump House; B Area Brine and Salt Dilution Pits

Reclassification: Rejected (9/9/1997)

Type: Sump

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1969

Description: The salt dissolving pits and brine pump pit were part of a single below-grade concrete structure that provided brine for the 184-D Powerhouse. The structure has been demolished and buried in situ. No evidence of the site remains at the surface. Before the structure was demolished, it was described as being partially backfilled with rubble with approximately 1900 liters (500 gallons) of water in the brine pump pit. The two salt dissolving pits each had inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.8 meters (9.25 feet) tall. They had a design high water line 2.4 meters (7.75 feet) from the pit bottom. An overflow slot connecting the two dissolving pits was located 0.3 meters (1 foot) above the high water line. The bottom of each pit was filled with a 12.7 centimeter (5 inch layer) of 1.3 to 2.6 centimeter (1/2 to 1 inch) gravel topped by a 17.8 centimeter (7 inch) layer of 0.3 to 0.6 centimeter (1/8 to 1/4 inch) gravel. The dissolving pits each had a 2.4 meter (8 foot) by 0.9 meter (3 feet) opening at the top for receiving salt. Each pit had a capacity of 23,600 kilograms (52,000 pounds) of salt. The brine pump pit is located adjacent to the two salt dissolving pits. The pit was 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.1 meters (7 feet) deep. It held two pumps and associated piping (all brass) for the brine system. The floor of the pump pit sloped toward a 46 by 46 by 46 centimeter (18 by 18 by 18 inch) sump in a corner.

Location: The site is located north of 184-B and just south of the railroad tracks.

Process Description: The brine was used to regenerate the zeolite ion exchange demineralizers that were part of the powerhouse water treatment system.

Related Sites/ Structures: The site is associated with the 184-B Power House.

Waste Type: Demolition and Inert Waste

Waste Description: The structure was demolished and buried in situ.

Description:

Code: 128-B-1

Classification: Not Accepted

Names: 128-B-1; 100 B/C Burning Pit; 100-B Burning Pit

Reclassification: None

Type: Burn Pit

Start Date: 1/1/1943

Status: Inactive

End Date: 1/1/1968

Description: The site has been described as a burn pit. During a field investigation on October 17, 1995, it was noted that the area is covered with cheatgrass and appears undisturbed with no evidence of burning. An elevated area to the south is covered with rabbitbrush, boulders, and appears to be

disturbed. The elevated area also shows no evidence of burning.

Location: The 128-B-1 burn pit is identified in PNL-6456 as a 30 meters (100 feet) by 30 meters (100 feet) pit at coordinates WCS83S E565942.7, N145244.7 (N71500 W78500). This places it in a low area southeast of 116-C-1 and west of the perimeter road.

Code: 132-B-2 **Classification:** Accepted

Names: 132-B-2; 132-B-2 Stack; 116-B Reactor Exhaust Stack **Reclassification:** None

Type: Stack **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1968

Description: The unit is part of the 105-B Reactor Gas and Exhaust Air System. The unit is still standing and constructed of reinforced concrete with a base diameter of approximately 4.9 meters (16 feet).

Location: The unit is located on the south side of 105-B.

Related Sites/Structures: Following completion of the confinement project in 1960, the air was diverted via an above-ground aluminum duct and an underground, reinforced concrete duct to the 117-B Filter Building. After flowing through the filters, the air went through a below-grade concrete duct and an above-grade aluminum duct into the exhaust stack.

Waste Type: Demolition and Inert Waste

Waste Description: Until the 117 Filter Building was built in 1960, air moving from the least contaminated zones through increasingly contaminated zones was discharged to the unit unfiltered. The unit received low-level contamination from the reactor.

Code: 1607-B3 **Classification:** Accepted

Names: 1607-B3; 1607-B3 Sanitary Sewer System; 1607-B3 Septic Tank System; 124-B-3 **Reclassification:** Closed Out (5/31/2001)

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1974

Description: The site is a closed out septic system which includes a septic tank, tile field, and associated piping. The site is no longer apparent and appears as a cobble-covered field with natural vegetation growing on its surface. The 1607-B3 Septic Tank was constructed of reinforced concrete. The tank was 2.9 meters (9.5 feet) long, 1.4 meters (4.5 feet) wide and 3.5 meters (11.42 feet) deep (inner dimensions). The tank had a design capacity of 6,360 liters (1,680 gallons) based on a user capacity of 48 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The top of the tank was at the ground surface and the tank was accessible through three 0.9-meter (3-foot) manholes.

Location: The site is located approximately 60 meters (200 feet) north of the 184-B Building.

Related Sites/Structures: The site is associated with the 184-B Powerhouse.

Waste Type: Sanitary Sewage

Waste Description: This unit received an unknown amount of sanitary sewage from 184-B Powerhouse.

Code: 1607-B4 **Classification:** Accepted

Names: 1607-B4; 1607-B4 Sanitary Sewer System; 1607-B4 Septic Tank; 1607-B4 Septic Tank System; 124-B-6 **Reclassification:** Closed Out (2/23/2001)

Type: Septic Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/2000

Description: The site is a closed out septic system associated with the 151-B Substation. A sign stating Abandoned Septic Tank per WAC (246-272-1850) DynCorp Environmental is posted at the site. There are four yellow posts surrounding the structure. Within the posts are the old wooden cover, a pile of sand, and cobble. The septic tank is concrete box that had a wooden lid covered with asphalt roofing material. The reinforced concrete septic tank is 1.8 meters (6 feet) long, 0.9 meters (3 feet) wide, and 2.5 meters (8 feet, 4 inches) deep (inner dimensions). The tank had a design capacity of 1325 liters (350 gallons) based on a user capacity of 10 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The tank walls are 20 centimeters (8 inches) thick with a 15 centimeter (6 inch) floor. The tile field was constructed of 10 centimeter (4 inch) pipes with a minimum length of 2.4 meter (8 feet) per capita. The laterals are open-jointed and spaced 2.4 meters (8 feet) apart.

Location: The tank is located near the northwest corner of the 151-B Substation. The tile field is located west of the tank.

Process Description: This site received sanitary sewage from the 151-B Substation.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from 151-B Electrical Distribution Facility. The flow rate to the unit was estimated at less than 132 Liters (35 gallons) per day.

Closure Info: Closure of the septic tank was completed in 2000. The tank contents were sampled and analyzed for radiological contaminants. The sample results were lower than detection limits. The tank contents were pumped out and the tank was filled with clean fill material. A letter was sent to notify the Washington State Department of Health of the abandonment.

Code: 1607-B6 **Classification:** Accepted

Names: 1607-B6; 1607-B6 Septic Tank System; 124-B-5; 1607-B5; 1607-B5 Sanitary Sewer System; 1607-B5 Septic Tank System **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1944

Status: Active **End Date:**

Description: The site currently appears as a small concrete box with a wooden lid. It is posted with a "Confined Space" warning sign. There is a yellow steel post at each of its four corners. The reinforced concrete septic tank is 8 ft 4 in (2.5 m) deep with a 25-person capacity (35 gal [130 L] per capita) and an average detention period of 24 hr. Its walls are 8 in (20 cm) thick and its floor is 6 in (15 cm) thick. The tile drain field is 4 in (10 cm) vitrified pipe, concrete pipe or drain tile with a minimum of 8 linear ft (2.4 m) per capita. The laterals are open-jointed and spaced 8 ft (2.4 m) apart. This system is active. This system includes the feed pipeline from the 183-B Filter House, the septic tank, and the drain field.

Location: This septic system is south of the 182-B Reservoir and Pumphouse.

Waste Type: Sanitary Sewage

Waste Description: This unit receives 35 gal/day (130 L/day) of sanitary sewage from the 182-B Pump Station and cooling water and leakage from pumps located in the 182-B facility. It also received sewage from 183-B Headhouse, which was decommissioned in 1987.

Code: 100-C-2 **Classification:** Not Accepted
Names: 100-C-2; Monitoring Station 1614-B-1; Possible Building Foundation and Parking Lot **Reclassification:** None
Type: Foundation **Start Date:**
Status: Inactive **End Date:**
Description: The site is a small square concrete slab and nearby gravel parking area. Northwest of the slab is a gravel road with a gravel area on the other side. A few small pieces of asbestos transite, a few dry-cell batteries, and some steel anchoring cable were noted around the site during a 9/13/94 field investigation by Kathryn J. Moss.
Location: The site is located near the southwest corner of the 100BC Area, adjacent to the southwest corner of the patrol road. The site is approximately 170 meters (558 feet) southwest of the 118-B-1 Burial Ground.

Code: 100-C-4 **Classification:** Not Accepted
Names: 100-C-4; Export Water Line Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:**
Status: Active **End Date:**
Description: The site is a valve pit located along the export water line. The pit is marked with post and chain. The 1.8 by 1.8 meter (6 by 6 foot) wooden cover is caving into the valve pit. The cover is posted with a "Danger: Cave-In Potential" sign.
Location: The site is located approximately 600 meters (2000 feet) east of the 105-C Reactor Building, between the 100-B Perimeter Road and Route 1 near mile post 9.
Related Sites/ Structures: The site is associated with the export water line from 182-B Reservoir to the 200 Areas.

Code: 100-C-5 **Classification:** Not Accepted
Names: 100-C-5; 100-C Clean Water Pipelines; 100-C Service Water Pipelines **Reclassification:** None
Type: Product Piping **Start Date:** 1/1/1952
Status: Inactive **End Date:** 1/1/1969
Description: The site encompasses the clean water upstream pipelines for the 100-C Area, including underground pipelines used to transport raw, fire, export, and sanitary water from the river pump house, to the water treatment facilities and to 100-C Area facilities and fire hydrants. Lines within buildings, process and septic sewer pipes, pipes that carried water treated with sodium dichromate, and all lines that are downstream from the reactor building, i.e., those lines that carry cooling water from the reactor to the retention basin, trench, and/or the river are excluded.
Location: The location is described as underground lines running from the 181-C Pump house to the 183-C Water Treatment Facilities, and from there to other 100-C Area buildings, fire hydrants, and north to the 100-B Area, stopping at a line about half-way between the B and C areas, at about northing 144370 N.
Process Description: Reactor cooling water was pumped from the Columbia River, settled and treated to remove minerals, and pumped to the reactor core at a rate of 1.93E+05 liters (51,000 gallons) to 2.69E+05 liters (71,000 gallons) per minute.

Related Sites/ Structures: Related structures are the 181-C Pump house, 182-C Reservoir, the 183-C Basins and Clearwells, the 190-C Buildings, and the 105-C Reactor Building. Other pipeline sites in the 100-B\C Area include 100-C-9, the 100-C Area Process and Sanitary (Septic) Sewer Underground Pipelines; 100-C-6, the Effluent Pipelines; and 100-B-7, the 100-B Area Water Treatment Facilities Pipelines.

Waste Type: Water

Waste Description: Only uncontaminated piping remains.

Code: 100-C-8

Classification: Accepted

Names: 100-C-8; 105C Hydraulic Oil Release

Reclassification: Rejected (3/13/2002)

Type: Unplanned Release

Start Date: 1/1/1998

Status: Inactive

End Date: 1/1/1998

Description: The site is not marked or posted, no visible evidence of the spill remains because the concrete rubble that it was spilled on has been removed.

Location: The spill was located below the Rod Control Room of the 105-C Reactor Building, in a pile of concrete rubble approximately 7 feet deep. This rubble was contained within the basement directly below the old (now demolished) Outer Rod Room.

Release Description: On Monday, August 24, 1998, at approximately 0900 hours, the CAT 375 excavator broke a main hydraulic line while dismantling a concrete pad at 105-C. The excavator was taken out of service for repair. The exact quantity was not known at the time of the hose failure and was believed to be below the DOE reportable threshold of 160 liters (42 gallons). A large area was sprayed due to the hydraulic system being under pressure. On Wednesday, August 26, 1998, the 105-C Task Lead was notified the excavator hydraulic line was repaired and the replacement fluid equaled 182 liters (48 gallons). It is assumed that the entire hydraulic system was full to capacity prior to the hose failure and that the amount released was the exact amount of product that was put back into the reservoir [182 liters (48 gallons)].

Waste Type: Oil

Waste Description: Unocal Unax AW46 Hydraulic Oil, unregulated product.

Code: 124-C-4

Classification: Not Accepted

Names: 124-C-4; Sanitary Waste Site

Reclassification: None

Type: Sanitary Sewer

Start Date:

Status: Inactive

End Date:

Description: This site was assigned by Bill Hayward based on the information from BHI D&D in the 1995 RARA Summary Report. D&D could not identify the site location nor could the BHI historian. The site is thought to be either 1607-B10 or 1607-B11 as they are the only remaining septic systems in the 100B Area that have a 124 alias assigned to them. If a determination can be made that it is one of above referenced septic systems, the 124-C-4 will be added to the site as an alias. This site reference (as a separate site) will then be removed from the database.

Code: 100-D-10

Classification: Not Accepted

Names: 100-D-10; Storm Drain Outfall; Undocumented Liquid Waste Site **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The Technical Baseline Report (section 4.40) states that reportedly there was a small outfall structure upstream of the 1907-DR outfall. It was demolished at the same time as the 1907-DR outfall. The Technical Baseline Report states that the structure was similar in construction to the 1907-DR, only much smaller. It was used as a discharge outfall for the storm drain system of the 190-DR tank pit, which consisted of drains, sump, and pump to lift runoff to the outfall. The trench from the outfall structure to the waterline is apparent and appears to have a telephone cable buried in its bottom.

Location: The structure was located adjacent to the concrete block telephone building on the Columbia River bank and just south of the 100-D Area fence.

Related Sites/ Structures: The site was related to the 190-DR tank pit.

Waste Type: Stormwater Runoff

Waste Description: The unit reportedly received storm water run-off from the 190-DR tank pit.

Code: 100-D-11 **Classification:** Not Accepted

Names: 100-D-11; Temporary Garage and Gasoline Dispensing Station; Temporary Garage TC-21 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/1950

Location: The site's location is not known. Temporary construction facilities were generally placed near the site of the project. The water treatment facilities are located south-southwest of the 105-DR Reactor.

Waste Type: Oil

Waste Description: This site has the potential for soil contamination from gasoline, oil, and engine coolant.

Code: 100-D-17 **Classification:** Accepted

Names: 100-D-17; Burn Pit; Undocumented Solid Waste Site **Reclassification:** Rejected (8/27/1997)

Type: Burn Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site is a burn pit that is visible in 1948 photos (#901 and #922). The site now appears as a large, vegetation covered field. There are no features that clearly identify the site.

Location: The site is located southeast of the 105-DR Reactor, outside of the 100D perimeter fence and north of Route 2 North.

Waste Type: Construction Debris

Waste Description: The site likely contains burned construction debris.

Code: 100-D-26 **Classification:** Not Accepted
Names: 100-D-26; Borrow Pit; Potential Burial Trenches **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**

Description: The site is a borrow pit used as a source of clean fill. On July 10, 1997 a field investigation was performed by T. F. Johnson. The site appeared as a depression approximately 330 feet (100 meters) in diameter that was created from excavations with heavy equipment. Four distinct trenches were observed within the depression. All four trenches were covered with blown in tumbleweeds. A few tumbleweeds were removed for inspection and no waste or discolored soil was observed. An empty 208 liter (55 gallon) steel drum was located at the end of one trench and an empty 0.95 liter (1 quart) oil can was also observed near the site.

Location: The site is located approximately 250 meters (820 feet) east of the northeast corner of the patrol road that surrounds 100-D Area.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: An empty steel 55 gallon drum and an empty 1 quart oil can were observed at the site.

Code: 100-D-33 **Classification:** Accepted
Names: 100-D-33; Minor Construction Burial Ground #4 East Trench **Reclassification:** Rejected (3/20/2008)
Type: Burial Ground **Start Date:** 1/1/1954
Status: Inactive **End Date:**

Description: The site appeared as a vegetation-free, cobble-covered field. The trench was estimated to have been approximately 30 meters (100 feet) long by 15 meters (50 feet) wide. A Ground Penetrating Radar scan, done in 2004, did not identify any trench-like features.

Location: The site was located east/southeast of the 105-D Reactor, just south of the rail spur to the fuels transfer bay and east of 100-D-35. The site was outside the security fence for the 105-D Reactor Building.

Process Description: The site was thought to have been used for disposal of low-level construction wastes from reactor modifications.

Related Sites/ Structures: Co-located with 100-D-35, Minor Construction Burial Ground #4 East Trench.

Waste Type: Construction Debris
Waste Description: The site received low-level construction wastes from the reactors. Potential contaminants include: Co-60, Ni-63

Code: 100-D-34 **Classification:** Not Accepted
Names: 100-D-34; Exclusion Area; 100-D/DR Grounds Surrounding Deactivated Areas **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The grounds within the 100-D/DR exclusion area that are not part of other waste sites.

Code: 100-D-35 **Classification:** Accepted
Names: 100-D-35; Minor Construction Burial Ground #4 East Trench **Reclassification:** Rejected (3/20/2008)
Type: Burial Ground **Start Date:** 1/1/1954
Status: Inactive **End Date:**
Description: During the March 31, 1999 site visit, no evidence of a trench was visible. The suspected site area appeared as a vegetation-free, cobble-covered field. A Ground Penetrating Radar scan, done in 2004, did not identify any trench like features.
Location: The site was thought to be located west of 100-D-33 east/southeast of the 105-D Reactor, just south of the rail spur to the fuels transfer bay and outside the security fence for the 105-D Reactor Building.
Process Description: The expected purpose of the burial ground was to dispose of 105-D Reactor thimbles, rod guides, and miscellaneous waste during the Ball 3X conversion project.
Related Sites/ Structures: Co-located with 100-D-33, Minor Construction Burial Ground #4 East Trench,
Waste Type: Construction Debris
Waste Description: The site received low-level construction wastes from the reactors. Potential contaminants include: Co-60, Ni-63

Code: 100-D-36 **Classification:** Not Accepted
Names: 100-D-36; 100-N-20; Monitoring Station 1614-D-1; Undocumented Concrete Pad **Reclassification:** None
Type: Foundation **Start Date:**
Status: Inactive **End Date:**
Description: The site is a 1.8 meter by 1.8 meter (6 foot by 6 foot) concrete pad with anchor bolts set in the surrounding edges.
Location: The site is located approximately 20 meters (65 feet) southwest of the southwest corner of the 100-D Area Patrol Road.

Code: 100-D-37 **Classification:** Not Accepted
Names: 100-D-37; 1614-D-3 Monitoring Station; Undocumented Concrete Pad **Reclassification:** None
Type: Foundation **Start Date:**
Status: Inactive **End Date:**
Description: The site is a 1.8 meter by 1.8 meter (6 foot by 6 foot) concrete pad with anchor bolts set in around the outer edges.
Location: The site is located northeast of the northeast corner of the Patrol Road in 100-D Area.

Code: 100-D-38 **Classification:** Not Accepted
Names: 100-D-38; Suspect Septic Tank **Reclassification:** None

Type: Septic Tank **Start Date:**
Status: Inactive **End Date:**
Description: The site is a junction box and manhole associated with the 1607-D2 Septic System. The site is identifiable in the field by a steel lid on top of a circular brick base.
Location: The site is located north of 105-D, just northeast of the intersection where north-south road that passes west of the 105-D and 105-DR reactors crosses the east-west road that passes north of the 105-D reactor and between the 1700 buildings.

Code: 100-D-40 **Classification:** Accepted
Names: 100-D-40; Minor Construction Burial Ground #5 Hole **Reclassification:** Rejected (3/20/2008)
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The burial ground area appeared as a vegetation covered area. A 2004 Ground Penetrating Radar scan, did not identify any trench like features.
Location: The site was thought to be located 220 meters (720 feet) east of the 105-D Reactor Building and 23 meters (75 feet) south of the railroad tracks that service the 105-D Reactor Building.
Related Sites/ Structures: Co-located with 100-D-41 Minor Construction Burial Ground #5 Trench.
Waste Type: Equipment
Waste Description: The burial ground was dug to receive contaminated material and equipment from the 105-D Reactor Building. Potential contaminants included: Co-60, Ni-63

Code: 100-D-41 **Classification:** Accepted
Names: 100-D-41; 118-18; 118-D-18; Minor Construction Burial Ground #5 Trench **Reclassification:** Rejected (3/20/2008)
Type: Burial Ground **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1956
Description: During a 1999 walkdown, no evidence of the burial ground was observed. The area appeared as a vegetation covered field.
Location: The site was thought to be located 210 meters (700 feet) east of the 105-D Reactor Building and 23 meters (75 feet) south of railroad tracks that serviced the 105-D Reactor Building.
Process Description: This burial ground has been described as receiving irradiated reactor parts, dummies, thimbles, rods, gun barrels, and other contaminated solid wastes. During the March 31, 1999 site visit, no evidence of the trench was visible. A Ground Penetrating Radar scan, done in 2004, did not identify any trench like features.
Related Sites/ Structures: Co-located with 100-D-40, Minor Construction Burial Ground #5 Hole.
Waste Type: Construction Debris
Waste Description: The waste is miscellaneous construction related solid wastes from the 100-D Reactors.
Description: Potential contaminants include: Co-60, Ni-63

Code:	100-D-53	Classification:	Accepted
Names:	100-D-53; 117-DR Filter Building; 117-DR HEPA Filter Building	Reclassification:	Interim Closed Out (3/4/2004)
Type:	Process Unit/Plant	Start Date:	1/1/1960
Status:	Inactive	End Date:	
Description:	<p>The site has been remediated and interim closed out. The ventilation exhaust filter building housed blowers and particulate filters used to treat the ventilation exhausted from the 105-DR Reactor Building. Included in this site were the 117-DR Building, the intake ventilation duct from the 105-DR Reactor Building, and the exhaust ventilation duct to the 116-DR Reactor Exhaust Stack. The building and below-grade duct work were made of reinforced concrete 0.3 to 0.6 meters (1 to 2 feet) thick. Above grade ducts were constructed of 10 gauge black steel. The building was approximately 20.7 meters (68 feet) long, 11.9 meters (39 feet) wide, and 10.4 meters (34 feet) high with 2.4 meters (8 feet) above grade. A soil berm was built up around the building from grade level to the top of the structure. The building was divided into two large filter cells with a smaller operating area between them. The filter cells each could hold six filter frames (two wide and three deep). The filter frames were designed to hold twenty-four filters that were 0.6 meters (2 feet) square by 0.3 meters (1 foot) thick. There are spaces between the frames to allow access for filter maintenance. The operating area between the two cells was divided into two levels. The upper level, called the access gallery had ten doors that led from it. Four doors opened into each of the filter cells and the other two doors provided access to the intake and exhaust ducts. The operating gallery was located below the access gallery. A sump was located at each end of the operating gallery to collect incidental drainage from above. A large open area extended the full length of the structure above the access gallery and the filter cells. It ranged in height between 2.5 and 2.4 meters (8.1 and 7.8 feet), due to the structure's sloping roof. The space provided access to the cement cover blocks that were positioned over each of the filter frames.</p>		
Location:	<p>The site was located south of the 105-DR Reactor (118-DR-2), near the 116-DR Stack (132-DR-2).</p>		
Process Description:	<p>Before filter buildings were used, unfiltered ventilation was exhausted directly from the reactor to the atmosphere. The reactor confinement system diverted the exhaust just before the stack and routed it to the filter building where it passed through a series of filters. The filtered exhaust was then routed back to the ventilation exhaust stack where it was discharged to the atmosphere. Sealwells within the filter building provided the ability to direct the exhaust into one or both of the filter cells.</p>		
Related Sites/ Structures:	<p>The site was associated with the 105-DR Reactor (118-DR-2), the 116-DR Stack (132-DR-2), the 119-DR Sample Building, and the 117-DR Seal Pit Crib (116-DR-8).</p>		
Waste Type:	<p>Equipment</p>		
Waste Description:	<p>The site contained radiologically contaminated surfaces and contamination from 105-DR Reactor ventilation exhaust. Hazardous residue from the Large Sodium Fire Facility is accounted for within that site (122-DR-1).</p>		
Closure Info:	<p>122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.</p> <p>Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals</p>		

were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, niel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

Code: 100-D-55	Classification: Not Accepted
Names: 100-D-55; Gravel Pit #21; Pit 21	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date:
Status: Active	End Date:
Description:	The site is a large excavation containing another waste site, 100-D-15, which is debris in the east end of the pit. The debris is marked with post and chain and labeled as a separate waste site. The remainder of the pit is available to use as clean fill material (Gravel Pit #21). There is no other waste material in the pit. The soil is sandy.
Location:	The gravel pit is located south of the 100-D Area perimeter road.
Related Sites/ Structures:	The pit is associated with the dumping area known as Site Code 100-D-15.
Waste Type:	Demolition and Inert Waste
Waste Description:	There is an area of discarded debris located in the east end of this gravel pit. The debris is a

separate waste site known as 100-D-15. In 1994, Kaiser Hanford removed sediments from the 182-D basins and deposited them inside this gravel pit, partially over top of the previously discarded debris. The sediment was determined to be "clean dredge soil" as defined in Washington Administrative Code 173-304-100. The total content of the discarded debris is unknown.

Code: 100-D-57 **Classification:** Not Accepted

Names: 100-D-57; Earth Crib Near 107-DR **Reclassification:** None

Type: Crib **Start Date:** 1/1/1955

Status: Inactive **End Date:**

Description: This site is a duplicate of 100-D-4, which has been excavated and closed out. Site 100-D-57 was initially identified from Drawing H-1-8630-DR, which shows an "Earth Crib" at an unrecognizable, but short, distance off the southeast side of the 116-DR-9 Retention Basin. Through examination of Ground Penetrating Radar results, other documents, and excavations of the 116-DR-9, 100-D-4, and 100-D-49 sites, which effectively removed all soil and subsurface structures in this area, it has been determined that this site, 100-D-57, was created in error.

Location: The crib is located 30 meters (100 feet) east of the southeast corner of the 116-DR-9 Retention Basin.

Code: 100-D-58 **Classification:** Accepted

Names: 100-D-58; 100-DR Area On-Site Sewage System for MO-980 & 4-Closet Restroom Facility; 100-DR OSS **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1998

Status: Active **End Date:**

Description: The septic tank portion of the site is surrounded by yellow steel posts and the drain field is surrounded with light duty chain and steel fence posts. The drainfield area is covered with tumbleweeds. The septic tank is a 5,678 liter (1,000 gallon), two compartment tank. The tank can be accessed through 0.765 meter (30 inch) diameter ribbed PVC risers that extend to grade and are covered by fiberglass lids that are bolted in place. The risers are centered over 0.609 meter (24 inch) diameter openings through the concrete lid.

Location: The site is located approximately 183 meters, (600 feet) north northwest of the 105-DR Reactor Building and 76 meters, (250 feet) southwest of the 105-D Reactor Building.

Process Description: The septic tank separates the settleable solids and floating effluent scum from the clear liquid. The effluent is passed from the septic tank to the pump chamber through a "Bio-Tube" effluent filter. The filter is located at the outlet end of the septic tank. The filter can be accessed through one of the 0.203 meter (30 inch) PVC risers. It has a removable filter element which can be easily cleaned. A 0.203 meter (4 inch) diameter PVC pipe carries the effluent from the outlet of the filter to a 5,676 liter (1,500 gallon) pump chamber. The disposal area consists of buried pressurized PVC pipe distribution system constructed in a gravel-lined trench. The outlet orifices of the system are sized at 4.76 millimeter (3/16 inch) diameter [1.5 millimeters (1/16 inch) larger than the effluent screen] to avoid orifice plugging. The disposal area provides the absorption area for disposal of the clear sewage liquid

Related Sites/Structures: The site receives sanitary sewage from MO-980 and the restroom trailer. There are no radiation zones or known contamination areas in or near MO-980 or the restroom trailer.

Waste Type: Sanitary Sewage

**Waste
Description:**

Code: 100-D-59 **Classification:** Accepted

Names: 100-D-59; French Drain at the 183-D Acid Transfer Station **Reclassification:** Rejected (1/30/2003)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is an upright vitrified clay pipe adjacent to the acid transfer structure at the railroad tracks next to the 183-D Building. Pipes used to transfer the acids from the rail cars are still on the structure, but the pipe sending overflow to the french drain has been disconnected (part of the pipe has been removed). The french drain is about 25 centimeters (10 inches) high, and 45 centimeters (18 inches) in diameter, with a steel cover and a 2.5-centimeter (1-inch) galvanized steel pipe rising up through the steel cover.

Location: The drain is on the east side of the railroad tracks that lead up the west side of the 183-D Building. It is between the transfer station and the underground pipe channel.

Process Description: Sulfuric acid was used to adjust the pH of the water in the 183-D Water Treatment Facility. It arrived in railcars and was transported to the facility via underground pipelines. The french drain received overflow from the acid transfer operations.

Related Sites/ Structures: This drain is associated with the acid transfer station at the 183-D Building.

Waste Type: Chemical Release

Waste Description: The waste disposed to the french drain was overflow sulfuric acid from railroad car transfer operations. Any waste acid would be neutralized in the alkaline Hanford soils.

Code: 100-D-68 **Classification:** Accepted

Names: 100-D-68; 190-DR Process Water Pump House **Reclassification:** No Action (7/25/2005)

Type: Process Unit/Plant **Start Date:**

Status: Inactive **End Date:**

Description: The facility has been demolished to 1 meter (3 feet) below-grade and backfilled. Before demolition the building included a basement, pipe gallery operating floor, suction tunnel and hot well bay, process tunnels, and two valve houses.

Location: The facility was located due south of the 151-D Substation, east of the 183-DR Clearwells and southeast of the 105-DR Reactor.

Process Description: The Process Water Pump House provided high volume treated water to 105-DR Reactor for cooling. The facility contained eight electric primary water pumps that pumped treated water from the clearwell tanks to the reactor. The discharge water pipelines were composed of four sets of lines with each line 30.5 cm (12 in) in diameter. These pipelines combined into four 30.5 cm (24 in) discharge pipelines. Two sets of dual 30.5 cm (24 in) pipelines ran from the 190-DR facility to two valve pits. From each valve pit, the dual 30.5 cm (24 in) pipelines routed the process water to the 105-DR Reactor.

Related Sites/ Structures: The associated structures include the 126-DR-1 (183-DR Clearwell Tank Pit), the 118-DR-2 (105-DR Reactor), 100-D-27, (151-D Substation), and the 100-D-28 septic system, piping and

tile fields.

Waste Type: Construction Debris
Waste Description: Prior to demolition, above-grade wastes included polychlorinated biphenyls (PCBs), asbestos (roofing, siding, pipe trays, and thermal piping insulation), mercury (installed in instrumentation and control systems), lead (lead-based paint and lead washers), and oils/greases. Since the above-grade structure was completely removed during demolition, the only remaining waste was the below-grade structure. The waste in the basement included water, sludge and potentially contaminated concrete.

Closure Info: Prior to demolition, all friable asbestos was removed, including all asbestos containing material and all potential asbestos containing material from ventilation fan housings, pipes, and loose materials that had fallen to the ground. Additionally, biological hazards, i.e., bird droppings, small dead birds, and eggshells were removed.

In the spring of 2005, the above-grade portion of the facility was demolished and the below-grade portion of the facility was demolished to 1 meter (3 feet) below-grade. The debris went to ERDF. The remainder of the concrete facility was left in place. The two valve houses were also demolished. The water tunnels were left in place and are currently being used as bat habitat. All of the piping was removed and recycled.

Approximately, 20 to 25 centimeters (8 to 10 inches) of standing water that had accumulated from runoff of storm water was present in the north and south annex basement areas (B and C Bays). B Bay (a.k.a., main basement sump) contained sludge that had accumulated. The water was removed prior to below-grade demolition.

In order to leave the basement in place as clean concrete, sampling results had to show that contaminants in the concrete were below the applicable remedial action goals as defined in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (DOE/RL-96-17).

Code: 100-D-79	Classification: Accepted
Names: 100-D-79; SCA Area 1; SCA Area 2; 100D Posted Soil Contamination Areas	Reclassification: Rejected (9/15/2010)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: This site consists of two posted radiological soil contamination areas (SCA). Area 1 is an SCA that was found during the 2006 Orphan Site Evaluation (OSE) field investigation. The SCA is posted and is in an area of previously disturbed soils. Area 2 is also an SCA that was identified during the 100-D Orphan Site field investigation in 2006.	
Location: There are two posted soil contamination areas located north of 105-D. Area 1 is near the north perimeter road and southeast of the 1904-DR outfall. A hand held Global Positioning unit found the center of Area 1 coordinates to be E573663.40, N152389.29. Area 2 is located on the north side of the 126-D-1 (188-D) ash pile. A hand held Global Positioning unit found the center of Area 2 to be at coordinates E573470.92, N152198.90.	
Process Description: Construction drawing M-1600-D, Sheet 8 indicates that Area 1 was located in was used as a spoil pile area in 1947. No other information is available. No information was available for Area 2.	

Code: 100-D-89	Classification: Not Accepted
Names: 100-D-89; Power Pole and Junction Box Debris	Reclassification: None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of two surface debris areas containing abandoned electrical components.

Location: This site is located 83 meters (272 feet) north of the 108-D Chemical Facility.

Process Description: The electrical service box is sitting on a 1.5 meter (5 foot) tall frame and is fed through the bottom with ridged conduit. Attached to the frame is a cord hanger with several feet of electrical cord. The electrical cord has been disconnected from the strain relief. It was most likely used as a power source for engine block warming of heavy equipment. It is not known if the utility pole serviced the electrical box.

Related Sites/ Structures: The 100-D-31 Process Sewer runs below this location.

Waste Type: Equipment

Waste Description: No contaminants of potential concern were noted. This electrical box was used as a junction box and should not have contained PCB's.

Code: 100-D-91 **Classification:** Not Accepted

Names: 100-D-91; 100-D/DR Electrical Components **Reclassification:** None
Debris

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a flat gravel area where pallets of electrical components once were staged.

Location: This site is located 12 m (39 ft) northeast of the 1713-D Store House.

Related Sites/ Structures: The closest structure was the 1713-D Store House.

Waste Type: Equipment

Waste Description: There are no contaminants of concern.

Code: 100-D-92 **Classification:** Accepted

Names: 100-D-92; Second Potential UST Near **Reclassification:** Rejected (2/11/2010)
Dichromate Station

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of an underground concrete utility encasement for freshwater pipelines and the underlying soil located below a rail line. The site was originally reported, in a geophysical investigation, as a potential underground storage tank (UST). A detailed spatial analysis was conducted and determined that the feature was a known piping encasement located below the railroad tracks.

Location: This structure is co-located with 100-D-93 and associated with the 183-D Water Treatment facilities, the 100-D-12 Sodium Dichromate Transfer Station (pump station), 100-D-63, 100-D/DR Service Water Pipelines, 100-D/DR Clean Water Pipelines, and 100-D-56, 100-D Area Sodium Dichromate Underground Supply Lines (see subsites).

Process Description: The encasement protected utilities buried beneath rail road lines and is located approximately 0.91meter (3 feet) below grade. A 7.6 centimeter (3 inch) sodium dichromate pipeline and a 40.64 centimeter (16 inch) freshwater pipeline was observed inside the encasement.

Related Sites/ Structures: This structure is co-located with 100-D-93 and associated with the 183-D Water Treatment facilities, the 100-D-12 Sodium Dichromate Transfer Station (pump station), 100-D-63, 100-D/DR Service Water Pipelines, 100-D/DR Clean Water Pipelines, and 100-D-56, 100-D Area Sodium Dichromate Underground Supply Lines (see subsites).

Waste Type: Process Effluent

Waste Description: The encasement contains a portion of the 100-D-56 pipeline. WIDS 100-D-56 states "Historical review, geophysical surveys and a site visit in 2005 concluded that the site appeared to contain hazardous constituents (i.e. hexavalent chromium) at levels in exceedance of remedial action goals"

Potential Contaminants of Concern:
As stated in the Site Comment, the encasement location consists of a portion of the 100-D-56 pipeline. WIDS 100-D-56 states "Historical review, geophysical surveys and a site visit in 2005 concluded that the site appeared to contain hazardous constituents (i.e. hexavalent chromium) at levels in exceedance of remedial action goals".

Code: 100-D-93 **Classification:** Accepted

Names: 100-D-93; Potential UST Near Dichromate Station **Reclassification:** Rejected (5/20/2010)

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of an underground concrete utility encasement for freshwater pipelines and the underlying soil located below a rail line. The site was originally reported, during a geophysical investigation, as a potential underground storage tank (UST). A detailed spatial analysis was conducted and determined that the feature was a known piping encasement located below the railroad tracks.

Location: This site is located 10 meters (32 feet) east of the 100-D-12 Sodium Dichromate Transfer Station and 73 meters (239 feet) southeast of the 183-D building. It is approximately 1.54 m (5 ft) below grade.

Process Description: The encasement protected utilities buried beneath rail road lines and is located approximately 0.91meter (3 feet) below grade. A 7.6 centimeter (3 inch) sodium dichromate pipeline and a 40.64 centimeter (16 inch) freshwater pipeline was observed inside the encasement.

Related Sites/ Structures: This structure is co-located with 100-D-92 and associated with the 183-D Water Treatment facilities, the 100-D-12 Sodium Dichromate Transfer Station (pump station), 100-D-63, 100-D/DR Service Water Pipelines, 100-D/DR Clean Water Pipelines, and 100-D-56, 100-D Area Sodium Dichromate Underground Supply Lines (see subsites).

Waste Type: Process Effluent

Waste Description: The encasement contains a portion of the 100-D-56 pipeline. WIDS 100-D-56 states "Historical review, geophysical surveys and a site visit in 2005 concluded that the site appeared to contain hazardous constituents (i.e. hexavalent chromium) at levels in exceedance of remedial action goals"

Code: 100-D-95 **Classification:** Accepted

Names: 100-D-95; 100-D/DR Unnumbered Septic Tanks and Tile Field **Reclassification:** Rejected (11/10/2010)

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The site was thought to consist of two septic tanks and a tile field. Gravel and rabbit brush were observed on the surface of the site.

Location: This site is located approximately 150 meters (492 feet) northwest of the 182-D Reservoir. The coordinates are the centroid of the geophysics performed.

Process Description: During construction of the Hanford Engineer Works, temporary sewer lines and septic tanks were installed for the disposal of sanitary sewage. The "Plot Plan of Temporary Construction Facilities 100-D Area, August 1944" indicated that a septic tank and tile field were proposed at this location to service several temporary buildings.

Related Sites/Structures: This septic system may have serviced the 1735-D Division Engineers Office, Training Headquarters, Miscellaneous Storage Facility and other temporary construction facilities.

Waste Type: Sanitary Sewage

Waste Description: Transfer of non-radioactive liquid sanitary sewage waste.

Code: 120-D-1 **Classification:** Accepted

Names: 120-D-1; 100-D Ponds **Reclassification:** Closed Out (8/27/1999)

Type: Pond **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1994

Description: The site was modified in 1979 to form a two-compartment pond, one overflowing to the other. The north pond was a percolation pond and the south pond was a settling pond.

Location: This site is located within the 100-D Ash Disposal Basin (126-D-1).

Process Description: The 100-D Ponds received corrosive waste from the the regeneration of ion exchange columns located in 185-D and 189-D.

Waste Type: Process Effluent

Waste Description: This site received nonhazardous 183-D Sandfilter backwash, small quantities of filtered, chlorinated water from hydraulic test loops, and fuel discharge trampoline tests. The estimated flow rate was 1.7E+05 liters/day (45,000 gallons/day). Corrosive demineralizer recharge effluent from two sources was released at intervals of once every 2 to 3 years for one regenerate source and once every 6 years for the other. Sampling indicates the potential for mercury and polychlorinated biphenyl (PCB) contamination.

Closure Info: On August 27, 1999, a letter was issued from the State of Washington Department of Ecology that declared the Treatment Storage and Disposal (TSD), RCRA Part A permit, portion of this unit to be closed.

Code: 126-D-1 **Classification:** Accepted

Names: 126-D-1; 184-D Powerhouse Ash Pit; 188-D Ash Disposal Area; 100-D Ash Disposal Basin **Reclassification:** Rejected (6/25/1998)

Type: Coal Ash Pit **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1960

Description: The 126-D-1 site is a large ash disposal area. The site was originally a large excavated basin approximately 60 meters (200 feet) long, 60 meters (200 feet) wide, and 3 meters (10 feet) deep. The extent of the original basin obscured by ash piles.

Location: The site is located north of the 184-D Powerhouse.

Process Description: Coal ash from the 184-D Powerhouse was mixed with raw river water and sluiced in slurry form to the ash pit via a 20 centimeter (8 inch) ashcolite pipe.

Waste Type: Ash

Waste Description: This site received an unknown amount of coal ash that was sluiced to pits with raw river water from the 184-D Powerhouse. The ash has been determined by testing in accordance with WAC 173-303 to be nonextraction process (EP) toxic.

Code: 126-D-3 **Classification:** Accepted

Names: 126-D-3; 184-D Salt Dissolving Pit and Brine Pump House; D Area Brine and Salt Dilution Pits **Reclassification:** Rejected (10/2/1997)

Type: Sump **Start Date:**

Status: Inactive **End Date:**

Description: The salt dissolving pits and brine pump pit were part of a single below-grade concrete structure that provided brine for the 184-D Powerhouse. The structure has been demolished and buried in situ. No evidence of the site remains at the surface. The two salt dissolving pits each had inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.8 meters (9.25 feet) tall. They had a design high water line 2.4 meters (7.75 feet) from the pit bottom. An overflow slot connecting the two dissolving pits was located 0.3 meters (1 foot) above the high water line. The bottom of each pit was filled with a 12.7 centimeter (5 inch layer) of 1.3 to 2.6 centimeter (1/2 to 1 inch) gravel topped by a 17.8 centimeter (7 inch) layer of 0.3 to 0.6 centimeter (1/8 to 1/4 inch) gravel. The dissolving pits each had a 2.4 meter (8 foot) by 0.9 meter (3 feet) opening at the top for receiving salt. Each pit had a capacity of 23,600 kilograms (52,000 pounds) of salt. The brine pump pit is located adjacent to the two salt dissolving pits. The pit was 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.1 meters (7 feet) deep. It held two pumps and associated piping (all brass) for the brine system. The floor of the pump pit sloped toward a 46 by 46 by 46 centimeter (18 by 18 by 18 inch) sump in a corner.

Location: The site is located north of 184-D and just south of the railroad tracks.

Process Description: The brine was used to regenerate the zeolite ion exchange demineralizers that were part of the powerhouse water treatment system.

Related Sites/ Structures: The site is associated with the 184-D Power House.

Waste Type: Demolition and Inert Waste

Waste Description: The structure was demolished and buried in situ.

Code: 132-D-4 **Classification:** Accepted

Names: 132-D-4; 105-D Reactor Exhaust Stack; 116-D Reactor Exhaust Stack **Reclassification:** Interim Closed Out (7/27/2005)

Type: Stack **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1967

Description: The site has been remediated and interim closed out.

Location: The stack was located south of the 105-D Reactor Building.

Process Description: The unit was a monolithic structure constructed of reinforced concrete. The maximum wall thickness was 0.46 meters (1.5 feet) at the base. It rested on a double octagon-shaped base that extended 5.3 meters (17.5 feet) below grade. An opening at the base provided access to its interior portion. This opening was fitted with a steel door. The outside rungs had been removed to about 3 meters (10 feet) above grade. Originally exhaust air flowed directly from the 105-D Building to the exhaust stack. Following completion of the confinement project in 1960, the exhaust air was diverted to the 117-D Filter Building, via underground ducts, prior to release through the stack.

Waste Type: Demolition and Inert Waste

Waste Description: This unit was used to exhaust confinement air that originated from the work areas in the 105-D Reactor Building. The interior of the stack contains an unknown quantity of low-level radioactive materials.

Closure Info: 118-D-6:2, 118-D-6:3 and 132-D-4 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP) for the 118-D-6:2, 105-D Reactor Ancillary Support Areas, Below-Grade Structures, and Underlying Soils; the 118-D-6:3, 105-D Reactor Fuel Storage Basin and Underlying Soils; and the 132-D-4, 105-D Reactor Exhaust Stack Foundation (CVP) demonstrated that removal action at the 105-D Reactor subsites 118-D-6:2, 118 D-6:3, and 132-D-4 has achieved the removal action objectives established in the applicable action memorandums and has achieved the corresponding RAGs established in the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings, the Sampling and Analysis Plan for Interim Closure of the 105-D and 105 H Reactor Below-Grade Structures and Underlying Soils (SAP), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The FSB water level was lowered upon closure of the reactor and further cleaned out during 1984. Ruptured fuel elements had caused the shielding water to become highly contaminated. The remaining water was processed and released to 116-D-10 pond. Then an asphalt emulsion was applied to the floors and walls of the basin to fix loose contamination. The remaining basin hardware, perfs, buckets, and sludge were packaged and disposed of as low-level radioactive waste in the 200 Area burial grounds.

These areas were surveyed, and local contamination was removed in preparation for clean demolition. With the exception of the FSB walls and floor below 4.6 meters (15 feet), all structures in this zone were removed due to surface contamination being present. Sampling of underlying soils was not required because structures in this zone were not subjected to standing contaminated water and there was no mechanism for residual surface contamination to penetrate into the concrete and the underlying soil. The above- and below-grade structures were demolished and the demolition debris sent to ERDF. A section of 100 D-48:4 effluent pipeline remains buried under what was room 210. This section of pipeline will be considered separately from demolition zone 1 and deferred to the Remedial Action Project.

It was determined in the Sampling and Analysis Plan for Interim Closure of the 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils that the 105-D FSB would not be cored to sample the underlying soils because this FSB was not known to have leaked (water

level variations were consistent with evaporation), coring was very difficult and potentially unsafe, and the soils beneath the 100-C and 105-DR FSBs were found to be clean. The 100-D Reactor Site Technical Baseline Report suggests that all of the FSBs had leaked. However, this statement is not supported by the process history of the 105-D FSB, and sampling of the underlying soils at the 105-C and 105-DR FSBs showed that they had not leaked. The FSB concrete floors from all of the previously decommissioned reactors were found to have various types of contamination that penetrated only a maximum of a few millimeters into the concrete. Sampling showed the contamination had not penetrated through the 0.3 to 0.6 meters (1 to 2 feet) of concrete in the FSB floors.

The 105-D Reactor subsites 118-D-6:2, 118-D-6:3, and 132-D-4 have been verified to be remediated in accordance with the applicable action memorandums and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required

Code:	1607-D3	Classification:	Accepted
Names:	1607-D3; 1607-D3 Sanitary Sewer System; 1607-D3 Septic Tank; 1607-D3 Septic Tank and Associated Drain Field	Reclassification:	Closed Out (2/23/2001)
Type:	Septic Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/2000
Description:	The site is an inactive septic system associated with the 151-D Substation. A sign stating "Abandoned Septic Tank per WAC 246-272-1850 DynCorp Environmental" is posted at the site. The tank has been abandoned per WAC 246-272-18501 and as of August 2000 is indistinguishable in a dirt and cobble field. The reinforced concrete tank is 1.8 meters (6 feet) long, 0.9 meters (3 feet wide), and 3 meters (9 feet 10 inches) deep (inner dimensions). The tank had a design capacity of 1325 liters (350 gallons) based on a user capacity of 10 persons, a flow of 132 liters (35 gallons) of sewage per capita per day, and an average detention time of 1 day. The walls are 20 centimeters (8 inches) thick. The floor is 15 centimeters (6 inches) thick. The tile field was constructed of 10 centimeter (4 inch) vitrified or concrete pipe, or drain tile with a minimum of 2.4 meter (8 foot) per capita. The laterals are open jointed and spaced 2.4 meters (8 feet) apart. Prior to decommissioning, the septic tank was surrounded by light posts and chain.		
Location:	The septic tank and drain field are located east of the 151-D Electrical Substation.		
Process Description:	The site serviced the 151-D Electrical Substation.		
Waste Type:	Sanitary Sewage		
Waste Description:	This unit received sanitary waste from the 151-D Electrical Distribution Substation. The flow rate to this unit was estimated at 3,970 Liters (1,050 gallons) per day.		
Closure Info:	The tank has been abandoned per WAC 246-272-18501. The septage was removed from the tank sometime in the past. In July 2000, the lid was removed from the tank and the void space in the tank was filled with soil. A radiological survey was done on the empty tank and excavated soil.		

Code:	122-DR-1	Classification:	Accepted
Names:	122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility	Reclassification:	Closed Out (7/1/2004)

Code: 122-DR-1:1 **Classification:** Accepted

Names: 122-DR-1:1; Office Area; Storage; Testing; 100-D-51; 105-DR 90-Day Waste Accumulation Area; 122-DR-1 Area 1 **Reclassification:** Closed Out (10/1/1996)

Type: Laboratory **Start Date:**

Status: Inactive **End Date:**

Description: Area 1 consists of the exhaust fan room, small fire room, large fire room, sodium handling room, and an office area. The exhaust fan room is 6.2 meters (20.5) feet wide, 8.2 meters (27 feet) long, and 6.4 meters (21 feet) high. In this room, waste alkali metals from various sources, including residuals from tests, failed equipment, and drum heels, were reacted at atmospheric pressure. The burn pans and equipment were cleaned periodically using water and the rinsate was collected in a sump. The wash water was pumped from the sump to a seal pit where it was neutralized prior to discharge. The small fire room is 6.2 meters (20.5 feet) wide, 8.2 meters (27 feet) long, and 6.4 meters (21 feet) high. It contains one steel cylindrical pressure vessel with a dished top. The vessel has a volume of approximately 14 cubic meters (500 cubic feet). When in use, the vessel could be purged with nitrogen or argon to maintain a controlled atmosphere. This vessel was the only one used to burn lithium-lead alloy waste. The large fire room is 6.2 meters (20.5 feet) wide, 8.2 meters (27 feet) long, and 6.4 meters (21 feet) high. It contains the Large Test Cell which is a steel cubicle 110 cubic meters (3,700 cubic feet) in volume. The cell could be purged with nitrogen or argon to maintain a controlled atmosphere. The sodium handling room contained drum melters and a 3,400 liter (900 gallon) type-304 stainless-steel sodium batch tank which provided sodium to the Large Test Cell. The tank was resupplied from sodium drums that were heated to liquefy the sodium, which was then discharged into the tank with inert gas. The office area provided space for office work and storage of nondangerous materials. During cleanup activities equipment was removed from the rooms, decontaminated and stockpiled for either recycling or reuse. The interiors of the Large Test Cell and the pressure vessel were decontaminated with a high pressure water blast to remove lead and carbonate contamination. The rooms were washed down using a pressure washer and a mildly acidic solution to remove visible residue. All penetrations into the reactor exhaust tunnels were sealed to isolate the area and prevent recontamination. A 90-day waste accumulation area was set up at the north end of the office area for use during clean up activities. The accumulation area was enclosed within a wire cage. When the waste was removed, the unit was closed. The area was clean closed.

Location: The 105-DR Large Sodium Fire Facility is located in the supply and exhaust fan wing of the 105-DR Reactor Building.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:2 **Classification:** Accepted

Names: 122-DR-1:2; Exhaust Tunnels; 122-DR-1 Area 2 **Reclassification:** Closed Out (7/1/2004)

Type: Laboratory **Start Date:**

Status: Inactive **End Date:**

Description: Area 2 consisted of the upper and lower exhaust tunnel, the blower that moved Large Sodium Fire Facility (LSFF) exhaust from the lower to the upper tunnel, the exterior underground tunnel to the 117-DR HEPA Filter Building, and the ducts to the submerged gravel scrubber. Steel barricades at the north end of the tunnels blocked air flow to and from the reactor. The tunnel had low, but measurable radioactivity when sampled in 1987 (see DOE/RL-90-25, Rev 2, Appendix A for sampling information). This area is part of the 105-DR Reactor Building and

is also included in its Waste Information Data System (WIDS) site (118-DR-2).

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, ninel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:3

Classification: Accepted

Names: 122-DR-1:3; Gravel Scrubber; 122-DR-1 Area 3

Reclassification: Closed Out (10/1/1996)

Type: Laboratory**Start Date:****Status:** Inactive**End Date:**

Description: Area 3 consists of a submerged gravel scrubber and ducts that were installed in 1982 as part of a filter development program. Installation of the gravel scrubber allowed the offgas from tests or burning to bypass the 117-DR HEPA Filter Building. The scrubber water was confirmed to be within pH tolerances (2.0 to 12.5) and discharged to the 116-DR-8 Crib. Two gravel samples numbered BOG9F6 and BOG9F7 were taken from the gravel scrubber. Based on evaluation of the sample data, the gravel did not designate as a Dangerous Waste (see WHC-SD-EN-EV-034, Rev. 1 for sample results). The gravel that had been removed from the unit was made available for reuse. The associated ductwork was removed. The area was clean closed.

Location: The site was located at the south end of the 100 D/DR Exclusion Fence.

The SubSite is Part Of:**Code:** 122-DR-1**Names:** 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:4**Classification:** Accepted**Names:** 122-DR-1:4; 117-DR HEPA Filter Building; 122-DR-1 Area 4**Reclassification:** Closed Out (7/1/2004)**Type:** Laboratory**Start Date:****Status:** Inactive**End Date:**

Description: Area 4 consisted of the 117-DR HEPA Filter Building and the downstream tunnel to the reactor stack. The filter building housed the exhaust air filters. The building was about 18 meters (59 feet) long, 12 meters (39 feet) wide, and 11 meters (35 feet) high. The Filter Building was connected by underground concrete ductwork to the 116-DR exhaust stack. The filter building contained the HEPA filters, which were installed in four filter frames (24 filters per frame). In 1972, the original HEPA filters from the 105-DR Reactor were replaced before Large Sodium Fire Facility (LSFF) operations began. However, remnant radioactivity from the exhaust tunnels or filter holders had probably been picked up by the new filters. The 117-DR Filter Building was also a separate Waste Information Data System (WIDS) site (100-D-53).

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the

respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, niel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:5

Classification: Accepted

Names: 122-DR-1:5; 116DR Reactor Exhaust Stack; 122-DR-1 Area 5

Reclassification: Closed Out (7/1/2004)

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: Area 5 consisted of the reactor exhaust stack. Over the life of the Large Sodium Fire Facility (LSFF) there were two routes for exhaust to take before entering the reactor exhaust stack. The first route was through the HEPA filters which had a 99.95 percent efficiency rating. The second route was through the submerged gravel scrubber which had an efficiency rating of approximately 99 percent. It was expected that there were no measurable deposits of residue from LSFF operation within the stack. The 116-DR Reactor Exhaust Stack also has a separate Waste Information Data System (WIDS) site (132-DR-2).

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design

Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, ninel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:6

Classification: Accepted

Names: 122-DR-1:6; 116-DR-8 Crib (RCRA Action);
122-DR-1 Area 6

Reclassification: Closed Out (10/1/1996)

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: Area 6 consists of the 116-DR-8 Crib meeting RCRA requirements. The crib was originally used from 1960 to 1964 to percolate low-level waste drainage from the 117-DR Building seal pits. When used for the Large Sodium Fire Facility (LSFF), the 116-DR-8 Crib received only water reported not to have been corrosive (the pH level was less than 12.5). This area is considered closed for the purposes of Washington Administrative Code (WAC) 173-303-610. Any contamination associated with Area 6 will be remediated in accordance with the 100-HR-3 RFI/CMS process. The 117-DR Seal Pit Crib is documented in WIDS as two separate sites.

The first site, 122-DR-1:6, which is part of the Large Sodium Fire Facility, a RCRA TSD, and has been closed for hazardous/dangerous constituents. The second site, 116-DR-8, which represents the radioactive constituents remaining at the site will be addressed under CERCLA .

Location: The unit is located south of the exclusion area fence and directly east of the 118-DR-1 Burial Ground.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 122-DR-1:7

Classification: Accepted

Names: 122-DR-1:7; Outdoor Storage Area; 122-DR-1 Area 7

Reclassification: Closed Out (10/1/1996)

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: Area 7 consists of the area to the north and west of the 117-DR HEPA filter building. The burn pans used in the alkali metal fires were sometimes stored in this area. Six soil samples, three random and three authoritative, were collected for this site. The samples were number BOG979 through BOG984. All samples were well below the Hanford Site background 95% thresholds for both lithium and sodium in soil (see WHC-SD-EN-TI-307 for sample results). The area was clean closed.

Location: Area 7 consists of the area to the north and west of the 117-DR HEPA filter building.

The SubSite is Part Of:

Code: 122-DR-1

Names: 122-DR-1; 100-D-51; 105-DR Large Sodium Fire Facility; 105-DR Sodium Fire Facility

Code: 132-DR-2

Classification: Accepted

Names: 132-DR-2; 116-DR Reactor Exhaust Stack

Reclassification: Interim Closed Out (3/4/2004)

Type: Stack

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1986

Description: The stack has been demolished. The unit was a monolithic, reinforced concrete structure with a maximum wall thickness of 0.46 meter (1.5 feet) at the base. It rested on a double octagon-shaped base that extended 5.3 meters (17.5 feet) below grade. An opening at the base provided access to its interior portion. This opening was fitted with a steel door.

Location: The unit was located on the south side of the 105-DR Building.

Related Sites/ Structures: Originally, 105-DR exhaust air flowed directly from the 105-DR to the exhaust stack. Following completion of the confinement project in 1960, the exhaust air was diverted to the 117-DR Filter Building, via underground ducts, prior to release through the stack.

Waste Type: Chemicals

Waste Description: Until 1964 the unit discharged exhaust air from the 105-DR Building. Since 1972, the unit was used to support operations relating to the 105-DR Large Sodium Fire Facility (122-DR-1). The interior of the unit contains an unknown quantity of low-level radioactive materials.

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, niel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

Code: 100-F-1	Classification: Not Accepted
Names: 100-F-1; 100-FR-2 Depression	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date:
Status: Inactive	End Date:
Description: The site is a depression surrounded by a post and chain barricade with warning signs stating "DANGER, KEEP AWAY." The surface of the depression is grass-covered. The site may be the location of a valve box along the raw water line that went from 190-C to the Pump House for the Radiological Science Laboratory Building and the Grazing Plot. During the April 1999 visit, metal and wooden stakes were observed on the ground and a soil gas probe was visible.	

Location: 30.5 meters (100 feet) north of the northwest corner of 118-F-1 Burial Ground.

Process Description: The GPR survey correlates fairly well with drawing SK-1-2847, High Purity Water System for 100F Biology. A raw water line tees from the raw water exiting from 190-C, goes south along the outside edge of the 105-F exclusion area fence, along the railroad track and above the north edge of the 118-F-1 Burial Ground and over to a pump house that supplied water to the Radiological Science Laboratory Building and Grazing Plot. According to the Technical Baseline Document, WHC-SD-EN-TI-169, the Grazing Plot (10-acres) was used to pasture pregnant animals and animals too young for experiments. The document goes on to state that no contaminants are known to exist at this location.

Related Sites/ Structures: The site was probably related to the 190-C Building, the Radiological Science Laboratory Building and the Grazing Plot.

Code: 100-F-5 **Classification:** Accepted

Names: 100-F-5; 1717-F Building Drywell **Reclassification:** Rejected (7/29/1997)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 1.2 meters (48 inches) diameter french drain (drywell). The drywell was constructed per Hanford Standard AC-5-3 and was surrounded by steel post and chain barrier. The purpose of the site was to receive boiler steam condensate from blowdown valves. A 10 centimeter (4 inches) pipeline connected the boilers (2) of the 1717-F Building to the drywell.

Location: The site is approximately 26 meters (85 feet) west of the 1717-F Building.

Related Sites/ Structures: The site was related to the 1717-F Building (Combined Shops). The site is associated with site 100-F-32, 1717-F Building Underground Fuel Oil Tanks.

Waste Type: Steam Condensate

Waste Description: The unit received steam condensate from automatic blowdown valves connected to the boilers. The steam generation system for 1717-F was a once through system. The condensate would have received some residual salt (sodium chloride) from water softeners. Backflush from the water softeners went to the sanitary sewer system. Review of the drawings shows no indication of any additional chemical treatment during water softening. Steam condensate was not recycled to the boiler system. Drawing H-1-14566, Steam Generating Equipment Installation Piping Diagrams, shows the steam generation equipment including, the boilers, automatic blow down valves, piping to the drywell, and the drywell.

Code: 100-F-6 **Classification:** Not Accepted

Names: 100-F-6; 1716 FA Fuel Tank and Pump **Reclassification:** None

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:** 1/1/1945

Description: The site is the 1716-FA Automotive Repair Shop gas tanks and gas pumps. Hanford Drawing M-2938 shows the location of the shop and gas tanks. During the April 1999 visit, a survey grade GPS was used to locate the site based on its mapped coordinates. The surrounding area was covered with cobbles and rocks with sparse vegetation, primarily rabbitbrush and grasses. Some debris was visible, including metal, concrete chunks and fragments of automobile headlights or taillights. An approximately 3.7 meter (12 foot) tall pile of soil and rock was visible to the south and appeared to be old borrow material.

Location: The site is located north of the western half of the 100F Coal Storage Area.

Related Sites/ Structures: The site was related to the 1716-FA Automotive Repair Shop.

Waste Type: Oil
Waste Description:

Code: 100-F-8 **Classification:** Accepted
Names: 100-F-8; French Drains Near 105-F Gate **Reclassification:** Rejected (7/29/1997)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The two french drains are constructed of 91 centimeter (36 inch) concrete pipe of unknown length buried to a depth which places their upper surfaces a few inches above grade.

Location: The french drains are near the main (north) entrance gate to the 105-F Reactor Building security fence. The first drain is about 22.9 meters (75 feet) south of the gate and the second is in line with the first and about 7.6 meters (25 feet) further south.

Waste Type: Water
Waste Description:

Code: 100-F-17 **Classification:** Not Accepted
Names: 100-F-17; 108-F Chemical Pump House; Chemical Storage Tanks at 108-F; Chemicals Used at 108-F Building **Reclassification:** None
Type: Storage Tank **Start Date:**
Status: Inactive **End Date:**

Description: The Pump House and storage tanks have been removed. The site was a four story steel framed building with concrete block walls, concrete foundation and floors, and a concrete tile roof with a tar and gravel surface. The entire building was in poor condition. The chemical storage tanks that were originally located on the west side of the building have been removed. A loading dock extends from the south end of the east wall. A gas dock is attached to the south end of the building. Abandoned equipment and debris is scattered around the southwest corner of the building.

Location: The 108-F building is located approximately 100 meters (330 feet) east of the 105-F Reactor Building.

Process Description: The 108-F was originally built to be used as a chemical pump house to hold and pump various chemicals needed in reactor water treatment and reactor purging (internal cleansing). It contained many holding and mixing tanks and pumps, along with storage bins for dry materials, conveyor systems, hoppers, and power shovels. Shortly after the F Reactor began operation, it was determined that such treatment would not be required and cooling water treatment could be performed elsewhere in the systems. The 108-F building was then converted to be used as a biological laboratory where the effects of radiation and contamination on plant and animal life were studied

Waste Type: Asbestos (friable)
Waste Description:

Description:

Code: 100-F-21 **Classification:** Not Accepted**Names:** 100-F-21; Exclusion Area; Grounds Surrounding Deactivated Areas **Reclassification:** None**Type:** Unplanned Release **Start Date:****Status:** Inactive **End Date:****Description:** The grounds within the 100-F exclusion area that are not part of other waste sites.

Code: 100-F-28 **Classification:** Accepted**Names:** 100-F-28; Septic Tank and Drainfield **Reclassification:** Rejected (1/29/2003)**Type:** Septic Tank **Start Date:****Status:** Inactive **End Date:****Description:** This site was a septic tank and its drainfield for an isolated office building, discovered on a 1954 drawing. No septic tank or markers were found during a field investigation at this site. The tank's mapped location placed it within an area that was excavated to a depth of between 3.1 and 4.6 meters (10 and 15 feet) for fill material. The area was lightly vegetated with cheatgrass and shrubs.**Location:** The site was located northwest of the 182-F Reservoir, east of the powerlines, approximately 50 meters (160 feet) west of the roadway, and 180 meters (590 feet) south of the perimeter road.**Waste Type:** Sanitary Sewage**Waste Description:** The unit would have received sanitary sewage. Because the unit appears to have supported only one building and that building is not near any contaminated facilities, it is highly unlikely that it received any radiological contamination.

Code: 100-F-30 **Classification:** Not Accepted**Names:** 100-F-30; 144-F Drywell **Reclassification:** None**Type:** French Drain **Start Date:****Status:** Inactive **End Date:****Description:** The site is a drywell that was observed on drawing H-1-14123 on the south side of 144-F. During a site investigation on 1/2/97, no evidence of a drywell was visible. During the April 1999 visit, a survey grade GPS was used to locate the site based on its mapped coordinates. No evidence of the site was found at this point. The area is sparsely covered with rabbitbrush and grasses.**Location:** The site is located in the 100-F Area within the former Pacific Northwest Laboratory's Experimental Animal Farm site. The 144-F building was located between the 141-C building and the 107-F Retention Basin. The drywell was located approximately 30 meters (100 feet) west of the 107-F Retention Basin Fence.**Process Description:** The dry well received rainwater from the roof of the 144-F Building. See drawing H-1-14123, Facilities for Radiation Inhalation Studies.**Waste Type:** Stormwater Runoff**Waste Description:** The drywell received stormwater from the roof of the 144-F building.**Description:**

Code: 100-F-32 **Classification:** Not Accepted
Names: 100-F-32; 1717-F Underground Fuel Oil Tanks **Reclassification:** None
Type: Storage Tank **Start Date:**
Status: Inactive **End Date:**
Description: The site is three underground fuel oil storage tanks. Each tank had a capacity of 94,625 liters (25,000 gallons). Each tank was 10.7 meters (35 feet) long and 2.4 meters (8 feet) in diameter. Pipelines ran to the 1717-F Building (Combined Shops) through a pump pit immediately east of the tanks.
Location: The three tanks are located approximately 33.5 meters (110 feet) west of 1717-F Building.
Related Sites/ Structures: The site was related to 1717-F Building. The site is associated with 100-F-5, 1717-F Building Drywell.

Code: 100-F-40 **Classification:** Accepted
Names: 100-F-40; Animal Farm Surface Impoundment **Reclassification:** Rejected (2/28/2002)
Type: Surface Impoundment **Start Date:**
Status: Inactive **End Date:**
Description: This site, a pair of impoundments and the associated ditches, is no longer visible in the field. It was discovered on aerial photos from 1965, and consisted of two surface impoundments, one covered with tumbleweeds and the other new and unvegetated. The older impoundment has a slightly meandering ditch coming to its northern end from the animal farm buildings. This ditch was dry in the September 1965 photo. A straight ditch, with water in it in the September 1965 photo, runs to the northern side of the northern impoundment, also coming from the same animal farm buildings.
Location: The impoundments are north of the 116-F-9 Trench and east of the animal farm. They are on the west side of, and adjacent to, the 100-F Area perimeter road. The approximate coordinates for the centroid of the impoundments are 147970 N and 5811115 E.
Waste Type: Animal Waste
Waste Description: Samples collected in April 2001 determined the surface ponds held only uncontaminated animal waste resulting from pen cleaning.

Code: 100-F-41 **Classification:** Accepted
Names: 100-F-41; 100-F Clean Water Pipelines; 100-F Service Water Pipelines **Reclassification:** Rejected (2/8/2007)
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**
Description: The site and all four subsites have been reclassified to Rejected. The site included underground pipelines used to transport raw, fire, export, filtered, and sanitary water from the river pump house, to 100-F Area facilities, including the water treatment facilities and fire hydrants. This site does not include lines within buildings, process or septic sewer lines, chemical transfer pipelines, pipelines that carried water treated with sodium dichromate, or pipelines that were downstream from the reactor building, i.e., those lines that carried cooling water from the reactor to the retention basin, Lewis Canal and/or the river. A total of four (4) major pipelines and (43) smaller pipelines were identified as being associated with the 100-F-41 Service Water Pipelines site.

Location: The pipes were across the 100-F Area, from the 181-F intake structure to the water treatment facilities, reactor (fire and potable water, not reactor cooling water), strontium gardens, south to the fire and patrol headquarters near the 1701-F gatehouse, west to join with the export water line from the 100-D Areas, and east to the animal farm area.

Related Sites/ Structures: The clean water and fire water pipelines ran to or near virtually all the facilities at the 100-F Area. Pipeline sites in the 100-F Area include the Process Effluent Pipelines in site 100-F-19, the Water Treatment Pipelines in site 100-F-26, the river effluent lines are site 100-F-39, the clean water pipelines were 100-F-41, the experimental animal farm pipelines in site 100-F-29 and miscellaneous pipelines in 100-F-44. The other pipeline sites at the 100-F Area are 100-F-19 (Reactor Cooling Water Effluent); 100-F-26 (Water Treatment Plant Process Sewers); 100-F-29 (Experimental Animal Farm Process Sewers), and 100-F-39 (River Effluent Pipelines).

Waste Type: Equipment

Waste Description: The waste is the old buried pipes from the clean water pipeline system.

No Contaminants of Potential Concern (COPC's) are identified for underground water service lines. Asbestos-containing wrapping on underground water lines were determined to be neither a hazardous nor a dangerous material of construction (Unit Managers Meeting Minutes for July 2005).

This Site has the Following SubSites:

Code: 100-F-41:1

Names: 100-F-41:1; North/South 4-Inch Steel Pipeline North of 183-F

Code: 100-F-41:2

Names: 100-F-41:2; East/West 2-Foot Steel Pipeline Connected to 190-F

Code: 100-F-41:3

Names: 100-F-41:3; North/South 4-Inch Pipeline East of 1704-F

Code: 100-F-41:4

Names: 100-F-41:4; East/West 4-Inch Steel Pipeline at West End of 115-F

Code: 100-F-41:1

Classification: Accepted

Names: 100-F-41:1; North/South 4-Inch Steel Pipeline North of 183-F

Reclassification: Rejected (2/8/2007)

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite has been reclassified to Rejected.

The subsite consisted of a north-south oriented; 10 centimeter (4 inch) steel pipeline segment of unknown length approximately 0.6 meters (2 feet) below ground surface. It was identified during an excavation for confirmatory sampling. The line was broken, when sampling was completed the steel pipe was returned to the test pit prior to backfilling with original material. The pipe had no insulation or wrapping of any kind. No samples were collected of the pipe or pipe interior. Drawing H-1-12436 shows a north-south 10 centimeter (4 inch) diameter Fire & Sanitary Water Line.

Location: The pipeline segment was north of the 183-F Filter Building and south of the 182-F Reservoir, and is defined by the following coordinates: N148161 E580436, N148152 E580436, N148152 E580483, and N148112 E580483.

Waste Type: Not Specified

Waste Description: The waste is the buried lines from the clean water pipeline system. These pipelines are not

Description: CERCLA hazardous waste.

The SubSite is Part Of:

Code: 100-F-41

Names: 100-F-41; 100-F Clean Water Pipelines; 100-F Service Water Pipelines

Code: 100-F-41:2

Classification: Accepted

Names: 100-F-41:2; East/West 2-Foot Steel Pipeline
Connected to 190-F

Reclassification: Rejected (2/8/2007)

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite has been reclassified to rejected.

The subsite consisted of an east-west oriented, 0.6 meter (2 feet) steel pipeline segment identified as approximately 1.8 meters (6 feet) below ground surface during an excavation for confirmatory sampling at 100-F-26:4. The pipe had no insulation or wrapping of any type. No samples were taken. This pipe was later identified on drawings H-1-12436 and H-1-12377 as a raw water line. The caption to a photo taken 12/15/04 indicates two diameters, [0.6 meters (24 inches) diameter cast iron raw water pipeline.

Location: The 100-F-41:2 pipeline segment was connected to the 190-F building foundation on the east side at coordinates N147736 E580503, and continued to N147736 E580611, N148162 E580610, and N148162 E580482.

Waste Type: Not Specified

Waste: The waste is the buried lines from the clean water pipeline system. These pipelines are not

Description: CERCLA hazardous waste.

The SubSite is Part Of:

Code: 100-F-41

Names: 100-F-41; 100-F Clean Water Pipelines; 100-F Service Water Pipelines

Code: 100-F-41:3

Classification: Accepted

Names: 100-F-41:3; North/South 4-Inch Pipeline East of
1704-F

Reclassification: Rejected (2/8/2007)

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite has been reclassified to rejected.

During excavation at the 100-F-26:9 sanitary sewers for collection of confirmatory samples, a north-south oriented, 10 centimeter (4 inch) pipeline was discovered approximately 1.2 meters (4 feet) below ground surface. it was intact and had no insulation or wrapping.

Construction drawing H-1-14562 showed a 7.6 centimeter (3 inch) sanitary water line trending south to north 3 meters west of the junction box sampling location. No depth was indicated on the drawing. The 1.1 centimeter (3 inch) sanitary water line shown on the construction drawing was within 1 meter of the estimated location of the discovered pipe. No reference to pipe diameter was documented to explain the size discrepancy indicated between logbook and the drawing. The discrepancy in pipeline size between the historic drawing and field observations was attributed to erroneous field measurements or the use of a larger diameter pipeline during

construction.

Location: The 100-F-41:3 pipeline was located east of the south corner of the 1704-F building beginning at coordinates N 147793 E 580672, and continuing to N 147793 E 580675 and N 147783 E 580675.

Waste Type: Not Specified

Waste Description: The waste is the buried lines from the clean water pipeline system. These pipelines are not

CERCLA hazardous waste.

The SubSite is Part Of:

Code: 100-F-41

Names: 100-F-41; 100-F Clean Water Pipelines; 100-F Service Water Pipelines

Code: 100-F-41:4

Classification: Accepted

Names: 100-F-41:4; East/West 4-Inch Steel Pipeline at West End of 115-F

Reclassification: Rejected (2/8/2007)

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of an east-west oriented, 10 centimeter (4 inch) steel pipeline approximately 1 meter (3 feet) below ground surface. The segment was identified during an excavation for confirmatory sampling. The steel pipe appeared to have no insulation or wrapping of any type. No samples were taken from the pipe. The pipe was left intact and the test pit was backfilled with the removed material.

Construction drawing H-1-12367 shows a cast iron (CI) fire and sanitary water line near the location of the discovered pipeline; and BHI-01504 indicates a 10 centimeter (4 inch) cast iron service water pipe exits the west side of the 115-F Building.

Location: It is located at the west end of the 115-F Building beginning at N147582 E580314, and continuing to N147582 E580299 and N147643 E580299.

Waste Type: Not Specified

Waste Description: The waste is the buried lines from the clean water pipeline system. These pipelines are not

CERCLA hazardous waste.

The SubSite is Part Of:

Code: 100-F-41

Names: 100-F-41; 100-F Clean Water Pipelines; 100-F Service Water Pipelines

Code: 116-F-13

Classification: Not Accepted

Names: 116-F-13; 1705-F Experimental Garden French Drain

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site has been described as a french drain. A review of documents and drawings has found no indication that a french drain ever existed at the 1705-F Experimental Garden. This site appears to be confused with both the 146-FR fish rearing ponds and the 1607-F6 septic tank.

Location: The 1705-F Experimental Garden was part of the Experimental Animal Farm which was located in the northwest corner of the 100F area. The garden was north of the 141-F building

(demolished) and east of the 1705-F building (demolished).

Related Sites/ Structures: The site is associated with 100-F-34.

Code: 118-F-9	Classification: Accepted
Names: 118-F-9; PNL Rad Site	Reclassification: Rejected (8/24/2006)
Type: Burial Ground	Start Date:
Status: Inactive	End Date:

Description: The site has been reclassified to Rejected based on analytical data and minor excavation. The site consisted of one trench running east to west. It has been backfilled and vegetation has re-established itself after the remediation. The site was not marked or posted.

Location: The site was located south of and adjacent to the southeast corner of 126-F-1.

Process Description: The site was believed to have received undocumented miscellaneous solid wastes from animal research studies at the Experimental Animal Farm.

Related Sites/ Structures: The site was associated with the 100-F Experimental Animal Farm. The site was identified as being in the same area as the 126-F-1 Ash Pit and the 100-F-20 burial ground.

Code: 132-F-2	Classification: Not Accepted
Names: 132-F-2; 132-F-2 Inhalation Laboratory; 144-F; 144-FB	Reclassification: None
Type: Laboratory	Start Date:
Status: Inactive	End Date:

Description: The site was a laboratory that was part of the Experimental Animal Farm. The building has been demolished. It was a rectangular one-story, 302 square meter (3,250 square foot), concrete block building. The building contained an office, laboratories, and indoor and outdoor animal runs. During the April 1999 visit, a survey grade GPS was used to locate the site using its mapped coordinates. A wooden stake was found in the ground at those coordinates. No evidence of the site was found. However, the area had been disturbed by heavy equipment, concrete chunks were visible and vegetation was sparse.

Location: The building was located south of the 141-F (132-F-1) sheep barn and east of the 141-C hog barn.

Process Description: The laboratory was used for particulate exposure experiments and for a series of studies on the effects of ionizing radiation on dogs. Between 300 and 400 beagles were housed at the nearby dog kennels during the studies. The primary isotopes used for the dog studies were plutonium-239 and radium-226.

Related Sites/ Structures: Effluent from the lab site went to the 100-F-31 Septic System, south of the building.

Code: 100-H-6	Classification: Not Accepted
Names: 100-H-6; Suspect Waste Site: Contaminated Ramp	Reclassification: None
Type: Unplanned Release	Start Date:

Status: Inactive

End Date:

Description: The site is a contaminated concrete ramp connected to the 105-H Reactor Building. The concrete ramp is enclosed in heavy wire mesh and is posted as a "Contamination Area".

Location: The ramp is located on the east side of the 105-H reactor building.

Release Description: Site personnel believe the ramp may have become contaminated from moving contaminated material out of the reactor basement level. They believe the wire mesh was installed to prevent tumbleweeds from accumulating in the ramp area.

Code: 100-H-15

Classification: Not Accepted

Names: 100-H-15; 100-H-25; Possible Septic Tank & Tile Field

Reclassification: None

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: The site appears in a photograph taken in 1950 as a rectangular site enclosed by a white rail fence. In the photograph, a line of disturbed soil is visible extending from the east end of the fenced area to a point near the southeast corner of the 151-H Electrical Substation. It appears to terminate at a manhole associated with the 1607-H1 septic tank.

Location: The site is located east of the southeast corner of the 151-H electrical substation site, at or very near the location of 118-H-2 Burial Ground (see Site Comment).

Code: 100-H-16

Classification: Accepted

Names: 100-H-16; 184-H Brine Pit; 184-H Salt Dissolving Pit and Brine Pump House; H Area Power House Brine Pit

Reclassification: Rejected (8/12/1997)

Type: Sump

Start Date: 1/1/1948

Status: Inactive

End Date:

Description: The salt dissolving pits and brine pump pit were part of a single below-grade concrete structure that provided brine for the 184-H Powerhouse. No evidence of the structure can be seen today. The salt dissolving pits each had inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.8 meters (9.25 feet) tall. They had a design high water line 2.4 meters (7.75 feet) from the pit bottom. An overflow slot that connected the two dissolving pits was located 0.3 meters (1 foot) above the high water line. The bottom of each pit was filled with a 12.7 centimeter (5 inch) layer of 1.3 to 2.6 centimeter (1/2 to 1 inch) gravel topped by a 17.8 centimeter (7 inch) layer of 0.3 to 0.6 centimeter (1/8 to 1/4 inch) gravel. The dissolving pits each had a 2.4 meter (8 feet) by 0.9 meter (3 feet) opening at the top for receiving salt. Each pit had a capacity of 23,600 kilograms (52,000 pounds) of salt. The brine pump pit is located adjacent to the two salt dissolving pits. The pit was 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.1 meters (7 feet) deep. It held two pumps and associated piping (all brass) for the brine system. The floor of the pump pit sloped toward a 46 by 46 by 46 centimeters (18 by 18 by 18 inches) sump in a corner. A sump pump discharged to a nearby french drain (100-H-32).

Location: The site is located south of 184-H and just north of the railroad tracks.

Process Description: The brine was used to regenerate the zeolite ion exchange demineralizers that were part of the powerhouse water treatment system.

Related Sites: The site is associated with 184-H Power House and the 100-H-22 French Drain

**Related Sites/
Structures:**

Waste Type: Demolition and Inert Waste
Waste Description: The site was probably demolished in place. No documentation has been located related to cleanup. It is not known if salt cake was left in the structure.

Code: 100-H-18 **Classification:** Not Accepted
Names: 100-H-18; Undocumented Unplanned Airborne Release: Stack Emission No. 1 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1955
Status: Inactive **End Date:**
Description: There are no posted areas related to this release.
Location: Affected areas included the 100-H Area and the Wahluke Slope. Figure 3 in HW-54636 shows the particulate density with the 100-H Area.
Release Description: The 105-H stack emitted approximately 0.6 curies of filterable gross beta contamination on May 3, 1955, when two ruptured slugs were removed from the reactor. The amount of material released was calculated based on the ground deposition.
Waste Type: Process Effluent
Waste Description: The waste consisted of airborne radioactive particulates released through the 105-H stack.

Code: 100-H-19 **Classification:** Not Accepted
Names: 100-H-19; Undocumented Unplanned Airborne Release: Stack Emission No. 2 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1955
Status: Inactive **End Date:**
Description: There are no posted areas related to this site.
Location: Affected areas included 100-H and parts of the 600 Area to the west and south. Figure 4 in HW-54636 shows the particulate density within the 100-H Area. Figure 5 in HW-54636 has a larger scale and shows the particulate density over the greater area.
Release Description: On November 1, 1955, a ruptured slug burned briefly during discharge from the reactor. Approximately 0.8 curie of filterable gross beta contamination, mostly barium and rare earth plus yttrium, was emitted from the 105-H stack. The south one-third portion of the 100-H Area was found contaminated with concentrations as high as 12 particles per 9.3 square meters (100 square feet). The contamination level was 1,000 to 10,000 counts/minutes, with isolated particles as high as 1 100 millirads/hour. One particle, found near the 100-H Gatehouse, had a dose rate of 700 millirads/hour. The contamination was found to have spread south of 100-H Area, covering an area of approximately 18.1 square kilometers (7 square miles).
Waste Type: Process Effluent
Waste Description: The waste consisted of airborne radioactive particulates released through the 105-H stack.

Code: 100-H-20 **Classification:** Not Accepted

Names: 100-H-20; Undocumented Unplanned Release: Swallow Nests and Droppings **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1956

Status: Inactive **End Date:**

Description: There are no posted areas related to this release.

Location: The release contaminated an area extending from around the 100-H water tower over a flight path toward the White Bluffs. Figure 6 in HW-54636 shows the levels of contamination that were detected within the 100-H Area.

Release Description: After isolated cases of personnel and vehicle contamination were detected on May 15, 1956, it was discovered that swallows were making nests out of contaminated mud taken from the 107-H Liquid Waste Disposal Trench. The contaminated mud was being dropped around the 100-H water towers and at scattered locations over the flight path to the White Bluffs across the Columbia River. Concentrations ranged from 0 to 6 particles per 9.3 square meters (100 square feet), with a maximum recorded reading of 150 millirads/hour.

Related Sites/Structures: The release is related to the 107-H Liquid Waste Disposal Trench (116-H-1) and the 100-H Water Towers.

Waste Type: Soil

Waste Description: The 107-H Liquid Waste Disposal Trench received highly contaminated cooling water from the 107-H Retention Basin. The mud used by the swallows would have contained radioactive contamination from fuel element rupture.

Code: 100-H-26 **Classification:** Not Accepted

Names: 100-H-26; Exclusion Area; Grounds Surrounding Deactivated Areas **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The grounds within the 100-H exclusion area that are not part of other waste sites.

Code: 100-H-27 **Classification:** Not Accepted

Names: 100-H-27; 100-H Area Patrol Headquarters Storm Runoff Ditch **Reclassification:** None

Type: Ditch **Start Date:**

Status: Inactive **End Date:**

Description: The site is a ditch that receives stormwater runoff from a nearby asphalt parking areas. The ditch runs northward from a 15 centimeter (6 inch) vitrified clay pipe that discharged at a headwall. A site visit in March 1999 found the ditch almost completely filled with tumbleweeds. The ditch is not marked or posted.

Location: The site is located southeast of the 105-H Reactor facility. It is west of and adjacent to the 1607-H3 septic tank and tile field.

Waste Type: Stormwater Runoff

Waste Description:

Code: 100-H-32 **Classification:** Accepted
Names: 100-H-32; 184-H Brine Pit French Drain **Reclassification:** Rejected (1/30/2003)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: There is no visual evidence of a french drain at this location. It was likely removed with the associated brine pit (100-H-16).
Location: The french drain site was located on the northeast corner of the 184-H Brine Pit (100-H-16), west of the 184-H Power House.
Process Description: The site is a french drain that received sump drainage from the 184-H Brine Pit (100-H-16). The drain was constructed of 61-centimeter (24-inch) diameter pipe. The french drain was not visible in the field during investigations for the 100-H Area Technical Baseline Report (BHI-00175). The french drain would have received only brine water.
Related Sites/ Structures: This site is associated with the 100-H-16 Brine Pit.
Waste Type: Chemicals
Waste Description: The french drain received any water or brine that collected in the 184-H Brine Pit Sump. The liquid would be expected to have contained high concentrations of sodium chloride (salt).

Code: 100-H-39 **Classification:** Accepted
Names: 100-H-39; Orphan Site H-007; Possible Thimble Pit Locations; Potential Thimble Burial Site **Reclassification:** Rejected (5/3/2010)
Type: Trench **Start Date:**
Status: Inactive **End Date:**
Description: The site is four possible thimble pit or trench locations. Historical documents indicate areas that may have been used to bury thimbles or materials related to the removal of thimbles in 100-H Area.
Location: Four potential burial sites were determined from document and photographic research. Location one is at Ground position system (GPS) coordinates (north end) E577777, N152214, (south end) E577783, N152175, (east side) E577790, N152196. The west side is the railroad tracks. Location two is approximate coordinates E577752.8, N152287.5 and E577752.8, N152257.0. Location three is coordinates E577758, N152188. Location four is the north and south centroid coordinates of the a trench - E577737.6, N152458.9 and E577737.3, N152433.
Related Sites/ Structures: This potential thimble burial site is associated with 118-H-5 and 100-H-2.
Waste Type: Equipment
Waste Description: Radioactive Thimbles may be buried at these locations. The 100-H-2 waste site is an analogous site. There are two types of radioactive waste associated with Thimbles; neutron activated steel and aluminum material containing cobalt-60 and surface contaminated waste primarily with zinc-65.

Code: 100-H-47 **Classification:** Accepted
Names: 100-H-47; 1717-H Geophysical Anomaly; Orphan Site H-015; Possible UST **Reclassification:** Rejected (2/22/2010)

around three sides and an asphalt-covered berm on the north side for tank truck unloading. The basins were completely demolished in the fall of 1996. The site was backfilled and re-vegetated in the spring of 1997. The site is marked. No radiological posting is associated with the backfilled basin.

Location: The site is located north of the 105-H Reactor and just north of the east 183-H Clearwell (WIDS Site 126-H-2).

Process Description: Originally, the basins were built as part of the 100-H water treatment structures. Approximately 1.6E+06 kilograms (3.6E+06 pounds) of waste per year were treated by solar evaporation. The water treatment basins received a maximum of approximately 1.5E+06 liters (400,000 gallons) of waste a year. The basins had a tank treatment design capacity of 2,650 liters (700 gallons) per day treated by evaporation and a tank storage design capacity of 8.2E+06 liters (2.2E+06 gallons), a collective value representing all four basins.

Related Sites/ Structures: 100-H-33, 183-H Solar Evaporaton Basins Radionuclide Components.

Waste Type: Process Effluent

Waste Description: The facility received routine and nonroutine wastes. The routine wastes consisted of spent acid etch solutions (primarily nitric, sulfuric, hydrofluoric, and chromic acids) generated by the Nuclear Fuel Fabrication process. These acidic solutions were reacted with excess sodium hydroxide before being transported to the 183-H Basins. Metal constituents include copper, silicon, zirconium, nickel, aluminum, chromium, manganese, and uranium, which were in the form of precipitates. Nonroutine wastes consisted of unused chemicals and spent solutions from miscellaneous processes. The waste has been designated an Extremely Hazardous Waste (EHW) because of toxicity, waste code (WT01). The basins also received various nonradioactive waste (listed discarded chemical products), resulting in designation for cyanide (P030), vanadium pentoxide (P120), and formic acid (U123). Additionally, Basin #2 was designated EP Toxic because of the presence of chromium (D007). More detailed descriptions of these wastes and quantities are contained in DOE/RL 88-04, Interim Status Closure/Post-Closure Plan 183-H Solar Evaporation Basins.

Closure Info: The basins were cleaned up in late 1995 with all detectable contamination removed, packed and disposed. Demolition activities were 80% complete as of January 1996. Demolition wastes were disposed of in the adjacent 183-H Clearwells. By the fall of 1996, the basins had been completely demolished. The footprint of the basins was released from radiological posting after 0.6 meters (2 feet) of soil was removed. Chemical contaminants were identified and removed to a maximum depth of 6.1 meters (20 feet). The site was backfilled and revegetated in the spring of 1997.

Clean closure of the site was not achieved due to levels of fluoride and nitrate, remaining in the soil below the excavated 4.6 meter (15 foot), that are above the Method B cleanup levels of the Model Toxics Control Act (MTCA), Washington Administrative Code (WAC) 173-340. Therefore, the unit was closed under the partial closure option with specified remedial measures provided under postclosure care. The modified closure certification was accepted by the State of Washington Department of Ecology on May 13, 1997.

Remedial measures included the placing of a vapor barrier at the bottom of the excavation and replacing the excavated soils with clean, compacted backfill. Postclosure groundwater monitoring will continue at the unit under WAC 175-303-645 final status permit, compliance monitoring program. Corrective actions for the contaminated groundwater attributable to 183-H will be coordinated with remedial actions for the 100-HR-3 operable unit pursuant to CERCLA.

Radiation surveys of the excavation after the rubble was removed was completed on 2/15/96

with a "Radtractor." Four alarms during the survey were checked out with hand-held instruments and verified to be false alarms. Final disposition of the radioactive component of the TSD will be addressed as a separate site through the RCRA Past Practice process.

Code: 126-H-1 **Classification:** Accepted

Names: 126-H-1; 184-H Powerhouse Ash Pit; 188-H Ash Disposal Area **Reclassification:** Rejected (6/25/1998)

Type: Coal Ash Pit **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1965

Description: The 126-H-1 site is a large ash disposal pit and ash pile. The ash pit is approximately 76.2 meters (250 feet) long, 76.2 meters (250 feet) wide and 3.7 meters (12 feet) deep. The pit is divided into two parts by a 2.4 meter (8 foot) berm that runs east to west. The floor of the ash pit is evenly covered with ash and cinder. Some light vegetation is evident. An ash pile is located just south of the pit. The pile measures approximately 25 meters (82.0 feet) by 60 meters (196.9 feet).

Location: The site is located northwest of the 105-H Reactor and west of the where the 184-H Powerhouse was located.

Process Description: Coal ash from the 184-H powerhouse was mixed with raw river water and sluiced in slurry to the ash pit via a 20 centimeter (8 inch) steel pipeline.

Waste Type: Ash

Waste Description: Unknown amounts of coal ash were sluiced to the pit with raw river water. Ash from other Hanford ash pits has been analyzed using the EP Toxicity Test in accordance with WAC 173-303, and no hazardous materials were found.

Code: 100-K-2 **Classification:** Accepted

Names: 100-K-2; 118-K-2; 118-K-2 Sludge Burial Ground; Burial Area **Reclassification:** Rejected (12/14/2010)

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a suspected sludge burial ground. The size of the trench was unknown. Over time, historical documentation has indicated different locations on several sketch type drawings for the burial ground.

Location: The site is located east of the 107-KE Retention Basins, between the 107-KE Retention Basins and the 100-K Perimeter Road.

Process Description: The site is a burial ground that was used to dispose of sludge from the 116-KE-4 (107-KE) and 116-KW-3 (107-KW) Retention Basins.

Related Sites/Structures: The site was related to the 107-KE and 107-KW Retention Basins.

Waste Type: Sludge

Waste Description: The site is described as having received sludge from the retention basins (107-KE and 107-KW). Although an exact inventory for this sludge trench is not available, it is analogous to the 107-B retention basin sludge trench (116-B-14). Characterization done at the 107-B trench in 1978 found an average concentration of plutonium of 0.7 picocuries per gram and an average

beta/gamma concentration of 240 picocuries per gram. The expected radionuclides include europium-155, cobalt-60, cesium-137, strontium-90 and nickel-63.

Note: DOE/RL-94-61 Appendix K (Draft A), mistakenly lists the average plutonium concentration for the 107-B Sludge Trench (116-B-14) as 0.7 curies per gram. The original report for this sampling activity lists the value as 0.7 picocuries per gram (see UNI-946, page 2-36).

Code:	100-K-7	Classification:	Not Accepted
Names:	100-K-7; 165-KE Ethylene Glycol Tanks; 165-KE-E and 165-KE-W	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1971
Description:	The site was two carbon steel underground (positioned horizontally) ethylene glycol storage tanks. One tank contained pure ethylene glycol and the other tank contained a mixture of water and ethylene glycol. The tanks supplied mixed and pure ethylene glycol for injection into process water pipelines to prevent freezing during cold periods. A pair of 10 centimeters (4 inches) fill pipelines led to a street box that contained a 10 centimeters (4 inches) cap. The street box was used for making a connection to railroad tank cars. The street box was just off the edge of a railroad spur. Today, the site is gravel covered and no evidence of the site remains.		
Location:	The unit was located directly north of the 165-KE Building, adjacent to the 165-KE Building, and west of the personnel entry door.		
Related Sites/Structures:	The site was related to the 165-KE Building, the 116-KE-5 (150-KE Heat Recovery Station), and process pipelines.		
Waste Type:	Chemicals		
Waste Description:	The waste was tanks that contained ethylene glycol.		

Code:	100-K-8	Classification:	Not Accepted
Names:	100-K-8; 165-KW Ethylene Glycol Tanks; 165-KW-E and 165-KW-W	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1970
Description:	The site was two carbon steel underground (positioned horizontally) ethylene glycol storage tanks. One tank contained pure ethylene glycol and the other tank contained a mixture of water and ethylene glycol. The tanks supplied mixed and pure ethylene glycol for injection into process water pipelines to prevent freezing during cold periods. A pair of 10 centimeters (4 inches) fill pipelines led to a street box that contained a 10 centimeters (4 inches) cap. The street box was used for making a connection to railroad tank cars. The street box was just off the edge of a railroad spur. All piping associated with these tanks utilized welded joints with threaded couplings at the top of each tank. The pipelines related to these tanks were: (1) suction line -- 2.54 centimeters (1 inch) outside diameter by 6.1 meters (20 feet) to the building; (2) -- 10.2 centimeters (4 inches) outside diameter by 6.1 meters (20 feet) to the building (165-KW-E [east] tank only); (3) vent line -- 10.2 centimeters (4 inches) outside diameter by 9.1 meters (30 feet) (including the above ground components); (4) fill connection and street box -- 10.2 centimeters (4 inches) outside diameter by 4.6 meters (15 feet) long (empty during normal operation); (5) cross tie line -- 10.2 centimeters (4 inches) by 3.05 meters (10 feet) long (empty		

during normal operation). Today, the site is gravel covered and no evidence of the site remains.

Location: The unit was located 3.05 meters (10 feet) north of the 165-KW Building and west of the personnel entry door.

Related Sites/ Structures: The site was related to 165-KW Building, 116-KW-4 (150-KW Heat Recovery Station) and process pipelines.

Waste Type: Chemicals

Waste Description: The waste was tanks that contained Ethylene glycol. The tanks had been rinsed and flushed during the shut down of the 105-KW Reactor and did not contain any fluid.

Code: 100-K-9 **Classification:** Not Accepted

Names: 100-K-9; 104-K Dry Well; 118-KE-2 French Drain (North) **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is the northernmost of two french drains at the 118-KE-2. The french drain is a 0.6 meters (2 feet) diameter steel pipe with a steel cover. It is gravel filled to grade and surrounded by a yellow wooden barricade. The steel cover is posted with a confined space sign. The adjacent area is covered with gravel and cobbles. Each side of the 118-KE-2 Horizontal Control Rod Cave floor was sloped towards a drain. The drain was designed to receive rainwater that percolated through the earth berm covering the Rod Cave. The drains helped minimize water pooling between the two semicircular steel cave sections which are anchored and grouted to the concrete floor. Drainage is routed to each of the french drains via 7.6 centimeter (3 inch) drain pipelines.

Location: The site is located 3.5 meters (11.5 feet) from the northwest side of the 118-KE-2, 105-KE Horizontal Control Rod Storage Cave.

Related Sites/ Structures: The site is related to the 118-KE-2, 105-KE Horizontal Control Rod Storage Cave (118-KE-2 Thimble Cave).

Waste Type: Stormwater Runoff

Waste Description: The inlet to this french drain is between the two semi-circular steel pipes. It received stormwater that percolated down through the earth berm covering the caves.

Code: 100-K-10 **Classification:** Not Accepted

Names: 100-K-10; 104-K Dry Well; 118-KE-2 French Drain (South) **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1953

Status: Inactive **End Date:**

Description: The site is the southernmost of two french drains at the 118-KE-2. The french drain is a 0.6 meters (2 feet) diameter steel pipe with a steel cover. It is gravel filled to grade and surrounded by a yellow wooden barricade. The steel cover is posted with a confined space sign. The adjacent area is covered with gravel and cobbles. Each side of the 118-KE-2 Horizontal Control Rod Cave floor was sloped towards a drain. The drain was designed to receive rainwater that percolated through the earth berm covering the Rod Cave. The drains helped minimize water pooling between the two semicircular steel cave sections which are anchored and grouted to the concrete floor. Drainage is routed to each of the french drains via 3 in (7.6 cm) drain pipelines.

Location: The site is located 3.5 meters (11.5 feet) from the northwest side of the 118-KE-2, 105-KE

Location: Horizontal Control Rod Storage Cave.

Related Sites/ Structures: The site is related to the 118-KE-2, 105-KE Horizontal Control Rod Storage Cave (118-KE-2 Thimble Cave).

Waste Type: Stormwater Runoff

Waste Description: The inlet to this french drain is between the two semi-circular steel pipes. It received stormwater that percolated down through the earth berm covering the caves.

Code: 100-K-11 **Classification:** Not Accepted

Names: 100-K-11; 104-K Dry Well; 118-KW-2 French Drain (North) **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is the northernmost of two french drains at the 118-KW-2. The french drain is a 0.6 meters (2 feet) diameter steel pipe with a steel cover. It is gravel filled to grade and surrounded by a yellow wooden barricade. The steel cover is posted with a confined space sign. The adjacent area is covered with gravel and cobbles. Each side of the 118-KW-2 Horizontal Control Rod Cave floor was sloped towards a drain. The drain was designed to receive rainwater that percolated through the earth berm covering the Rod Cave. The drains helped minimize water pooling between the two semicircular steel cave sections which are anchored and grouted to the concrete floor. Drainage is routed to each of the french drains via 3 in (7.6 cm) drain pipelines.

Location: The site is located on the northwest side of the 118-KW-2, 105-KW Horizontal Control Rod Storage Cave.

Related Sites/ Structures: The site is related to the 118-KW-2, 105-KE Horizontal Control Rod Storage Cave (118-KW-2 Thimble Cave).

Waste Type: Stormwater Runoff

Waste Description: The inlet to this french drain is between the two semi-circular steel pipes. It received stormwater that percolated down through the earth berm covering the caves.

Code: 100-K-12 **Classification:** Not Accepted

Names: 100-K-12; 104-K Dry Well; 118-KW-2 French Drain (South) **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is the southernmost of two french drains at the 118-KW-2. The french drain is a 0.6 meters (2 feet) diameter steel pipe with a steel cover. It is gravel filled to grade and surrounded by a yellow wooden barricade. The steel cover is posted with a confined space sign. The adjacent area is covered with gravel and cobbles. Each side of the 118-KW-2 Horizontal Control Rod Cave floor was sloped towards a drain. The drain was designed to receive rainwater that percolated through the earth berm covering the Rod Cave. The drains helped minimize water pooling between the two semicircular steel cave sections which are anchored and grouted to the concrete floor. Drainage is routed to each of the french drains via 3 in (7.6 cm) drain pipelines.

Location: The site is located on the northwest side of the 118-KW-2, 105-KW Horizontal Control Rod Storage Cave.

Related Sites/ Structures: The site is related to the 118-KW-2, 105-KE Horizontal Control Rod Storage Cave (118-KW-2 Thimble Cave).

**Related Sites/
Structures:** Thimble Cave).

Waste Type: Stormwater Runoff

**Waste
Description:** The inlet to this french drain is between the two semi-circular steel pipes. It received stormwater that percolated down through the earth berm covering the caves.

Code: 100-K-15

Classification: Not Accepted

Names: 100-K-15; 183-KW Liquid Alum Storage Tank
(West)

Reclassification: None

Type: Storage Tank

Start Date:

Status: Inactive

End Date:

Description: The site is an above-ground vertical stainless-steel storage tank mounted on a concrete base. The tank was part of a system called, The Liquid Alum System, that supplied liquid alum for water treatment. The liquid was supplied either by rail car or tank truck, as both connections are shown on the Liquid Alum System diagram in HW-24800-103. The piping and instrument identification diagram, H-1-16552, shows the pipelines, valves, and instrumentation related to the tank. During the winter, the liquid alum was pumped through heat exchangers for purpose of heating and agitating the chemicals.

Location: The site is the western-most of two alum storage tanks located approximately 15.2 meters (50 feet) from the southwest corner of the 183-KW Head House and 10.7 meters (35 feet) south of the 183-KW Chlorine Vault.

**Process
Description:** Alum was used as a coagulant in water treatment. During the season of high water turbidity, activated silica was added as an aid in coagulation. Alum was fed from the storage tank and proportioned directly into the raw water line. The proportioning pump was paced by the flow of raw water in its 91-centimeter (36-inch) raw water line and fed at 30 parts per million (ppm) at a maximum flow rate of 121,000 liters per minute (32,000 gallons per minute).

**Related Sites/
Structures:** The tank was associated with the 183-KW Head House. The 183-KW Head House was the water quality center for the entire water treatment plant. In it were the facilities for metering raw water, for chemical injection into raw, filtered, and process water, and for effluent and influent control throughout the filter plant.

Code: 100-K-16

Classification: Not Accepted

Names: 100-K-16; 183-KW Liquid Alum Storage Tank
(East)

Reclassification: None

Type: Storage Tank

Start Date:

Status: Inactive

End Date:

Description: The site is an above-ground vertical stainless steel storage tank mounted on a concrete base. The tank was part of the Liquid Alum System that supplied liquid alum for water treatment. The liquid was supplied either by rail car or tank truck, as both connections are shown on the Liquid Alum System diagram in HW-24800-103. The piping and instrument identification diagram, H-1-16552, shows the pipelines, valves, and instrumentation related to the tank. During the winter, the liquid alum was pumped through heat exchangers for purpose of heating and agitating the chemicals.

Location: The site is the eastern-most of two alum storage tanks located approximately 10.7 meters (35 feet) south of the southwest corner of the 183-KW Head House and 10.7 meters (35 feet) south of the 183-KW Chlorine Vault.

Process Description: Alum was used as a coagulant in water treatment. During the season of high water turbidity, activated silica was added as an aid in coagulation. Alum was fed from the storage tank and proportioned directly into the raw water line. The proportioning pump was paced by the flow of raw water in its 91-centimeter (36-inch) raw water pipeline and fed at 30 parts per million (ppm) at a maximum flow rate of 121,000 liters per minute (32,000 gallons per minute).

Related Sites/Structures: The tank was associated with the 183-KW Head House. The Head House was the water quality center for the entire water treatment plant. In it were the facilities for metering raw water, for chemical injection into raw, filtered, and process water, and for effluent and influent control throughout the filter plant.

Code: 100-K-20	Classification: Not Accepted
Names: 100-K-20; 183-KW Sodium Silicate Storage Tank (West)	Reclassification: None
Type: Foundation	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1964

Description: The site was the western-most of the above-ground vertical tanks that were used to store liquid sodium silicate. Initially, tank trucks supplied the chemical for the tanks. Estimating from procurement and construction drawings for the bauxite tank (Project CAI 105), the sodium silicate tanks were removed in 1964 or 1965. Following removal, the bagged dry powder form of the chemical was used. The grade-level concrete base remained following removal of the tanks. The west tank base (Sodium Silicate Tank #1) is occupied by a bauxite storage tower (silo) and transfer system.

Location: The site is the western-most of two sodium silicate storage tanks that were located southeast of the 183-KW Head House and adjacent to the sulfuric acid tanks. The western-most tank was 10.7 meters (35 feet) southeast of the 183-KW Head House.

Process Description: During the seasons of high water turbidity, activated silica solution was fed into the raw water as an aid in coagulation. The silica was activated by sulfuric acid and prepared in two open-top, flat-bottom cylindrical steel mixing tanks. Each tank was 3.5 meters (11.5 feet) in diameter and 3.35 meters (11 feet) high, and was capable of mixing a batch to supply one-half of the plant for three hours at maximum rate. The batch cycle was completely automatic and electrically controlled, with sequence operation initiated by float level. Components (sodium silicate, sulfuric acid and water), of the activated silica were measured by displacement type meters and quantities were controlled by impulse counters. After batching, the activated silica was transferred to one of four steel tanks provided within the building for storing the solution. Each tank was sized to supply one-half of the plant for five hours at maximum flow and maximum parts per million. From the storage tanks the activated silica was pumped through metering orifices before injection into the raw water stream. The quantity of activated silica injected was regulated by a control valve whose operation was calibrated so that the metered quantity was in proportion to raw water flow. HW-24800-103, Vol 2, Page 137 shows the process flow for the sodium silicate system.

Related Sites/Structures: The site was related to the 183-KW Head House.

Waste Type: Chemicals

Waste Description: The unit stored sodium silicate. While the tanks were in use, the sodium silicate was purchased and stored in liquid form.

Code: 100-K-21	Classification: Not Accepted
Names: 100-K-21; 183-KW Sodium Silicate Storage Tank (East)	Reclassification: None
Type: Foundation	Start Date:
Status: Inactive	End Date:
Description:	The site was the eastern-most of the above-ground vertical tanks that were used to store liquid sodium silicate. Initially, tank trucks supplied the chemical for the tanks. Estimating from procurement and construction drawings for the bauxite tank (Project CAI 105), the sodium silicate tanks were removed in 1964 or 1965. Following removal, the bagged dry powder form of the chemical was used. The grade-level concrete base remained following removal of the tanks.
Location:	The site is the eastern-most of two sodium silicate storage tanks that were located southeast of the 183-KW Head House and adjacent to the sulfuric acid tanks. The eastern-most tank was 4.3 meters (14 feet) northeast of the other sodium silicate tank and 4.3 (14 feet) southeast of 120-KW-3, Sulfuric Acid Tank.
Process Description:	During the seasons of high water turbidity, activated silica solution was fed into the raw water as an aid in coagulation. The silica was activated by sulfuric acid and prepared in two open-top, flat-bottom cylindrical steel mixing tanks. Each tank was 3.5 meters (11.5 feet) in diameter and 3.35 meters (11 feet) high, and was capable of mixing a batch to supply one-half of the plant for three hours at maximum rate. The batch cycle was completely automatic and electrically controlled, with sequence operation initiated by float level. Components (sodium silicate, sulfuric acid and water), of the activated silica were measured by displacement type meters and quantities were controlled by impulse counters. After batching, the activated silica was transferred to one of four steel tanks provided within the building for storing the solution. Each tank was sized to supply one-half of the plant for five hours at maximum flow and maximum parts per million. From the storage tanks the activated silica was pumped through metering orifices before injection into the raw water stream. The quantity of activated silica injected was regulated by a control valve whose operation was calibrated so that the metered quantity was in proportion to raw water flow. HW-24800-103, Vol 2, Page 137 shows the process flow for the sodium silicate system.
Related Sites/ Structures:	The site was related to the 183-KW Head House.
Waste Type:	Chemicals
Waste Description:	The unit stored sodium silicate. While the tanks were in use, the sodium silicate was purchased and stored in liquid form.

Code: 100-K-22	Classification: Not Accepted
Names: 100-K-22; 183-KE Sodium Silicate Storage Tank (West)	Reclassification: None
Type: Foundation	Start Date: 1/1/1955
Status: Inactive	End Date: 1/1/1964
Description:	The site was the western-most of the above-ground vertical tanks that were used to store liquid sodium silicate. Initially, tank trucks supplied the chemical for the tanks. Estimating from procurement and construction drawings for the bauxite tank (Project CAI 105), the sodium silicate tanks were removed in 1964 or 1965. Following removal, the bagged dry powder form of the chemical was used. The grade-level concrete base remained following removal of the tanks. The west tank base (Sodium Silicate Tank #1) is occupied by a bauxite storage tower

(silo) and transfer system.

Location: The site is the western-most of two sodium silicate storage tanks that were located southeast of the 183-KE Head House and adjacent to the sulfuric acid tanks. The western-most tank was 10.7 meters (35 feet) southeast of the 183-KE Head House.

Process Description: During the seasons of high water turbidity, activated silica solution was fed into the raw water as an aid in coagulation. The silica was activated by sulfuric acid and prepared in two open-top, flat-bottom cylindrical steel mixing tanks. Each tank was 3.5 meters (11.5 feet) in diameter and 3.35 meters (11 feet) high, and was capable of mixing a batch to supply one-half of the plant for three hours at maximum rate. The batch cycle was completely automatic and electrically controlled, with sequence operation initiated by float level. Components (sodium silicate, sulfuric acid and water), of the activated silica were measured by displacement type meters and quantities were controlled by impulse counters. After batching, the activated silica was transferred to one of four steel tanks provided within the building for storing the solution. Each tank was sized to supply one-half of the plant for five hours at maximum flow and maximum parts per million. From the storage tanks the activated silica was pumped through metering orifices before injection into the raw water stream. The quantity of activated silica injected was regulated by a control valve whose operation was calibrated so that the metered quantity was in proportion to raw water flow. HW-24800-103, Vol 2, Page 137 shows the process flow for the sodium silicate system.

Related Sites/ Structures: The site was related to the 183-KE Head House.

Waste Type: Chemicals

Waste Description: The unit stored sodium silicate. While the tanks were in use, the sodium silicate was purchased and stored in liquid form.

Code: 100-K-23 **Classification:** Not Accepted

Names: 100-K-23; 183-KE Sodium Silicate Storage Tank (East) **Reclassification:** None

Type: Foundation **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1964

Description: The site was the eastern-most of the above-ground vertical tanks that were used to store liquid sodium silicate. Initially, tank trucks supplied the chemical for the tanks. Estimating from procurement and construction drawings for the bauxite tank (Project CAI 105), the sodium silicate tanks were removed in 1964 or 1965. Following removal, the bagged dry powder form of the chemical was used. The grade-level concrete base remained following removal of the tanks.

Location: The site is the eastern-most of two sodium silicate storage tanks that were located southeast of the 183-KE Head House and adjacent to the sulfuric acid tanks. The eastern-most tank was 4.3 meters (14 feet) northeast of the other sodium silicate tank and 4.3 (14 feet) southeast of 120-KE-3, Sulfuric Acid Tank.

Process Description: During the seasons of high water turbidity, activated silica solution was fed into the raw water as an aid in coagulation. The silica was activated by sulfuric acid and prepared in two open-top, flat-bottom cylindrical steel mixing tanks. Each tank was 3.5 meters (11.5 feet) in diameter and 3.35 meters (11 feet) high, and was capable of mixing a batch to supply one-half of the plant for three hours at maximum rate. The batch cycle was completely automatic and electrically controlled, with sequence operation initiated by float level. Components (sodium silicate, sulfuric acid and water), of the activated silica were measured by displacement type meters and

quantities were controlled by impulse counters. After batching, the activated silica was transferred to one of four steel tanks provided within the building for storing the solution. Each tank was sized to supply one-half of the plant for five hours at maximum flow and maximum parts per million. From the storage tanks the activated silica was pumped through metering orifices before injection into the raw water stream. The quantity of activated silica injected was regulated by a control valve whose operation was calibrated so that the metered quantity was in proportion to raw water flow. HW-24800-103, Vol 2, Page 137 shows the process flow for the sodium silicate system.

Related Sites/ Structures: The site was related to the 183-KE Head House.

Waste Type: Chemicals

Waste Description: The unit stored sodium silicate. While the tanks were in use, the sodium silicate was purchased and stored in liquid form.

Code: 100-K-24

Classification: Not Accepted

Names: 100-K-24; 183-KW Bauxite Tank

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1966

Status: Inactive

End Date: 1/1/1972

Description: The site is a single bauxite (aluminum oxide) above-ground storage tank (silo). The addition of the tank was part of a proposal to reduce water treatment costs by approximately \$278,000 per year in the 183-KE and KW Buildings. Hanford document, HW-76926, is the engineering study that proposed replacing the existing liquid alum coagulant feed process with one which fed bauxite and sulfuric acid. The tank was constructed on the site of the former Sodium Silicate #1 Tank. The tank had a capacity of 109,000 kilograms (240,000 pounds). One of the unused solution tanks, 45,400 kilograms (100,000 pounds) in capacity in the 183 Building (KE and KW) was converted to a bauxite feed bin. The feed bin was vented and equipped with a bag filter. The two silos (KE and KW) and the feed bin together provided approximately 33 days storage capacity. Other components of the system are listed below. A pneumatic conveying system was provided that was equipped with cyclone separators to transfer bauxite from hopper cars or boxcars to the outside silos and from either silo to the feed bin inside the building. The bauxite was transferred intermittently from the silos to the feed bin and did not interfere with any rail car unloading. The system was sized to unload a rail car in a single work shift. Two dry feeders, including one spare, moved bauxite from the feed bin to a slurry mix tank. The spare feeder was included to eliminate the need to prepare slurry manually on a batch basis during maintenance shutdown of the other feeder. A mix tank, with agitator, for slurring bauxite and water was a component of the system. Two pumps in parallel were used to transfer the slurry to reaction vessels. Two parallel systems, each consisting of a glass-lined reaction vessel, with glass-lined pipe tie-ins; an eductor which took suction from the reaction vessel, adding dilution water; and a pump, in series with the eductor, discharged through the chlorine injection piping to the raw water headers. Glass-lined pipe was used between the reaction vessel and eductor, and plastic pipe between the eductors and injection piping. Acid was supplied to the reaction vessel, where it was mixed with the bauxite slurry by steam sparging, from an existing head tank by gravity feed. An exhaust system included a water scrubber to remove steam, air, and acid fumes from the reaction vessels.

Location: The unit is located 11.6 meters (38 feet) southeast of the 183-KW Head House and on the northwest portion of the original Sodium Silicate Tank concrete base.

Process Description: The bauxite (hydrous aluminum oxide) in combination with sulfuric acid was used as a coagulant in the water treatment process. Mixing of the chemicals, water and sediment caused a

gelatin-like flake (floc) to form. The water with the floc flowed from the Head House to the Sedimentation Basins where the flocs allowed to settle.

Related Sites/ Structures: The site was related to the 183-KW, (183.2) Flocculation and Sedimentation Basins and the (183.1) Head House.

Waste Type: Chemicals

Waste Description: The tank was used to store dry bauxite (hydrous aluminum oxide or hydroxides with various impurities). The tank appears to have been emptied, although dry powder can be seen through the plexiglass cover indicating that no additional cleanup was performed. Bauxite is not listed in 40 CFR 302.4 as a hazardous substance and is not a CERCLA pollutant. No dangerous wastes or CERCLA hazardous substances, pollutants, or contaminants were stored or disposed of at this site.

Code: 100-K-28

Classification: Not Accepted

Names: 100-K-28; 183-KE Bauxite Tank

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1966

Status: Inactive

End Date: 1/1/1972

Description: The site is a single bauxite (aluminum oxide) above-ground storage tank (silo). The addition of the tank was part of a proposal to reduce water treatment costs by approximately \$278,000 per year in the 183-KE and KW Buildings. Hanford document, HW-76926, is the engineering study that proposed replacing the existing liquid alum coagulant feed process with one which fed bauxite and sulfuric acid. The tank was constructed on the site of the former Sodium Silicate #1 Tank. The tank had a capacity of 109,000 kilograms (240,000 pounds). One of the unused solution tanks, 45,400 kilograms (100,000 pounds) in capacity in the 183 Building (KE and KW) was converted to a bauxite feed bin. The feed bin was vented and equipped with a bag filter. The two silos (KE and KW) and the feed bin together provided approximately 33 days storage capacity. Other components of the system are listed below. A pneumatic conveying system was provided that was equipped with cyclone separators to transfer bauxite from hopper cars or boxcars to the outside silos and from either silo to the feed bin inside the building. The bauxite was transferred intermittently from the silos to the feed bin and did not interfere with any rail car unloading. The system was sized to unload a rail car in a single work shift. Two dry feeders, including one spare, moved bauxite from the feed bin to a slurry mix tank. The spare feeder was included to eliminate the need to prepare slurry manually on a batch basis during maintenance shutdown of the other feeder. A mix tank, with agitator, for slurring bauxite and water was a component of the system. Two pumps in parallel were used to transfer the slurry to reaction vessels. Two parallel systems, each consisting of a glass-lined reaction vessel, with glass-lined pipe tie-ins; an eductor which took suction from the reaction vessel, adding dilution water; and a pump, in series with the eductor, discharged through the chlorine injection piping to the raw water headers. Glass-lined pipe was used between the reaction vessel and eductor, and plastic pipe between the eductors and injection piping. Acid was supplied to the reaction vessel, where it was mixed with the bauxite slurry by steam sparging, from an existing head tank by gravity feed. An exhaust system included a water scrubber to remove steam, air, and acid fumes from the reaction vessels.

Location: The unit is located 11.6 meters (38 feet) southeast of the 183-KE Head House and on the northwest portion of the original Sodium Silicate Tank concrete base.

Process Description: The bauxite (hydrous aluminum oxide) in combination with sulfuric acid was used as a coagulant in the water treatment process. Mixing of the chemicals, water and sediment caused a gelatin-like flake (floc) to form. The water with the floc flowed from the Head House to the Sedimentation Basins where the floc was allowed to settle.

Related Sites/ Structures: The site was related to the 183-KE, (183.2) Flocculation and Sedimentation Basins and the (183.1) Head House.

Waste Type: Chemicals

Waste Description: The tank was used to store dry bauxite, aluminum oxide or hydroxides with various impurities.

The tank appears to have been emptied, although dry powder can be seen through the plexiglass cover indicating that no additional cleanup was performed.

Code: 100-K-39

Classification: Not Accepted

Names: 100-K-39; 118-K-3 Filter Crib

Reclassification: None

Type: Crib

Start Date:

Status: Inactive

End Date:

Description: The site was reported to be a crib. The first reference to a site identified as 118-K-3 Filter Crib was DOE/RL-90-20 (1992). In this document, it states that the site was used to dispose of demineralizer, and research and development waste from the 1706-KE Building. A sketch, Figure 5-1. Proposed Boring Locations at 100-KR-1 Operable Unit High Priority Liquid Waste Facilities, shows a site labeled 118-K-3 Filter Crib between and south of the retention basins. The area where this site is mapped is the identical location of a fenced electrical distribution intertie that connects electrical service between 100K East and 100K West. WHC-SD-EN-TI-239, 100-K Area Technical Baseline Report states that the crib could not be located during field investigations for the report. Further, it says that a fenced, high-voltage power distribution system is located at the site described by DOE/RL-90-20. The document continues with the crib received liquid wastes from the 1705KE/KER Laboratory. Discussions with present and former site employees, and investigations using Hanford Drawings (H-1-20305, H-1-23215, and H-1-24226), indicate that all cribbed wastes from the 1706-KE/KER facilities were disposed in the 116-KE-2 Crib. The initial Waste Information Data System (WIDS) entry for this site was not done until 1994. The information contained on the data entry form (A-6000-501) was based on WHC-SD-SD-TI-239. It was also recommended that the site not be entered as a waste site due to the uncertainty of the site's existence. A field visit by WIDS personnel was performed on August 16, 1994. There was no evidence of a waste site at the prescribed location.

Location: The 118-K-3 Filter Crib was purported to be located between the 116-KW-3 and 116-KE-4 Retention Basins.

Related Sites/ Structures: According to DOE/RL-90-20 the site was related to the 1706-KE Building. According to Waste Information Data System (WIDS) 1994 Data Entry Form (A-6000-501) signed by the operable unit manager, the site was related to the 1705KE/KER Laboratory.

Code: 100-K-44

Classification: Not Accepted

Names: 100-K-44; Exclusion Area; Grounds Surrounding Deactivated Areas

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The grounds within the 100-K exclusion area that are not part of other waste sites.

Code: 100-K-51

Classification: Accepted

Names: 100-K-51; 105-KE 90-Day Waste Accumulation Area; 100K 90-Day Waste Storage Facility

Reclassification: Rejected (9/14/2000)

Cooling Water Effluent Underground Pipelines (See Subsites) (100-K-56), Glycol pipelines (100-K-53), or the 1904-K Process Sewer lines (100-K-47). The two raw water lines that run between the 181-KE Pumphouse and the 165-KE Control House are constructed of 152-centimeter (60-inch) diameter steel pipe with 1.3-centimeter (0.5-inch) thick walls.

Location: The site includes pipelines located between the 181-KE Pumphouse and the 165-KE Control House. Other lines included in this site are located between sections of the water treatment facility and between the 165-KE Control House and the 105-KE Reactor.

Process Description: Water from the Columbia River was extensively treated before passing through the reactors. Treatment included settling, chemical treatment, filtering, and pH management to purify and prepare the water. Water flowrate to the 105-KE Reactor was in excess of 380,000 liters (100,000 gallons) per minute. After system upgrades in 1962, the flowrate was as high as 760,000 liters (200,000 gallons) per minute.

Related Sites/ Structures: Related structures include the 181-KE River Pumphouse, the 165-KE Control House, 183.1-KE Headhouse, the 183.2-KE Basins, the 183.3-KE Filters, the 183.4-KE Clearwells, and the 190-KE Process Water Pumphouse.

Waste Type: Water

Waste Description: The pipelines included carried raw, sanitary, and fire water throughout the 100-KE Area.

Code: 100-K-59

Classification: Not Accepted

Names: 100-K-59; 100-KW Clean Water Pipelines; 100-KW Service Water Pipelines

Reclassification: None

Type: Product Piping

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: The site consists of the upstream (pre-reactor) pipelines that carried raw river water from the 181-KW Pumphouse to the KW water treatment facilities and carried sanitary and fire water to various facilities. The site includes all water lines that connected the different sections of the water treatment plant, except for the sulfuric acid and sodium dichromate pipelines on the south side of the water treatment plant, and the treated water pipelines running from the 165-KW Building to the 105-KW Reactor (WIDS site 100-K-79). It includes the sanitary water pipelines connecting the 165 KE and KW Control Houses (to a point half-way between them) and the sanitary water pipeline connecting the 183 KE and KW Head Houses (to a point half-way between them). The site does not include the reactor cooling lines (100-K-55), the 1904-K Process Sewer lines (100-K-60 and 100-K-47), or the Glycol Heat Recovery pipelines (100-K-54). The two raw water lines that run between the 181-KW Pumphouse and the 165-KW Control House are constructed of 152-centimeter (60-inch) diameter steel pipe with 1.3-centimeter (0.5-inch) thick walls.

Location: The site includes pipelines located between the 181-KW Pumphouse and the 165-KW Control House. Other lines included in this site are located between sections of the water treatment facility and between the 165-KW Control House and the 105-KW Reactor.

Process Description: Water from the Columbia River was extensively treated before passing through the reactors. Treatment included settling, chemical treatment, filtering, and pH management to purify and prepare the water. Water flowing to the 105-KW Reactor was in excess of 380,000 liters (100,000 gallons) per minute. After system upgrades in 1962, the flow rate was as high as 760,000 liters (200,000 gallons) per minute.

Related Sites/ Structures: Related structures include the 181-KW River Pumphouse, the 165-KW Control House, 183.1-

Structures: KW Headhouse, the 183.2-KW Basins, the 183.3-KW Filters, the 183.4-KW Clearwells, and the 190-KW Process Water Pumphouse.

Waste Type: Water

Waste Description: The pipelines included carried raw, sanitary, and fire water throughout the 100-KE Area.

Code: 100-K-76

Classification: Not Accepted

Names: 100-K-76; 105-KW Unplanned Release
Discovered Near 130-KW-1 Emergency Diesel Tank

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1992

Status: Inactive

End Date:

Description: This site is a duplicate of 130-KW-1. The site is the location of two removed underground diesel storage tanks. The "unplanned release" is the radiation contamination detected when the tanks were excavated. The excavated tank site has been backfilled with uncontaminated soil to grade and covered with gravel. There is no separate radiological posting. However, the 100-KE/KW Reactor Areas are posted Underground Radioactive Material on the perimeter fences.

Location: The site is located in the 100-K Area, on the east side of the 105-KW Reactor Building and adjacent to the reactor exhaust stack. The underground diesel tanks were located between the stack and the 119-KW Building. Although the location description states the diesel tanks were located between the 105-KW exhaust stack and the 119-KW building, a sign is erroneously posted at the northwest corner of the 115 KW building that reads "130-KW-1 Diesel Tanks" This is further east and south of the reactor stack. There is no visual evidence that the tanks had been in either location.

Release Description: During the tank excavation, the site was found to be radioactively contaminated to a maximum of 400 counts per minute. The source and the extent of the contamination is unknown.

Related Sites/Structures: The site is a duplicate of 130-KW-1.

Waste Type: Soil

Waste Description: The site contains radioactively contaminated soil.

The Site Was Consolidated With:

Code: 130-KW-1

Names: 130-KW-1; 130-KW-1A/130-KW-1B Tanks; 105-KW Emergency Diesel Fuel Tank; 105-KW Emergency Diesel Oil Storage Tank

Code: 126-K-1

Classification: Accepted

Names: 126-K-1; 100-K Gravel Pit

Reclassification: Rejected (4/29/2009)

Type: Inert/Demolition Landfill

Start Date: 1/1/1975

Status: Active

End Date:

Description: The site has been reclassified to rejected. The debris disposed was of an inert/demolition type not regulated under CERCLA. This unit is a gravel borrow pit that resulted from 100-K Area construction. The slope of the southwest corner contains demolition waste. This area is covered with pit run backfill material. The bottom contains one layer approximately 1.5-meter

(5-foot) thick of demolition and inert waste covered with approximately 0.3 meters (1 foot) of pit run backfill material. Approximately 80% of this unit is unused.

Location: The western perimeter of this unit is located approximately 191 meters (625 feet) east of the 100-K Area's east perimeter fence and borders the eastern perimeter of the 118-K-1 Burial Ground.

Waste Type: Demolition and Inert Waste

Waste Description: The unit contains demolition and inert waste from the 100-K Area, the Near Surface Test Facility (NSTF) at Gable Mountain, and the Exploratory Shaft (ES) Site. Waste consists primarily of concrete, wood, steel pipe, structural steel, conduit, and wire.

Code: 130-K-1

Classification: Not Accepted

Names: 130-K-1; 1717-K Gasoline Storage Tank

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1972

Description: The site was an underground gasoline storage tank oriented with the long axis of the tank in an east-west direction. A 6.4 centimeters (2.5 inches) pipeline connected the tank to the building. The tank was emptied and rinsed with water when the facilities were deactivated in 1971. The concrete pad over the top of the tanks was removed in July, 1989. This allowed Pacific Northwest Laboratories to return to the tank site and perform Underground Penetrating Radar (UPR) to aid in locating the tank without the interference caused by the rebar in the concrete. The tank was excavated in July 1989. The soil around where the tanks had been located was sampled, the results analyzed, and the site backfilled to match the surrounding grade.

Location: The site was located approximately 3.7 meters (12 feet) north of the 1717-K, Maintenance and Transportation Service Building and 10.7 meters (35 feet) from the northwest corner of this building.

Related Sites/ Structures: The site was related to the 1717-K, Maintenance and Transportation Service Building.

Waste Type: Oil

Waste Description: The unit was used for storage of gasoline (product).

Code: 130-K-3

Classification: Not Accepted

Names: 130-K-3; 130-K-3A and 130-K-3B; 182-K
Emergency Diesel Oil Storage Tank

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1961

Status: Inactive

End Date: 1/1/1970

Description: The unit consisted of two steel underground diesel oil storage tanks. The tanks were used to supply diesel fuel to three engines located within the 182-K (Emergency Water Pump House). The engines ran emergency pumps used to provide backup cooling water for the 105-KE and 105-KW Reactors. The tanks were covered by a bermed mound of soil with the top of the mound 1.5 meters (5 feet) above grade level. The top of each tank was 1.2 meters (3.5 feet) above grade and covered by 0.46 meters (1.5 feet) of the soil berm. A 0.7 meters (2 feet) diameter manway (0.64 centimeters [0.25 inches] thick bolted steel plate cover) was located in the center of each tank. All piping associated with the tanks utilized welded joints with no threaded couplings. The piping and conduit associated with each tank was: 3 fuel oil pipelines -- 3.2 centimeters (1.25 inches) outside diameter by 3.7 meters approximately (12

feet) to the building; 1 fuel oil return pipeline -- 0.64 centimeters (3 inches) outside diameter by approximately 4.6 meters (15 feet) to the building (empty during normal operation); 1 centrifuge fuel oil pipeline -- 3.2 centimeters (1.25 inches) outside diameter by approximately 9.1 meters (30 feet) to the building; 1 vent pipeline -- 0.64 centimeters (3 inches) outside diameter by approximately 6.1 meters (20 feet) (including above ground components); 1 vertical fill pipeline connection -- 10.2 centimeters (4 inches) outside diameter by 15.2 centimeters (6 inches) tall (empty during normal operation); 1 fuel oil cross tie pipeline -- 7.6 centimeters (3 inches) outside diameter by approximately 3.05 meters (10 feet) long (empty during normal operation); 1 fuel level indicator conduit -- electrical and did not contain product. There was no history of repairs made to these tanks. In about 1970, the tanks were pumped empty of product and abandoned. The tanks were excavated on April 13, 1993 following the Site Assessment Process. The soil around where the tanks had been located was sampled, the results analyzed, and the site was backfilled to match the surrounding grade.

Location: The tanks were located (5 feet) north of the north wall of the 182-K, Emergency Water Pump House. They were 1.5 meters (5 feet) apart.

Release Description: Prior to the removal of these tanks, there were no known leaks (unplanned releases) associated with the them.

Related Sites/ Structures: The site was related to the 182-K Emergency Water Pump House (Coolant Backup System).

Waste Type: Oil

Waste Description: The two tanks were used for storage of diesel oil (product).

Code: 1607-K4	Classification: Accepted
Names: 1607-K4; 1607-K4 Sanitary Sewer System; 1607-K4 Septic Tank; 1607-K4 Septic Tank and Associated Drain Field; 124-K-2	Reclassification: Closed Out (3/5/2001)
Type: Septic Tank	Start Date: 1/1/1955
Status: Inactive	End Date:

Description: The sanitary sewer system is composed of a septic tank, two leaching trenches and associated piping. The septic tank and dosing chamber are composed of reinforced concrete per Hanford Standard E-5-11. There is a maximum of 1.5 meters (5 feet) of fill on the cover slab. There are 149 meters (150 + 238 + 102 feet) of 20 centimeter (8 inches) vitrified clay pipe to the septic tank, followed by 6.1 meters (20 feet) of 15 centimeter (6 inches) vitrified clay pipe to the larger leaching trench. There are an additional 68 meters (122 + 102 feet) of 15 centimeter (6 inches) of vitrified pipe connecting 1717-K to the system. The leaching trench contains 128 meters (420 feet) of 15 centimeters (6 inches) vitrified clay pipe laid with open joints. The second leaching trench is connected directly to the system piping with 6.1 meters (20 feet) of vitrified piping. The piping within the leach trench is a single 9.1 meters (30 feet) of vitrified piping.

Location: The system is north and northeast of 1704-K and 1717-K buildings

Related Sites/ Structures: The system serviced 1704-K (Offices) and 1717-K (Maintenance Shop) buildings.

Waste Type: Sanitary Sewage

Waste Description: This unit received sanitary sewage from the 1704-K Office Building and the 1717-K

Description: Maintenance Shop.

Closure Info: The septic system was abandoned in 1999 per the requirements of Washington Administrative

Code 246-272-1851. All septage inside the tank was removed and the empty tank was filled to eliminate void spaces. The septic system lids were left in place, in accordance with an agreement with the Washington Department of Health.

Code:	126-KE-3	Classification:	Not Accepted
Names:	126-KE-3; 183-KE Liquid Alum Storage Tank #1	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1955
Status:	Inactive	End Date:	1/1/1997
Description:	The site is an above ground vertical stainless steel storage tank mounted on a concrete base. The tank was part of a system called the Liquid Alum System that supplied liquid alum for water treatment. The liquid was supplied either by rail car or tank truck, as both connections are shown on the Liquid Alum System diagram in HW-24800-103. The piping and instrument identification diagram, H-1-16552, shows the pipelines, valves, and instrumentation related to the tank.		
Location:	The site is the eastern-most of two alum storage tanks located approximately 10.7 meters (35 feet) south of the southwest corner of the 183-KE Head House and 10.7 meters (35 feet) south of the 183-KE Chlorine Vault.		
Process Description:	Alum was used as a coagulant in water treatment. During the season of water high turbidity activated silica was added to aid in coagulation. Alum was fed from the storage tank and proportioned directly into the raw water line. The proportioning pump was paced by the flow of raw water in its 91-centimeter (36-inch) raw water pipeline and fed at 30 parts per million (ppm) at a maximum flow rate of 121,000 liters/minute (32,000 gallons/minute). During the winter, the liquid alum was pumped through heat exchangers for purpose of heating and agitating the chemicals.		
Related Sites/ Structures:	The tank was associated with the 183-KE Head House. The head house was the water quality center for the entire water treatment plant. In it were the facilities for metering raw water, for chemical injection into raw, filtered, and process water, and for effluent and influent control throughout the filter plant.		
Waste Type:	Chemicals		
Waste Description:	The unit was used for storage of liquid alum (aluminum sulfate). Material Safety Data Sheet (MSDS) #040407 lists aluminum sulfate as an EPA hazardous substance. It is believed that this tank has been cleaned out.		

Code:	100-N-7	Classification:	Not Accepted
Names:	100-N-7; 182-N Facility Liquid Unplanned Release (Remediated)	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1987
Status:	Inactive	End Date:	1/1/1987
Description:	The release site consists of a concrete flume on the river bank that extends into the river. The release at this site was approximately 19 liters (5 gallon) of oil that was mixed with a continuous permitted water discharge. The oil was dispersed into the river with the rest of the permitted discharge from the flume. The flume is currently dry and there is no evidence of the release.		
Location:	The site is located on the Columbia River upstream of the 181-N Building, and extends from the 182-N Tank Farm into the river.		
Release	On February 6, 1987, approximately 19 liters (5 gallons) of turbine oil was discharged to the		

Release Description: Columbia River through the 182N tank farm raw water return line. A small (pin hole size) leak in a lube oil line in the No. 2 drive turbine allowed oil to enter the secondary steam system. Steam condensate from this system returns to the 100-N steam condensate system that drains to the river. The leak in the lube line was repaired.

Related Sites/ Structures: This site is related to the 182-N Tank Farm Overflow Outfall (NPDES Permit Outfall #005).

Waste Type: Oil

Waste Description:

Code: 100-N-8

Classification: Accepted

Names: 100-N-8; 108-N CUF; 108-N Facility

Reclassification: Rejected (9/11/2000)

Type: Loading Dock

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1990

Description: The 108-N Chemical Unloading Facility (CUF) was designed to remove liquids from railroad cars. The 108-N Building, metal structure used to offload chemicals, tank foundations, and tank pit are part of this site and remain at the location. The ground surface around these facilities is graveled.

Location: The 108-N CUF is located within the 100-N Exclusion Area perimeter fence near the southeast corner, and east of the 116-N-8<90-day storage

Process Description: The unit was used for offloading, storage and transfer of 93% sulfuric acid and 50% sodium hydroxide solutions received by railroad car or tank truck. The 120-N-7 Unloading Station french drain was used for containment of small releases from the overhead transfer boom during offloading from railcar or truck. The facility had three 38,000 liter (10,000 gallon) above ground steel sulfuric acid tanks and one 290,000 liter (76,800 gallon) sodium hydroxide tank. Adjacent to the sulfuric acid tanks are five 120-N-6 sulfuric acid french drains where tank overflows were vented. The french drains are 0.6 meter (2 feet) in diameter and consist of a clay pipe packed with lime. The acid transfer system used a 3,800 liter (1,000 gallon) steel transfer tank located in a pit west of the 108-N Building. The tank filled with acid via gravity flow from the storage tanks. Air pressure was used to transfer acid by way of piping through the trench to the 163-N Day Tank. There are no french drains associated with the sodium hydroxide tank. Transfer pumps in the 108-N Building transferred the sodium hydroxide directly to the 163-N Day Tank from the storage tank.

Related Sites/ Structures: The 120-N-5 Acid/Caustic Transfer Trench and Neutralization Unit, the 120-N-6 Sulfuric Acid Tank french drains, and the 120-N-7 Unloading Station french drain are associated with the unit.

Waste Type: Chemicals

Waste Description: The site received 93% sulfuric acid, and 50% sodium hydroxide solutions.

Code: 100-N-9

Classification: Accepted

Names: 100-N-9; 120-N-5 Facility Liquid Unplanned Release 1 (08/07/87)

Reclassification: Rejected (9/11/2000)

Type: Unplanned Release

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Release Description: during a transfer from the 108-N Storage Tank to the 163-N Facility. On December 4, 1987, it was noticed that the trench was open to the soil at the location where the leak occurred. This open area was found to be a dry well installed in 1986 during upgrading of the trench. The dry well was installed for steam trap drainage, not for containment of acid spills. An estimated 57 to 114 liters (15 to 30 gallons) of sulfuric acid was released to the ground.

Related Sites/ Structures: The 120-N-5 Transfer Trench is associated with the release.

Waste Type: Chemical Release

Waste Description: The site received an estimated 57 to 114 liters (15 to 30 gallons) of sulfuric acid.

Code: 100-N-12 **Classification:** Not Accepted

Names: 100-N-12; 166-N / 184-N Pipelines Liquid Unplanned Release 1 (10/14/87 Cleaned Up) **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1987

Status: Inactive **End Date:** 1/1/1987

Description: The site is a leak of fuel oil found contained in a drain trench, inside the 184-N Facility. The oil was absorbed and the trench cleaned up immediately. The Auxiliary Operations Supervisor for N-Reactor at the time, Joe Zoric, said the spill did not reach the drain at the far end of the trench.

Location: The spill occurred inside the 184-N Building and accumulated in a drain trench.

Release Description: This spill was included in the 100-NR-1 Work Plan (DOE/RL-90-22 Draft E) and the 100-N Technical Baseline Report (WHC-SD-EN-TI-251). The work plan says "an unknown amount of fuel oil leaked from a loose pipe fitting at the 184-N Annex. Oil was being transferred from the day tank to the No. 2 Boiler. The oil was contained in the 184-N Annex drain trench and cleaned up. As part of the WIDS site investigation in 1994, an interview was conducted with Joe Zoric, who was a former Auxiliary Operations Supervisor and remembered this particular spill. Joe said it was a very small spill contained within the trench and did not reach the drain at the far end of the trench. According to Fact Sheet No. 100N-87-95 the spill was cleaned up, and the probable cause listed as: "The most likely cause is the coupling was loosened to perform work on the transmitter, and upon recognizing that the transmitter was not isolated, an attempt was made to retighten the coupling." The spill date was October 14, 1987.

Related Sites/ Structures: The spill occurred in the 184-N annex building.

Waste Type: Oil

Waste Description:

Code: 100-N-19 **Classification:** Accepted

Names: 100-N-19; HGP Construction Debris Dump Solid Waste Site; SWMU #11 **Reclassification:** Rejected (6/30/2004)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a large area consisting of a series of pits and depressions containing soil, rock, concrete, metal, wood, and asphalt that have been dumped in the area over time. The site is

relatively long [more than 1000 meters (3000 feet) long] and narrow [about 150 meters (500 feet) wide] in shape.

Location: The Hanford Generating Plant (HGP) Construction Debris Dump is located south and east of the Bonneville Power Administration (BPA) Hanford Substation along a dirt road.

Process Description: The site was used to dispose of non hazardous construction debris from 100-N and the Hanford Generating Plant.

Related Sites/ Structures: The site is associated with 600-32 and 100-N-39 which are duplicate codes for the same site, a dumping area contained within the larger 100-N-19 Dumping Area.

Waste Type: Construction Debris

Waste Description: The site contains mounds of soil, rock, concrete, metal, wood, and asphalt that have been dumped in the area..

Code: 100-N-21 **Classification:** Accepted

Names: 100-N-21; 1143-N Blast Yard; Blast Yard Solid Waste Site **Reclassification:** Rejected (9/11/2000)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The area has thin, scattered patches of red garnet sandblasting material. Paint chips, reported in 1994 as being mixed in with the garnet (Cote 1994), are no longer visible. The site is in use as a parking lot.

Location: The site is located in the southeast portion of the 100-N Area, southwest of MO-535 and MO-229 and east-southeast of the 1143-N Paint Shop.

Process Description: The garnet was used to sandblast non-contaminated equipment prior to painting.

Related Sites/ Structures: The 1143-N Paint Shop is related to this site.

Waste Type: Soil

Waste Description: The area has scattered patches of red garnet sandblasting material.

Code: 100-N-27 **Classification:** Accepted

Names: 100-N-27; 108-N Neutralization Pit; 108-N Sump **Reclassification:** Rejected (9/11/2000)

Type: Sump **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1990

Description: The acid neutralization pit is constructed of concrete with a brick lining, and is covered with a steel lid.

Location: The unit is located west of the 108-N Building.

Release Description: No known leaks occurred in the system.

Process Description: The pit was used to manually neutralize waste acid. This site received drainage from the 108-N floor drains and from the acid transfer tank. The neutralized waste was sent via a water jet pump to the 183-N facility where it was then discharged to the river through the 260 centimeter

(102 inch) outfall line. Sufficient quantities of 50% sodium hydroxide were used to neutralize the 93% sulfuric acid waste. The brick lining was replaced at least once.

Related Sites/ Structures: This facility received drainage from the 108-N floor drains and from the acid transfer tank. Neutralized waste was sent from the 108-N Neutralization Unit by the water jet pump to the 183-N Facility where it was then discharged to the river through the 259-centimeter (102 inch) outfall line.

Waste Type: Chemicals

Waste: The pit was used to neutralize waste sulfuric acid before eventual release to the river.

Description: Chemicals received by the pit included 93% sulfuric acid and 50% sodium hydroxide.

Code: 100-N-39

Classification: Accepted

Names: 100-N-39; Hanford Substation Construction Dump Area; SWMU #11

Reclassification: Rejected (7/14/2005)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site should be rejected because it is a duplicate of 600-32 and contained within the larger dumping area 100-N-19. There is no similar dump near the area originally mapped (in Arcview) as the site location, inside the BPA Substation fence. The site is a construction dump with evidence of burning activity. The Hanford Generating Plant RCRA Facility Assessment Report states "The site is a large, irregular shaped burn pit and a large borrow pit covering 5 to 10 acres. The site contains large blocks of concrete and miscellaneous debris."

Location: The site is approximately 305 meters (1000 feet) south of the Hanford Generating Plant property fence.

Related Sites/ Structures: This site is a duplicate of 600-32 and 100-N-19.

Waste Type: Construction Debris

Waste: The waste includes construction debris and combustible construction waste that was burned.

Description: The site contains large blocks of concrete, miscellaneous debris, one empty drum and one pile of sand blast grit

The Site Was Consolidated With:

Code: 600-32

Names: 600-32; N Area Landfill

Code: 100-N-40

Classification: Accepted

Names: 100-N-40; Unplanned Release at 108-N

Reclassification: Rejected (9/11/2000)

Type: Unplanned Release

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Description: The site is a graveled field at the 108-N Chemical Unloading Facility.

Location: The site is located at the railcar unloading station at the 100-N-8 (108-N Chemical Unloading Facility) and 120-N-6.

Release: Approximately 38 liters (10 gallons) of sodium hydroxide was spilled to the ground on

Description: December 26, 1987. Difficulties during the transfer of sodium hydroxide from a rail car to the caustic storage tank prompted the operator to disconnect the transfer line and set it on the

ground.

Related Sites/ Structures: This release occurred at the 100-N-8 (108-N) Chemical Unloading Facility.

Waste Type: Chemical Release

Waste Description: The waste is sodium hydroxide spilled to the ground.

Code: 100-N-56

Classification: Accepted

Names: 100-N-56; 181-N Building Drywell

Reclassification: Rejected (9/11/2000)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The drywell is not visible from ground surface and is apparently located underground. The drywell, judging by the site drawing, is adjacent to the fenceline north of the 181-N Building. The ground surface is graveled. Another drywell, 100-N-73 (Miscellaneous Stream 395) is in this area, but it drains a parking lot north of the 107-N Building via a concrete trench.

Location: The site is located in the 100-N Area, north of the 181-N Building and between the double security exclusion area fences.

Process Description: The site received waste water from the 181-N River Pumphouse Building. According to Don Eckert of 100-N Operations, only river water entered the pipeline leading to the drywell.

Related Sites/ Structures: The 181-N Building is associated with this waste site.

Waste Type: Water

Waste Description: River water from inside the 181-N Pumphouse is the only source of waste water to this site.

Code: 100-N-69

Classification: Not Accepted

Names: 100-N-69; 105-NB Stormwater Injection Well; Miscellaneous Stream #801

Reclassification: None

Type: Injection/Reverse Well

Start Date:

Status: Active

End Date:

Description: The site is covered with a 0.56 meter (1.8 foot) diameter steel grate and is 2.56 meters (8.4 feet) deep. The drywell is constructed of concrete. The site appears to drain stormwater that accumulates at a low point and from roof drains on the 105-NB building. Flow rates to the drain are estimated to be less than 19 liters (5 gallons) per minute. No contaminated areas were observed at the time of the inspection.

Location: The site is located 5.4 meters (18 feet) north of the 105-NB north entrance door.

Related Sites/ Structures: The site is associated with 105-NB building.

Waste Type: Stormwater Runoff

Waste Description: This site receives less than 19 liters (5 gallons) per minute of stormwater only.

Description:

Code: 100-N-70 **Classification:** Not Accepted
Names: 100-N-70; 1705-N Stormwater Injection Well; **Reclassification:** None
Miscellaneous Stream #802
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: The site was covered with a 1 meter (3.3 foot) diameter steel grate at grade level and is constructed of concrete. The site was filled with gravel and is located in a depression. The site appeared to be a drain for stormwater that collects in a depression from the surrounding area and the roof of 1705-N. The flow rates to the site is estimated to be less than 19 liters (5 gallons) per minute. No contaminated areas were observed at the time of the inspection.
Location: The site is located between 1705-N Building and the northwest corner of the 1714-NA Building.
Related Sites/ Structures: This site drains stormwater from the 1705-N Building.
Waste Type: Stormwater Runoff
Waste Description: This site received less than 19 liters (5 gallons) per minute of stormwater runoff only.

Code: 100-N-71 **Classification:** Not Accepted
Names: 100-N-71; Project 4546.010; 100-N Sewer System **Reclassification:** None
Type: Septic Tank **Start Date:**
Status: Unknown **End Date:**
Description: This site was added to WIDS before the septic system was built; subsequently the project has been cancelled because of lack of funds (per Nolan Draper).
Location: Original planned location (not built): One Type II septic tank is located south of 1310-N. Two Type I septic tanks are located southeast of 1120-N. The new drain field is located east of 1120-N. A pipeline connects the parts of the system.
Process Description: System as designed (not built): The Type II septic tank measures 3.6 meters by 2.4 meters (12 feet by 8 feet). The Type I septic tanks measure 2.4 meters by 1.8 meters (8 feet by 6 feet). The new drain field measures 52.7 meters by 51.2 meters (173 feet by 168 feet). The total length of the associated piping is approximately 305 meters (1000 feet). The pipeline was to be routed from Lift Station #3 (south of 1310-N) to Manhole #5 (southwest of 1120-N) and to the new drain field (east of 1120-N).

Code: 100-N-72 **Classification:** Not Accepted
Names: 100-N-72; 107-N Building East Area Stormwater **Reclassification:** None
Runoff; Miscellaneous Stream #396
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: The site is a concrete french drain, about 0.5 meters (1.5 feet) in diameter, with an open metal grate cover. The bottom is about 0.3 meters (1 foot) deep, and only sand and cobbles are visible. A concrete trench, about 18 meters (60 feet) long, drains the paved and graveled area north of the 107-N Building and empties into this french drain. The trench prevents stormwater from flowing to the west, and down a steep slope in the area fenced for security exclusion. The

area is posted with underground radioactive materials (URM) signs, like most of the 100-N Area. This french drain receives stormwater only, however.

Location: This stormwater runoff is in the area east of the 107-N Building.

Process Description: This Miscellaneous Stream is stormwater runoff.

Waste Type: Stormwater Runoff

Waste Description:

Code: 100-N-73 **Classification:** Not Accepted

Names: 100-N-73; 107-N Building West Area Stormwater Runoff; Miscellaneous Stream #395 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The drain is a concrete structure with a steel lid, fed by a concrete trough running from north of the 107-N Building, along the base of the security fence.

Location: This Miscellaneous Stream is a drywell on the north side of the 181-N Pumphouse.

Process Description: This Miscellaneous Stream drains stormwater from the area north and west of the 107-N Building and flows via a concrete trench to a drywell on the north side of the 181-N Pumphouse. It is designed to prevent erosion on the river bank that could otherwise be caused by stormwater.

Related Sites/ Structures: This drywell drains the security exclusion area from north of the 107-N Building south to the french drain.

Waste Type: Stormwater Runoff

Waste Description:

Code: 100-N-74 **Classification:** Accepted

Names: 100-N-74; 183-N Building Fire System Drain; Miscellaneous Stream #492 **Reclassification:** Rejected (9/11/2000)

Type: Injection/Reverse Well **Start Date:**

Status: Active **End Date:**

Description: The site is in a graveled lot on the north side of the 183-N Building. A fire system relief valve (site 100-N-75) extends about 1 meter (3 feet) above the ground, and is surrounded by six steel barrier poles to protect it from vehicles. Two metal 10 centimeter (4 inch) pipes with handles for turning valves are next to the relief valve, but no pit is visible.

Location: The Miscellaneous Stream is in a valve pit on the north side of the 183-N Building.

Process Description: When fire system piping is opened at the valve pit for repair, untreated water from the Columbia River (via the Hanford Site export water system) drains from pipes into the pit.

Related Sites/ Structures: The Miscellaneous Stream is for the 183-N Building fire system.

Waste Type: Water
**Waste
Description:**

Code: 100-N-75 **Classification:** Accepted
Names: 100-N-75; 183-N Building Fire System Relief Valve; Miscellaneous Stream #493 **Reclassification:** Rejected (9/11/2000)
Type: French Drain **Start Date:**
Status: Active **End Date:**
Description: The relief valve is visible in a large graveled area north of the 183-N Building. It is surrounded by 6 metal posts that protect it from vehicles. The relief valve is just under 1 meter (3 feet) high, and painted red. The entire area is marked "Underground Radioactive Materials."
Location: This Miscellaneous Stream is north of the 183-N Building, adjacent to the valve pit.
**Process
Description:** This stream is a relief valve that releases during upset conditions in the plant fire system. Released water flows into a container, and overflows onto the ground. The water is from the Columbia River, via the Hanford Site export water line.

Waste Type: Water
**Waste
Description:**

Code: 100-N-76 **Classification:** Accepted
Names: 100-N-76; 181-N Pumphouse French Drains **Reclassification:** Rejected (4/12/2004)
Type: French Drain **Start Date:**
Status: Active **End Date:** 1/1/2001
Description: The site is two french drains; the drains were plugged with grout on June 13, 2001. The french drains were connected to each other underground, and provided steam condensate and stormwater drainage just east of the 181-N Pumphouse. These drains are believed to have been built to receive steam condensate blowdown. However, when the steam line was removed the drains were left behind, and drained excess stormwater. Both drains are about 46 centimeters (18 inches) in diameter and constructed of concrete. A 10 centimeter (4 inch) pipe connects them; this pipe is about 20 centimeters below the lip in the southern drain and about 1 meter (3 feet) below the lip of the northern drain. Because the northern drain is noticeable higher than the southern drain, it is difficult to tell if the pipe is level or drains preferentially toward either side. The drains are about 16 meters (52 feet) apart.
Location: The drains are on the east side of the paved and graveled road that is east of the 181-N Pumphouse.
**Process
Description:** These drains originally were built to drain steam condensate, but later drained excess stormwater.

Waste Type: Steam Condensate
**Waste
Description:**

Code: 116-N-8 **Classification:** Accepted

Names: 116-N-8; 116-N-8 Storage Pad; 1330-N; 163-N Mixed Waste and Hazardous Waste Container Storage Pad **Reclassification:** Rejected (9/6/2000)

Type: Storage Pad (<90 day) **Start Date:** 12/1/1986

Status: Active **End Date:**

Description: Containers are stored on a curbed and fenced concrete pad. The pad is covered by an open metal shed, divided into three storage areas each with its own locked gate. The entire unit is approximately 45 by 18 meters (150 by 60 feet). A small cabinet in front holds personal protective equipment and spill response materials. The front of the unit is an asphalt parking/driving area; the sides and back are gravel.

Location: The site is located south of the 163-N Building.

Release Description: No spills have been recorded at this site. No stains are visible on the concrete.

Waste Type: Soil

Waste Description: This site receives radioactively contaminated oil and miscellaneous hazardous process chemicals in drums and containers. The amounts received are variable based on operations.

Code: 120-N-5 **Classification:** Accepted

Names: 120-N-5; 108-N/163-N Transfer Line and Neutralization Pit **Reclassification:** Rejected (9/11/2000)

Type: Product Piping **Start Date:** 1/1/1963

Status: Inactive **End Date:** 1/1/1990

Description: The Transfer Line and Neutralization Pit is a 220-meter (720-foot) long polymer lined concrete pipe trench (encasement) that contains two transfer lines that run between the 108-N and the 163-N Buildings. The trench has concrete bottom and sides and a metal plate cover. The enclosed lines are one 6.4-centimeter (2.5-inch) sodium hydroxide line and one 10.2-centimeter (4-inch) sulfuric acid line. The trench runs 50 meters (154 feet) south from the 163-N Building to a neutralization pit, east for 132 meters (433 feet), and then north for 26 meters (85 feet) to the 108-N Building. The 1.22-meter (4-foot) by 3.05-meter (10-foot) concrete neutralization pit, located at coordinates N149307 and E571120, is designed to receive waste spills from within the encasement. Its upper surface is a few inches above grade. The neutralization pit has two 61-centimeter (24-inch) steel manhole covers, one marked "acid" and the other "caustic", that provide pit access. DOE/RL-90-22 describes its internal dimensions as two vaults, each measuring 1.8 by 1.8 by 3.1 meters (6 by 6 by 10 feet) deep.

Location: The site is a pipe trench that is located between the 108-N and the 163-N Buildings.

Release Description: See UPR-100-N-34, 108-N Tank Transfer, Sulfuric Acid Line Break; UPR-100-N-15, 108-N Neutralization Sump Spill; 100-N-9, 120-N-5 Facility Liquid Unplanned Release 1 (08/07/87); 100-N-10, 120-N-5 Facility Liquid Unplanned Release 2 (09/02/87); 100-N-11, 120-N-5 Transfer Trench Liquid Unplanned Release 3.

Process Description: The site transfers sulfuric acid and sodium hydroxide from the 108-N Chemical Unloading Facility to the 163-N Water Demineralization Plant for use in water treatment.

Related Sites/Structures: The piping was used to transfer acids and caustics from the 108-N Chemical Unloading Facility to the 163-N Demineralization Plant.

trenches partially filled with a bed of washed gravel or crushed stone into which perforated or open joint pipe is placed. The discharge from the septic tank is distributed through these pipes into trenches and surrounding soil.

Related Sites/ Structures: The septic system received sanitary sewage from office trailers 1113-N, 1114-N, and 1115-N. This septic system was directly hooked up to Sanitary Sewer System No.7, (124-N-7).

Waste Type: Sanitary Sewage

Waste: This unit received an unknown amount of sanitary sewage.

Description:

Code: 124-N-7 **Classification:** Accepted

Names: 124-N-7; 124-N-7 Septic Tank; 100-N Sanitary Sewer System No. 7 **Reclassification:** Rejected (9/11/2000)

Type: Septic Tank **Start Date:** 1/1/1984

Status: Inactive **End Date:** 1/1/1987

Description: A site visit in July 1999 found a 0.61 meter (2 foot) diameter manhole and two 19.6 centimeter (8 inch) diameter access ports labeled "Sewer". No drain field was identified. However, the 100-N Facility Manager said (see Deford 1996 reference below) that when the tank was pumped and filled with sand, it was covered with a layer of parking lot gravel and can no longer be located.

Location: The unit is located southwest of the 1115-N Trailer.

Process Description: Untreated sanitary sewage enters the septic tank where the heavy solids settle to the bottom of the tank. The lighter solids, fats and greases partially decompose and rise to the surface and form a layer of scum. The solids that have settled to the bottom are attacked by bacteria and form sludge. The clear sewage then enters a system of properly sized and constructed narrow trenches partially filled with a bed of washed gravel or crushed stone into which perforated or open joint pipe is placed. The discharge from the septic tank is distributed through these pipes into trenches and surrounding soil.

Related Sites/ Structures: The system received sanitary sewage from office trailers 1103-N, 1104-N, and 1145-N and after modifications received sanitary sewage from 124-N-6 Sanitary Sewer System and the 1145-N Building.

Waste Type: Sanitary Sewage

Waste: This unit received approximately 19,700 liters/day (5,200 gallons/day) of sanitary sewage from

Description: office trailers.

Code: 124-N-8 **Classification:** Accepted

Names: 124-N-8; 124-N-8 Septic Tank; 100-N Sanitary Sewer System No. 8 **Reclassification:** Rejected (9/11/2000)

Type: Septic Tank **Start Date:** 1/1/1983

Status: Inactive **End Date:** 1/1/1987

Description: A site visit in July 1999 found two concrete pads (0.6 meters by 0.6 meters [2 X 2 feet]) with 19.6 centimeter (8 inch) lids marked "Sewer" in the general location of this site. It is not known if one of the markers is from the old system (124-N-8) or the replacement sewage system (124-N-10).

Location:

Process Description: Untreated sanitary sewage enters the septic tank where the heavy solids settle to the bottom of the tank. The lighter solids, fats and greases partially decompose and rise to the surface and form a layer of scum. The solids that have settled to the bottom are attacked by bacteria and form sludge. The clear sewage then enters a system of properly sized and constructed narrow trenches partially filled with a bed of washed gravel or crushed stone into which perforated or open joint pipe is placed. The discharge from the septic tank is distributed through these pipes into trenches and surrounding soil.

Related Sites/ Structures: The system received sanitary sewage from office trailers 1132-N, 1133-N, 1134-N and 1135-N.

Waste Type: Sanitary Sewage
Waste Description: This unit received approximately 3,400 liters/day (900 gallons/day) of sanitary sewage from office trailers. .

Code: 200 ETF **Classification:** Accepted
Names: 200 ETF; 2025-E; 200 Area Effluent Treatment Facility (ETF) **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1995
Status: Active **End Date:**

Description: The Effluent Treatment Facility contains several tanks and process systems that make up the primary and secondary treatment trains for the treatment of dilute waste water generated at the Hanford Facility. The primary treatment train receives waste water in the surge tank, located outside the Effluent Treatment Facility Building on the south side. The secondary treatment train collects, concentrates, dries and packages the waste (generated by the primary treatment train systems) in lined steel containers.

Location: The Effluent Treatment Facility lies north of the Liquid Effluent Retention Facility an east of Canton Avenue in the 200 East Area.

Process Description: Mixed waste stored in the double-shell tank system is transferred to the 242-A Evaporator, where the waste is concentrated through an evaporation process. The concentrated slurry waste is returned to the double-shell tank system, and the evaporated constituents are re-condensed, collected, and transferred to the Liquid Effluent Retention Facility until they are transferred to the Effluent Treatment Facility for additional treatment. The facility consists of a primary and a secondary treatment train. The primary treatment train removes or destroys dangerous and mixed waste components from the waste water. The primary treatment train consists of the following treatment operations: pH adjustment, filtration, ultraviolet oxidation, hydrogen peroxide decomposition, fine filtration, de-gasification, reverse osmosis, polishing (ion exchange column) and final pH adjustment and verification. The secondary treatment train processes the waste byproducts removed by the primary treatment train. The secondary waste is dried to a powder, containerized and transferred to a mixed waste treatment, storage and/or disposal unit. The secondary treatment train includes the following treatment components: secondary waste receiving tanks, Effluent Treatment Facility Evaporator (forced circulation evaporator), concentrate tank, thin film dryer, container handling, and support systems. Treated effluent meets delisting requirements and is discharged as nondangerous waste to the State-Approved Land Disposal System.

Related Sites/ Structures: The Effluent Treatment Facility is associated with the 242-A Evaporator and the Liquid Effluent Retention Facility.

Waste Type: Process Effluent

Waste Type:	PROCESS EFFLUENT
Waste Description:	The unit treats process condensate containing small amounts of volatile and semivolatile organic constituents, inorganic constituents and radionuclides.
Code:	200-A TEDF
Classification:	Accepted
Names:	200-A TEDF; 216-E-43A and 216-E-43B; 600-145; TEDF Basin; 200 Area Treated Effluent Disposal Facility
Reclassification:	None
Type:	Pond
Start Date:	1/1/1995
Status:	Active
End Date:	
Description:	The 357 meter by 192 meter (1172 ft by 629 ft) fenced area contains two adjacent five acre gravel disposal basins and a metal sampling building (#6653). Pond B is north of Pond A. The 6653 metal sampling building is 4.2 meters by 6.1 meters (14 ft by 20 ft) and is located near the east fence line and gate.
Location:	Pond A (216-E-43A- South Pond) and B(216-E-43B-North Pond) and 6653 are located about 660 meters east of 216-B3C, which is east of and outside the 200 East security fence.
Process Description:	Liquid waste from seven Hanford facilities (Plutonium Finishing Plant, 222-S Complex, T-Plant Complex, 284-W Power Plant, PUREX Plant, B-Plant, and 242-A-81 Water Services Building) is transported via eleven miles of pipe to the two evaporation/infiltration ponds (Pond A and Pond B). TEDF includes no treatment.
Related Sites/ Structures:	Liquid waste from seven Hanford facilities (Plutonium Finishing Plant, 222-S Complex, T-Plant Complex, 284-W Power Plant, PUREX Plant, B-Plant, and 242-A-81 Water Services Building) is transported via eleven miles of pipe to the two evaporation/infiltration ponds (Pond A and Pond B). There are two pumping stations associated with the pipeline (one in 200 E and one in 200 W). The pipeline is WIDS sitecode 600-291.
Waste Type:	Water
Waste Description:	Liquid waste is discharged to TEDF from the Plutonium Finishing Plant, 222-S Complex, T-Plant Complex, 284-W Power Plant, PUREX Plant, B-Plant, and 242-A-81 Water Services Building. Examples of waste include non-contact process cooling water, lab waste, steam condensate, air conditioning condensate, housekeeping water, outdoor sumps (rain water), reservoir overflow, boiler blowdown, sanitary sources (water softener, safety shower/eye wash, etc), floor drains, HVAC sanitary water, raw water, storm water, strainer backflush.
Code:	202-A HWSA
Classification:	Accepted
Names:	202-A HWSA; 202-A Hazardous Waste Storage Area
Reclassification:	Rejected (9/6/2000)
Type:	Storage Pad (<90 day)
Start Date:	1/1/1986
Status:	Inactive
End Date:	1/1/1996
Description:	All remaining 90 day storage areas were removed when PUREX was closed down and cleaned to meet the deactivation end point criteria prior to transition from Westinghouse Hanford Co. to Bechtel Hanford Inc. (BHI).
Location:	The site was located north of the 202-A Building and east of the 2714-A Chemical Warehouse in the 200-East Area.
Release Description:	There were no known releases from this site.
Related Sites/	This pad was related to the PUREX facility

Structures:**Waste Type:** Barrels/Drums/Buckets/Cans**Waste Description:** When this unit was active, typical wastes contained in the staging area over a 1-year period included approximately 1,000 kilograms (2,205 pounds) of flammable waste oils, 1,900 kilograms (4,190 pounds) of combustible waste oils, and 1,600 kilograms (3,530 pounds) of wastes unidentified prior to receipt of analysis.

Code: 202-A NU **Classification:** Accepted**Names:** 202-A NU; Elementary Neutralization Unit/202-A Building; PUREX; 202-A Neutralization Unit **Reclassification:** None**Type:** Neutralization Tank **Start Date:** 7/1/1986**Status:** Active **End Date:****Location:** The tank is located in the 202-A Building.**Waste Type:** Process Effluent**Waste Description:** The system treats process condensate. A nominal flow 2.7E+05 liters (72,000 gallons) per day, is neutralized in line from a pH of between 1 and 2 to a pH of approximately 4 by addition of potassium hydroxide. This stream then passes through a 26,500-liter (7,000-gallon) underground tank containing 27 metric tons (30 tons) of calcium carbonate rock (installed January 1987) for neutralization to a final pH of between 6 and 7. It is then discharged to the 216-A-45 Crib.

Code: 202-A-E-F11 **Classification:** Accepted**Names:** 202-A-E-F11; 202-A-TK-E-F11; PUREX Tank E-F11 **Reclassification:** None**Type:** Storage Tank **Start Date:** 1/15/1956**Status:** Inactive **End Date:****Description:** The unit has a 9,840-liter (2,600-gallon) capacity.**Location:** The tank is located in the PUREX Building.**Waste Type:** Process Effluent**Waste Description:** The unit contains ammoniacal (ammonia based) radioactive mixed waste (RMW) which is processed with sodium hydroxide (NaOH) and sodium nitrate (NaNO₃). Prior to September 1987, these wastes were sent to the 216-A-36B Crib. Currently, the waste is discharged to Tank G7 for neutralization.

Code: 202-A-E5 **Classification:** Accepted**Names:** 202-A-E5; 202-A-TK-E5; PUREX Tank E5 **Reclassification:** None**Type:** Neutralization Tank **Start Date:** 1/15/1956**Status:** Inactive **End Date:****Description:** The unit has a 18,900-liter (5,000 gallon) capacity.**Location:** The tank is located in the PUREX Building.**Waste Type:** Process Effluent**Waste Description:** The unit contains: 1) decladding wastes; 2) metathesis wastes; or 3) miscellaneous wastes including flushes with similar chemical makeups. Wastes are neutralized with sodium nitrate

(NaNO₃) and potassium hydroxide (KOH) or sodium hydroxide (NaOH) before going to double-shell underground storage tanks.

Code: 202-A-F15 **Classification:** Accepted
Names: 202-A-F15; 202-A-TK-F15; PUREX Tank F-15 **Reclassification:** None
Type: Neutralization Tank **Start Date:** 1/15/1956
Status: Inactive **End Date:**
Description: The unit has a 18,900-liter (5,000-gallon) capacity.
Location: The tank is located in the PUREX Building.
Waste Type: Process Effluent
Waste Description: The unit contains high-level acid wastes which are neutralized with sugar, sodium hydroxide (NaOH), and sodium nitrite (NaNO₂) before going to double-shell underground storage tanks.

Code: 202-A-F16 **Classification:** Accepted
Names: 202-A-F16; 202-A-TK-F16; PUREX Tank F16 **Reclassification:** None
Type: Neutralization Tank **Start Date:** 1/15/1956
Status: Inactive **End Date:**
Description: The unit has a 18,900-liter (5,000-gallon) capacity.
Location: The tank is located in the PUREX Building.
Waste Type: Process Effluent
Waste Description: The unit contains high-level acid wastes which are neutralized with sugar, sodium hydroxide (NaOH), and sodium nitrite (NaNO₂) before going to double-shell underground storage tanks.

Code: 202-A-F18 **Classification:** Accepted
Names: 202-A-F18; 202-A-TK-F18; PUREX Tank F18 **Reclassification:** None
Type: Neutralization Tank **Start Date:** 1/15/1956
Status: Inactive **End Date:**
Description: The unit has a 18,900-liter (5,000-gallon) capacity.
Location: The tank is located in the PUREX Building.
Waste Type: Process Effluent
Waste Description: The unit contains miscellaneous wastes collected from all sections of the plant. The dangerous wastes consist mainly of nitric acid (HNO₃). The wastes are neutralized with sodium hydroxide (NaOH) and sodium nitrite (NaNO₂) to a pH greater than 12.5 before going to double-shell underground storage tanks.

Code: 202-A-G7 **Classification:** Accepted
Names: 202-A-G7; 202-A-TK-G7; PUREX Tank G7 **Reclassification:** None
Type: Neutralization Tank **Start Date:** 1/15/1956
Status: Inactive **End Date:**
Description: The unit has a 53,000-liter (14,000-gallon) capacity.

Waste Type: Process Effluent
Waste Description: The unit receives ammonia distillate from Tank E-F11 and is neutralized with sodium hydroxide (NaOH) and sodium nitrite (NaNO₂) before going to double-shell underground storage tanks.

Code: 202-A-U3 **Classification:** Accepted

Names: 202-A-U3; PUREX Tank U3; 202-A-TK-U3 **Reclassification:** None

Type: Neutralization Tank **Start Date:** 1/15/1956

Status: Inactive **End Date:**

Description: The unit has a 30,280-liter (8,000-gallon) capacity.

Location: The tank is located in the PUREX Building.

Waste Type: Process Effluent

Waste Description: The unit contains miscellaneous wastes collected from all sections of the plant. The dangerous wastes consist mainly of nitric acid (HNO₃). The wastes are neutralized with sodium hydroxide (NaOH) and sodium nitrite (NaNO₂) to pH of greater than 12.5 before going to double-shell underground storage tanks.

Code: 202-A-U4 **Classification:** Accepted

Names: 202-A-U4; PUREX Tank U4; 202-A-TK-U4 **Reclassification:** None

Type: Neutralization Tank **Start Date:** 1/15/1956

Status: Inactive **End Date:**

Description: The unit has a 30,280-liter (8,000-gallon) capacity.

Location: The tank is located in the PUREX Building.

Waste Type: Process Effluent

Waste Description: The unit contains miscellaneous wastes collected from all sections of the plant. The dangerous wastes consist mainly of nitric acid (HNO₃). The wastes are neutralized with sodium hydroxide (NaOH) and sodium nitrite (NaNO₂) to pH of greater than 12.5 before going to double-shell underground storage tanks.

Code: 202-A-WS-1 **Classification:** Accepted

Names: 202-A-WS-1; PUREX Waste Piles **Reclassification:** None

Type: Storage **Start Date:** 1/1/1956

Status: Inactive **End Date:**

Description: This site is located in the PUREX Building on the canyon deck and F-Cell canyon floor.

Location: The pile of material is located inside the 202-A building.

Waste Type: Equipment

Waste Description: The PUREX Containment Building is permitted for the storage of waste designated TCLP toxic for lead (D008), cadmium (D006), and chromium, (D007) and toxic (WT01). Discarded process equipment removed from service in the PUREX Plant and known to have shielding, weights, and or counterweights containing elemental cadmium or lead was stored on the canyon deck within the containment building. However, this waste has been removed and placed on a burial box inside the PUREX Storage Tunnel 2. In November 1996, chromium contaminated concrete solids from the E-Cell floor were stored in F-Cell within the containment building as

well as a lead-lined remote camera assembly on the West Crane Maintenance Platform.

Code: 205-A **Classification:** Accepted
Names: 205-A; 205-A Silica Gel Facility **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1976

Description: The site is 2.4 meters (8 feet) high building constructed of transite, with nine tanks of various sizes inside the facility.

Location: The unit is located within the 203-A Basin, north of the PUREX canyon building. It is inside the PUREX facility fence.

Process Description: The Silica Gel facility was a prototype unit, placed in service in 1956 to prove process feasibility. The uranium solution from the solvent extraction systems often required further treatment to meet product specifications. Silica gel absorbed the zirconium and niobium contaminants, without significant loss of uranium. After successfully demonstrating the process, the 205-A unit was converted to product use. Another silica gel facility was also built at REDOX. Since the PUREX unit was not designed for continuous operation, uranium solutions from PUREX were often transferred to REDOX of treatment.

Waste Type: Process Effluent

Waste Description: The unit contains silica gel and process and flush solutions. The amount of radionuclides present is not known. There is less than 2,000 counts/minute smearable beta/gamma; 5 millirad/hour nonpenetrating, 1 millirem/hour penetrating and detectable alpha. The tanks are assumed to contain silica gel and may contain either process or flush solutions.

Code: 207-A-SOUTH **Classification:** Accepted
Names: 207-A-SOUTH; 207-A-SOUTH Retention Basin and Pump Pit; 207-A; 207-A Retention Basin; 207-A South **Reclassification:** None
Type: Retention Basin **Start Date:** 1/1/1977
Status: Inactive **End Date:** 1/1/1989

Description: The 207-A South basin consists of three, unlined concrete cells that are coated with a (white) polyurethane sealant. They are marked, but are no longer posted with radiological warning signs.

The cells were fed from the pump pit, located between the 207-A South and 207-A North basins. A 10-centimeter (4-inch) fill line entered each cell inside the basin structure. A 7.6-centimeter (3-inch) drain line exits the bottom of the each cell.

Location: The 207-A Retention Basins are located east of the 242-A Evaporator Building.

Process Description: When operating, the three cells of the 207-A South Basins were filled alternately, sampled, and discharged to the 216-A-37-1 Crib after meeting release specifications. The 242-A Evaporator could retrieve the liquid waste for reprocessing or storage in the tank farm, via line 300, if discharge specifications were not met. After the 207-A North and South basins ceased to operate, the effluent was diverted to the 200 Area Treated Effluent Disposal Facility.

Related Sites/Structures: The basins are associated with the 242-A Evaporator and the 216-A-37-1 Crib. The pipeline from the basin to the 216-A-37-1 crib is sitecode 200-E-232-PL. The pipelines from 242-A

Evaporator to the 207-A basins are sitecode 200-E-234-PL. The south basin distribution lines are sitecode 200-E-236-PL.

Waste Type: Steam Condensate

Waste The unit was used for the interim storage of the 242-A Evaporator process condensate to allow

Description: for sampling and analysis prior to being discharged to the 216-A-37-1 Crib.

The Following Sites Were Consolidated With This Site:

Code: 200-E-236-PL

Names: 200-E-236-PL; 207-A South Basin Distribution Lines; Lines 557, 558, 559, 560, 562, and 563

Code: 211-A NU

Classification: Accepted

Names: 211-A NU; Elementary Neutralization Unit/211-A Building; PUREX; 211-A Neutralization Unit

Reclassification: None

Type: Neutralization Tank

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1990

Location: The 211-A building is located adjacent to the north side of 202-A. The 211-A NU tank is located inside the 211-A Building.

Process Description: PUREX process water was required to be very pure. The 211-A building contained the demineralizer columns (deionizer units). When the deionizers became loaded, they were recharged with acidic and basic solutions. The spent acid and basic solutions were combined in the 211-A Neutralization Unit (tank). The pH was tested and adjusted until it was 7.0 pH. Then the solution was discharged to the chemical process sewer.

Waste Type: Chemicals

Waste Description: Approximately 318 kilograms (700 pounds) per year of 9% sulfuric acid is combined with 272 kilograms (600 pound) per year of sodium hydroxide within the water demineralizer columns during regeneration.

Code: 216-A-39

Classification: Accepted

Names: 216-A-39; 216-A-39 Crib; 216-A-39 Trench

Reclassification: None

Type: Crib

Start Date: 1/1/1966

Status: Inactive

End Date: 1/1/1966

Description: The site consists of a crib and two trenches dug from the north door of the 241-AX-801-A Building. The trenches extended to the brow of the north hill, then over the hill to the flat ground below. The trenches continued eastward 27.45 meters (90 feet). Later, a pipeline was added that connected the 241-AX-801-B building to the 216-A-39 crib. Drawing H-2-33295 shows the crib structures. Each crib has three SCH 40 pipes. The drawing also states the crib was covered with approximately 6 meters (20 feet) of dirt in 1973. The risers were extended above the new grade in May 1973.

Location: Site is located near the southeast corner of the 241-AZ tank farm, inside the tank farm fence.

Release Description: This crib was built in 1966 to accommodate a liquid release that contaminated the 241-AX-801-A building. A team was changing out a valve on the 241-AX-103 tank recirculator line. The radioactive line pressurized and resulted in a release to the floor of the instrument (241-AX-801-A) building. Dose rates from the release were greater than 5 rad per hour at a distance of 3 meters (10 feet). A trench, 0.9 meters (3 feet deep), was dug to receive the liquid. The trench extended from the north side of the 241-A-801-A building to the brow of the north hill, then

continued over the hill to the flat ground below. The trench extended eastward approximately 27.45 meters (90 feet). A hole was cut through the back side of the 801 Building and a fire hose was used to wash the contamination out the door and into the trench. The first trench was covered with dirt and a second trench was dug, parallel to the first, to receive a second rinsing of the 241-AX-801-A building floor. This trench was also backfilled. A residual dose rate remained on the floor of the building. It should be noted that the RHO-CD-673 document states the release occurred at the 241-AX-801-B building. Physical evidence found at the 241-AX-801-A building and interviews with long time tank farm employees has shown that the release actually occurred at the 241-AX-801-A building.

Process Description: The 216-A-39 originally consisted of two trenches that received liquid from a spill of radioactive material in June 1966. In 1969, a pipeline was added to connect the 241-AX-801B building to the crib.

Related Sites/ Structures: The crib is associated with the 241-AX-801-A and 241-AX-801-B buildings.

Waste Type: Process Effluent

Waste Description: The site originally received waste from a radioactive spill in the 241-AX-801-A Building (June 1966). The maximum dose rate from this release was 5 rad per hour at a distance of 3 meters (10 feet). Later, the crib received floor drainage via a pipeline from the 241-AX-801-B building.

Code: 242-A **Classification:** Accepted

Names: 242-A; 242-A Evaporator **Reclassification:** None

Type: Evaporator **Start Date:** 1/1/1977

Status: Active **End Date:**

Description: The 242-A Building contains the evaporator vessel, supporting process equipment, and the principal process components of the evaporator-crystallizer system. The building comprises two adjoining, structurally independent structures, designated A and B. Structure A houses the processing and service areas while structure B houses operating and personnel support areas.

Location: This Evaporator building is located adjacent to the south side of the 241-A Tank Farm, outside the tank farm fence. It is near the corner of 4th Street and Canton Ave.

Process Description: The 242-A Evaporator is used to treat mixed waste from the Double-Shell Tank System by removing water and most volatile organics. Two waste streams leave the 242-A Evaporator following the treatment process. The first waste stream, the concentrated slurry, is pumped back into the Double-Shell Tank System (Tank Farms AN, AW, and/or AP). The second waste stream, process condensate, is routed through condensate filters for treatment before release to the Liquid Effluent Retention Facility and receives final treatment at the Effluent Treatment Facility.

Related Sites/ Structures: The structures associated with the unit include: the 241-AN, the 241-AP, and the 241-AW Tank Farms, and the 207-A Retention Basins. The pipelines from 242-A to the 207-A basins are sitecode 200-E-234-PL.

Waste Type: Chemicals

Waste Description: Waste types include: dilute non-complexed radioactive waste, PUREX dilute miscellaneous waste, PUREX cladding removal waste, and complexed radioactive waste. Hazardous chemicals used include: sodium nitrate used to regenerate ion exchange column, sodium hydroxide used for decontamination applications, and the antifoam agent used in the evaporator vessel.

Code: 241-AN-A **Classification:** Accepted
Names: 241-AN-A; 241-AN-A Diversion Box **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1981
Status: Active **End Date:**

Description: This valve pit is fabricated of reinforced concrete. This valve pit accommodates pipes and jumpers and nozzles that go to different tanks. The valve pit is below grade with the cover block a few inches above grade.

Location: The unit is located inside the 241-AN Tank Farm fence, between the 241-AN-105 and 241-AN-106 tanks.

Process Description: The valve pit has two functions. It routes slurry from the 242-A Evaporator to the designated 241-AN tanks and routes supernate from other tank farms to the 241-AN tanks.

Related Sites/ Structures: This unit is associated with the 241-A Tank Farm, the 241-AN-101 Tank, and the 242-A Evaporator.

Waste Type: Process Effluent
Waste Description: This unit contains non-complexed waste, double-shell slurry waste, B Plant low-level waste, and PUREX low-level waste.

Code: 241-AN-B **Classification:** Accepted
Names: 241-AN-B; 241-AN-B Diversion Box **Reclassification:** None
Type: Valve Pit **Start Date:** 1/1/1981
Status: Active **End Date:**

Description: This valve pit is fabricated of reinforced concrete. This valve pit accommodates pipes and jumpers and nozzles that go to different tanks. The valve pit is below grade with the cover block a few inches above grade.

Location: The unit is located inside the 241-AN Tank Farm fence, between the 241-AN-102 and 241-AN-103 tanks.

Process Description: The valve pit has two functions. It routes slurry from the 242-A Evaporator to the designated 241-AN tanks and routes supernate from other tank farms to the 241-AN tanks. Waste material is routed through the 241-AN-B Valve Pit and then to the designated double-shell tanks. The 241-AN-B Valve Pit is connected by slurry lines and supernatant lines to the 241-AN-101, 241-AN-102, 241-AN-103 Double-Shell Tanks and the 241-AN-A Valve Pit.

Related Sites/ Structures: The unit is associated with the 241-A Tank Farm and the 241-AN-101 Tank.

Waste Type: Process Effluent
Waste Description: The unit contains non-complexed waste, double-shell slurry waste, B Plant low level waste, and PUREX low level waste.

Code: 241-AN-101 **Classification:** Accepted
Names: 241-AN-101; 241-AN-TK-101 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-101 Tank is located in the eastern portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-101 began service by receiving non-complexed waste from PUREX in September 1981. Non-complexed waste was received and transferred through this tank until September 1990 when it began receiving dilute non-complexed waste. During this time, the tank also received low-level waste from B Plant, decontamination waste from N Reactor, and dilute non-complexed waste from the 200 East Area Single-Shell Tanks. As of March 1994, the tank was receiving only dilute non-complexed waste. The tank is an active dilute receiver tank which receives non-complexed salt well waste.

Code: 241-AN-102 **Classification:** Accepted

Names: 241-AN-102; 241-AN-TK-102 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-102 Tank is located in the center portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-102 began service by receiving non-complexed waste from Tank 241-SY-102 in September 1981. The tank received non-complexed waste until December 1982. The tank received complexant concentrate waste from January 1983 until October 1983. From November 1983 until June 1984, the tank again received non-complexed waste. During 1984, the tank received low-level waste from PUREX. The tank received complexant concentrate waste from Tank 241-AW-101 from July 1984 until 1992 and has not received any waste since 1992. The tank is considered a concentrated waste holding tank.

Code: 241-AN-103 **Classification:** Accepted

Names: 241-AN-103; 241-AN-TK-103 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved, primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-103 Tank is located in the western portion of the 241-AN Tank Farm.

Process Description: The Double-shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-103 began service by receiving non-complexed waste from Tank 241-SY-102 in September 1981. The tank received non-complexed waste until February 1984. During 1983, the tank received low-level waste from B Plant and dilute non-complexed waste from the 200-East Area single shell tanks. The tank received double-shell slurry feed waste from March 1984 until April 1986. Since May 1986, the tank has contained double-shell slurry waste. The tank has not received any waste, other than wash water, since 1986. The tank is considered a concentrated waste holding tank.

Code: 241-AN-104 **Classification:** Accepted

Names: 241-AN-104; 241-AN-TK-104 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-104 Tank is located in the eastern portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-104 began service by receiving non-complexed waste in September 1981. The majority of the waste was sent from Tank 241-AW-102 during 1982. The tank continued to receive non-complexed waste until November 1982. The tank has contained double-shell slurry feed waste from December 1982 until the present. During 1983, the tank also received low-level waste from PUREX. The tank has not received waste since 1985. The tank is considered a concentrated waste holding tank.

Code: 241-AN-105 **Classification:** Accepted

Names: 241-AN-105; 241-AN-TK-105 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-105 Tank is located in the central portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-105 began service by receiving non-complexed waste in September 1981. The

tank continued to receive non-complexed waste until November 1982. The tank received double-shell slurry feed waste from Tanks 241-AW-102 and 241-AN-104 from December 1982 until 1985, when waste reception ceased. The tank is considered a concentrated waste holding tank.

Code: 241-AN-106 **Classification:** Accepted

Names: 241-AN-106; 241-AN-TK-106 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-106 Tank is located in the western portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-106 began service by receiving non-complexed waste in September 1981. The tank continued to receive non-complexed waste until January 1983. From February 1983 until February 1984, the tank received concentrated customer waste. The tank contained Hanford facility waste from March 1984 until May 1990. From June 1990 until the present, the waste contained in the tank has been designated as phosphate waste. The tank has not received any waste, other than wash water, since 1984. The supernatant was pumped to Tank 241-AP-102 during 1992. The tank is considered a concentrated waste holding tank.

Code: 241-AN-107 **Classification:** Accepted

Names: 241-AN-107; 241-AN-TK-107 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 9/1/1981

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome was placed below grade for shielding.

Location: The 241-AN-107 Tank is located in the northwestern portion of the 241-AN Tank Farm.

Process Description: The Double-Shell Tank system is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AN-107 began service by receiving non-complexed waste in September 1981 from Tank 241-AN-102. The tank continued to receive non-complexed waste until June 1983. From July 1983 until the present, the tank has contained complexant concentrate waste, most of which was received from Tank 241-AZ-102 during 1983. The tank has not received any waste since 1986. The tank is considered a concentrated waste holding tank.

Code: 241-AP VP **Classification:** Accepted

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-102 tank is located in the northeast corner of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AP-201 began service by receiving Hanford facility waste in July 1986. The tank received Hanford facility waste until May 1990. During 1988 and 1989, waste was transferred from the tank to the grout vaults. The tank received waste from PUREX during the third and fourth quarters of 1989. The tank has contained dilute non-complexed waste since June 1990. The tank has not received any waste since 1992. The tank is currently an inactive, grout feed tank containing excess water from the grout facility.

Code: 241-AP-103 **Classification:** Accepted

Names: 241-AP-103; 241-AP-TK-103 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 1/1/1986

Status: Active **End Date:**

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-103 tank is located on the west side of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AP-103 began service by receiving non-complexed waste in July 1986. The tank received non-complexed waste until May 1990. The tank received waste from PUREX during the first, second, and third quarters of 1988. From June 1990 until the present, the tank has contained dilute non-complexed waste. The tank has not received waste since 1991. The tank is currently an inactive dilute receiver tank.

Code: 241-AP-104 **Classification:** Accepted

Names: 241-AP-104; 241-AP-TK-104 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 1/1/1986

Status: Active **End Date:**

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-104 tank is located on the east side of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated

Description: on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AP-104 began service by receiving Hanford Facility waste in July 1986 and continued receiving this waste until May 1990. The tank received decontamination waste from N Reactor from the first quarter until the third quarter of 1987. From June 1990 until the present, the tank contained dilute non-complexed waste. Currently, the tank is an inactive grout feed tank.

Code: 241-AP-105

Classification: Accepted

Names: 241-AP-105; 241-AP-TK-105

Reclassification: None

Type: Double-Shell Tank

Start Date: 1/1/1986

Status: Active

End Date:

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-105 tank is located in the southwest portion of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AP-105 began service by receiving non-complexed waste in July 1986. The tank received non-complexed waste until June 1989. From July 1989 until the present, the tank has contained double-shell slurry feed waste. The tank has not received waste since 1989. The tank is currently an inactive concentrated waste holding tank.

Code: 241-AP-106

Classification: Accepted

Names: 241-AP-106; 241-AP-TK-106

Reclassification: None

Type: Double-Shell Tank

Start Date: 1/1/1986

Status: Active

End Date:

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-106 tank is located in the southwest portion of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 24-AP-106 began service by receiving Hanford Facility waste in July 1986. The tank continued to receive Hanford Facility waste until September 1986. From October 1986 until May 1990, the tank received non-complexed waste. From June 1990 until the present, the tank has contained dilute non-complexed waste. The tank has not received waste since 1989. The tank is currently an inactive dilute receiver tank.

Code: 241-AP-107 **Classification:** Accepted
Names: 241-AP-107; 241-AP-TK-107 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1986
Status: Active **End Date:**

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-107 tank is located in the southwest corner of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: The 241-AP-107 began service by receiving double-shell slurry feed waste in July 1986. The tank received double-shell slurry feed waste until September 1986. From October 1986 until May 1990, the tank received non-complexed waste. The tank received waste from PUREX during 1990. The tank has contained dilute non-complexed waste from June 1990 until the present. The tank has not received waste since 1990. The tank is currently an active dilute receiver tank containing waste that is being concentrated by the 242-A Evaporator.

Code: 241-AP-108 **Classification:** Accepted
Names: 241-AP-108; 241-AP-TK-108 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1986
Status: Active **End Date:**

Description: The tank is a double-shell tank with an outer structure of reinforced concrete lined with carbon steel. The primary tank is carbon steel located within the secondary liner. The tanks are separated by an annular space. The tank is placed on a concrete foundation. The dome is below grade for shielding.

Location: The 241-AP-108 tank is located in the southeast corner of the 241-AP Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: The tank has contained dilute non-complexed waste from June 1990 until the present. The tank is currently an active dilute receiver tank with waste that is being concentrated by the 242-A Evaporator. From 1990 until 1992, the tank received waste from PUREX. From October 1986 until May 1990, the tank received non-complexed waste. Tank 241-AP-108 began service by receiving double-shell slurry feed waste in July 1986, and continued to receive this waste until September 1986.

Code: 204-AR **Classification:** Accepted
Names: 204-AR; 204-AR Waste Unloading Station; 204-AR-TK-1 **Reclassification:** None

Type:	Loading Dock	Start Date:	1/1/1982
Status:	Active	End Date:	
Description:	The 204-AR Unloading Facility is a reinforced concrete structure. The structure includes a shielded railcar unloading room, floor drains, a 5700 liter (1500 gallon) capacity catch tank, transfer pumps and four chemical storage tanks. The chemical tanks contain caustic, nitrite and pH buffer solutions.		
Location:	This unit is located near the corner of 4th Street and Buffalo Ave, northwest of the 241-AX-151 Diversion Box and south of the 244-AR Vault.		
Process Description:	The 204-AR Facility receives railroad tank cars of liquid radioactive waste to be remotely unloaded inside a fully enclosed, heated, and ventilated building. The structure is a versatile facility that allows the pumping, sampling, and sluicing of the tank cars. Sluicing removes sludge buildup from the tanks and is done during or after the material is pumped out. When samples results show the contents of the railroad car or the catch tank do not meet tank farm specifications, chemical adjustments are made inside the rail car or catch tank. Liquids in the catch tank is periodically to the tank farm on a batch basis. Liquid in excess of the catch tank capacity overflows into the sump pit, that can be pumped to the 241-A-A valve pit.		
Related Sites/ Structures:	The facility is includes four chemical storage/makeup tanks and a catch tank (204-AR-TK-1).		
Waste Type:	Storage Tank		
Waste Description:	The unit receives wastes generated from decontamination and regeneration operations in the 100 and the 200 Areas; from recovery, fuels fabrication, and laboratory operations in the 200 and the 300 Areas; and from decontamination operations in the 400 Area. The waste is chemically adjusted in-line during pump-out to double-shell underground storage tanks to meet corrosion specifications.		

Code:	241-AW-A	Classification:	Accepted
Names:	241-AW-A; 241-AW-A Diversion Box; 241-AW-A Valve Pit	Reclassification:	None
Type:	Valve Pit	Start Date:	1/1/1980
Status:	Active	End Date:	
Description:	The 241-AW valve pits are fabricated from reinforced concrete. The cover block for each pit is made in two sections. Each valve pit has a floor drain. Drain lines empty into tank 241-AW-102. All concrete and ferrous materials are treated with protective coating.		
Location:	The valve pit is located inside the 241-AW Tank Farm, between the 241-AW-101 and 241-AW-103 tanks.		
Process Description:	The 241-AW Tank Farm valve pits are used in three ways: (1) to route slurry from 242-A to designated 241-AW tanks; (2) to route supernatant between tanks in 241-AW Tank Farm or to other tank farms from 241-AW tanks; and (3) to route PUREX nonaging waste to 241-AW tanks.		
Related Sites/ Structures:	The unit is associated with 241-AW Tank Farm, the 241-AW-102 Tank and 200-E-210-PL.		
Waste Type:	Process Effluent		
Waste Description:	Low-level PUREX waste, complexant concentrate waste, complexed waste and dilute non-complexed waste, and non-complexed waste was received and distributed to all tanks via this		

diversion box.

Code: 241-AW-B **Classification:** Accepted

Names: 241-AW-B; 241-AW-B Diversion Box; 241-AW-B Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1980

Status: Active **End Date:**

Description: The 241-AW valve pits are fabricated from reinforced concrete. The cover block for each pit is made in two sections. Each valve pit has a floor drain. Drain lines empty into tank 241-AW-102. All concrete and ferrous materials are treated with protective coating.

Location: The valve pit is located inside the 241-AW Tank Farm, between the 241-AW-101 and 241-AW-103 tanks..

Process Description: The 241-AW Tank Farm valve pits are used in three ways: (1) to route slurry from 242-A to designated 241-AW tanks; (2) to route supernatant between tanks in 241-AW Tank Farm or to other tank farms from 241-AW tanks; and (3) to route PUREX non-aging waste to 241-AW tanks.

Related Sites/Structures: The unit is associated with 241-AW Tank Farm, 241-AW-102 Tank and 200-E-210-PL.

Waste Type: Process Effluent

Waste Description: Low-level PUREX waste, complexant concentrate waste, complexed waste and dilute non-complexed, double-shell slurry waste, and non-complexed waste was received and distributed to all tanks via this diversion box.

Code: 241-AW-101 **Classification:** Accepted

Names: 241-AW-101; 241-AW-TK-101 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 1/1/1980

Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome is below grade for shielding.

Location: The 241-AW-101 tank is located in the northwest corner of the 241-AW Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank

Waste Description: Tank 241-AW-101 began service by receiving non-complexed waste in July 1980. The tank continued to receive non-complexed waste until November 1981, and again from December 1982 until March 1983. From December 1981 until November 1982, the tank received dilute double-shell slurry feed waste. The tank received complexant concentrate waste from April 1982 until June 1984. From July 1984 until April 1986, the tank again received non-complexed waste. The tank received waste from PUREX and dilute non-complexed waste from the 200-East Area Single-Shell Tanks from 1984 until 1986. The tank contained double-shell slurry feed waste from May 1986 until the present. The tank has not received waste since 1986. The tank is currently an inactive concentrated waste holding tank.

Code: 241-AW-102 **Classification:** Accepted
Names: 241-AW-102; 241-AW-TK-102 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1980
Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome is below grade for shielding.

Location: The 241-AW-102 tank is located in the northeast corner of the 241-AW Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank
Waste Description: Tank 241-AW-102 began service by receiving non-complexed waste in July 1980. The tank received non-complexed waste until May 1983. The tank received evaporator feed waste from June 1983 until December 1984. During 1983 and 1984, the tank received dilute non-complexed waste from the 200-East Area Single-Shell Tanks. Between January 1985 and April 1986, the tank received Hanford Facility waste. From May 1986 until May 1990, the tank received non-complexed waste from other Double-Shell Tanks. The tank has contained dilute non-complexed waste from June 1990 until the present. The tank is currently an active, evaporator feed tank for the 242-A Evaporator.

Code: 241-AW-103 **Classification:** Accepted
Names: 241-AW-103; 241-AW-TK-103 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1980
Status: Active **End Date:**

Description: The unit is comprised of a heat-treated, stress-relieved primary steel liner and a nonstress-relieved outer steel liner, both inside the reinforced concrete shell. The top of the dome is below grade for shielding.

Location: The 241-AW-101 tank is located on the west side of the 241-AW Tank Farm.

Process Description: The Double-Shell Tank System is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Waste Type: Storage Tank
Waste Description: Tank 241-AW-103 began service by receiving non-complexed waste in July 1980. From August 1980 until November 1981, the tank received double-shell slurry feed waste. The tank received PUREX waste from 1983 until 1988. From December 1981 until March 1983, the tank received dilute double-shell slurry feed waste. During April and May 1983, the tank received non-complexed waste from June 1983 until May 1990. From June 1990 until the present, the tank has contained dilute non-complexed and PUREX neutralized cladding removal waste. The tank has not received waste since 1992. The tank is currently an inactive dilute receiver tank.

Code: 241-AW-104 **Classification:** Accepted
Names: 241-AW-104; 241-AW-TK-104 **Reclassification:** None

Code: 241-AX-151:3
Names: 241-AX-151:3; 241-AX-151-TK-E; 241-AX-151 Diverter Tank E

Code: 241-AX-151:4
Names: 241-AX-151:4; 241-AX-151-TK-F; Diverter Tank F

Code: 241-AX-151:5
Names: 241-AX-151:5; 241-AX-151-TK-G; Diverter Tank G

Code: 241-AX-151:1 **Classification:** Accepted

Names: 241-AX-151:1; 241-AX-151CT; IMUST; **Reclassification:** None
Inactive Miscellaneous Underground Storage
Tank; 241-AX-151 Catch Tank

Type: Diversion Box **Start Date:**

Status: Inactive **End Date:**

Description: The catch tank is a 41,640 liter (11,000 gallon) stainless steel lined catch tank located below the four diverter tanks inside the 241-AX-151 Diverter Station. The catch tank received drainage from the diverter tanks, cells and pump pit. The contents of the catch tank could be jetted to diverter tank E or F. The catch tank contains 11,150 liters (2946 gallons) of supernate waste that is anticipated to consist of waste similar to that contained in AX tank farm. The capacity of the catch tank is approximately 12,200 gallons (per RPP-RPT-31102).

The SubSite is Part Of:

Code: 241-AX-151

Names: 241-AX-151; 241-AX-151 Diversion Box; 241-AX-151 Diverter Station; IMUST; Inactive
Miscellaneous Underground Storage Tank

Code: 241-AX-151:2 **Classification:** Accepted

Names: 241-AX-151:2; 241-AX-151-TK-D; 241-AX-151 **Reclassification:** None
Diverter Tank D

Type: Diversion Box **Start Date:**

Status: Inactive **End Date:**

Description: Tank D is a 76.2 centimeter (30 inch) diameter stainless steel tank that is 132 centimeters (52 inches) high. It is located within a concrete cell with a stainless steel liner on the cell floor, in the 241-AX-151 Diverter Station. The cell is equipped with a diverter mechanism. The tank has a 602 liter (159 gallon) capacity. The tank was used in conjunction with the other three diverter tanks to provide waste routing from PUREX to the A, AX and AY Tank Farms and the 244-AR Vault.

The SubSite is Part Of:

Code: 241-AX-151

Names: 241-AX-151; 241-AX-151 Diversion Box; 241-AX-151 Diverter Station; IMUST; Inactive
Miscellaneous Underground Storage Tank

Code: 241-AX-151:3 **Classification:** Accepted

Names: 241-AX-151:3; 241-AX-151-TK-E; 241-AX-151 **Reclassification:** None
Diverter Tank E

Type: Diversion Box **Start Date:**

Status: Inactive**End Date:**

Description: Tank E is a 76.2 centimeter (30 inch) diameter stainless steel tank that is 132 centimeters (52 inches) high. It is located within a concrete cell with a stainless steel liner on the cell floor, in the 241-AX-151 Diverter Station. The cell is equipped with a diverter mechanism. The tank has a 602 liter (159 gallon) capacity. The tank was used in conjunction with the other three diverter tanks to provide waste routing from PUREX to the A, AX and AY Tank Farms and the 244-AR Vault.

The SubSite is Part Of:**Code:** 241-AX-151**Names:** 241-AX-151; 241-AX-151 Diversion Box; 241-AX-151 Diverter Station; IMUST; Inactive Miscellaneous Underground Storage Tank

Code: 241-AX-151:4**Classification:** Accepted**Names:** 241-AX-151:4; 241-AX-151-TK-F; Diverter Tank F**Reclassification:** None**Type:** Diversion Box**Start Date:****Status:** Inactive**End Date:**

Description: Tank F is a 76.2 centimeter (30 inch) diameter stainless steel tank that is 132 centimeters (52 inches) high. It is located within a concrete cell with a stainless steel liner on the cell floor, in the 241-AX-151 Diverter Station. The cell is equipped with a diverter mechanism. The tank has a 602 liter (159 gallon) capacity. The tank was used in conjunction with the other three diverter tanks to provide waste routing from PUREX to the A, AX and AY Tank Farms and the 244-AR Vault.

The SubSite is Part Of:**Code:** 241-AX-151**Names:** 241-AX-151; 241-AX-151 Diversion Box; 241-AX-151 Diverter Station; IMUST; Inactive Miscellaneous Underground Storage Tank

Code: 241-AX-151:5**Classification:** Accepted**Names:** 241-AX-151:5; 241-AX-151-TK-G; Diverter Tank G**Reclassification:** None**Type:** Diversion Box**Start Date:****Status:** Inactive**End Date:**

Description: Tank G is a 76.2 centimeter (30 inch) diameter stainless steel tank that is 132 centimeters (52 inches) high. It is located within a concrete cell with a stainless steel liner on the cell floor, in the 241-AX-151 Diverter Station. The cell is equipped with a diverter mechanism. The tank has a 602 liter (159 gallon) capacity. The tank was used in conjunction with the other three diverter tanks to provide waste routing from PUREX to the A, AX and AY Tank Farms and the 244-AR Vault.

The SubSite is Part Of:**Code:** 241-AX-151**Names:** 241-AX-151; 241-AX-151 Diversion Box; 241-AX-151 Diverter Station; IMUST; Inactive Miscellaneous Underground Storage Tank

Code: 241-AX-152CT**Classification:** Accepted

Names: 241-AX-152CT; 241-AX-152-CT Catch Tank **Reclassification:** Consolidated (5/3/2006)
Type: Catch Tank **Start Date:** 1/1/1965
Status: Inactive **End Date:**
Description: The site is an underground catch tank. It is constructed of 0.76 meter (2.5 foot) thick concrete walls. The tank walls and floor are lined with stainless steel. The catch tank is under the diverter station.
Location: The 241-AX-152 Catch Tank and Diverter Station are located in the western portion of the 241-AX Tank Farm.
Related Sites/ Structures: The Catch tank is associated with the 241-AX-152 Diverter Station. The diverter station and the catch tank are part of the same structure. The drain line is line V713.
Waste Type: Process Effluent
Waste Description: This unit transfers mixed waste solutions from processing and decontamination operations. Volumes are variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.

The Site Was Consolidated With:

Code: 241-AX-152DS
Names: 241-AX-152DS; 241-AX-152-DS Diverter Station; Line V713; 241-AX-152 Diverter Station

Code: 241-AX-155 **Classification:** Accepted
Names: 241-AX-155; 241-AX-155 Diversion Box; Line V713 **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1983
Status: Inactive **End Date:**
Description: The surface features of the diversion box have been sprayed with a weather protective coating.
Location: This 241-AX-155 Diversion Box is located inside the 241-AY Tank Farm, adjacent to the 241-AX/241-AY dividing fence.
Related Sites/ Structures: This unit is associated with the 241-AX, 241-AY and the 241-AZ tank farms and the 241-AX-152 diversion box. Line V713 drains to 241-AX-152.
Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation. Lead shielding may also be contained inside the diversion box.
Waste Type: Equipment
Waste Description: It is estimated that approximately 50 pounds (23 kilograms) of waste lead is stored in each diversion box.

Code: 241-AY-101 **Classification:** Accepted
Names: 241-AY-101; 241-AY-TK-101 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1971
Status: Active **End Date:**
Description: The unit is composed of a heat-treated, stress-relieved primary steel liner and a nonstressed-relieved secondary steel liner, both inside a reinforced concrete shell. The dome is located

below grade for shielding purposes.

Location: The 241-AY-101 tank is located on the north end of the 241-AY Tank Farm.

Process Description: The tank is used for interim storage of waste generation on the Hanford Facility.

Related Sites/ Structures: Structures associated with this tank include leak detection, monitoring and radiation instrumentation, ventilation systems, and risers

Waste Type: Storage Tank

Waste Description: Dilute complexed waste is characterized by a high content of organic carbon including organic complexants, including: ethylenediaminetetra-acetic acid, citric acid, and hydroxyethyl-ethylenediaminetriacetic acid, being the major complexants used. Main sources of dilute complexed waste in the double shell tank system are saltwell liquid inventory.

Code: 241-AY-102 **Classification:** Accepted

Names: 241-AY-102; 241-AY-TK-102 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 1/1/1972

Status: Active **End Date:**

Description: The unit is composed of a heat-treated, stress-relieved primary steel liner and a nonstressed-relieved secondary steel liner, both inside a reinforced concrete shell. The dome is located below grade for shielding purposes.

Location: The 241-AY-102 tank is located in the center of the 241-AY Tank Farm.

Process Description: The tank is used for interim storage of liquid mixed waste generated on the Hanford Site.

Related Sites/ Structures: Structures associated with this tank include leak detection monitoring and radiation instrumentation, ventilation systems and risers.

Waste Type: Storage Tank

Waste Description: The unit has received neutralized high-level waste and double-shell slurry feed and is currently a dilute noncomplexed waste receiver tank. Prior to evaporator processing, samples are taken and analyzed for parameters such as visual appearance; percent solids; exotherms or endotherms; total organic carbon; gamma energy spectrum; weight percent water; pH; specific gravity; viscosity; and for the specific ions Al, OH, Cl, CO₃, F, Na, NO₂, NO₃, Pm, PO₄, Pu, SO₄, Sr, Am, and Np. The unit received supernatant consisting of double-shell slurry feed and noncomplexed waste from A and BX tank farms.

Code: 241-AY-151 **Classification:** Accepted

Names: 241-AY-151; 241-AY-151 Diversion Box; 241-AY-151 Pump Out Pit **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1975

Status: Inactive **End Date:**

Description: This unit is an underground, reinforced concrete structure. It contains four PUREX style nozzles.

Location: The 241-AY-151 is located in the southern portion of the 241-AY Tank Farm.

Process Description: This unit was used to transport radioactive waste solutions between storage and process facilities.

Related Sites/ Structures: The unit is associated with single shell Tank Farms 241-A and 241-AX.

Waste Type: Chemicals
Waste Description: The diversion box contains PUREX organic wash, aging PUREX, PUREX acid, and B Plant high level wastes.

Waste Type: Process Effluent
Waste Description: The diversion box transferred liquid process waste between the processing plants and the tank farms. Lead shielding may also be contained inside the diversion box.

Code: 241-AZ VP **Classification:** Accepted
Names: 241-AZ VP; 241-AZ Valve Pit **Reclassification:** None
Type: Valve Pit **Start Date:**
Status: Active **End Date:**

Description: The valve pit surface features include a cement structure extending a few inches above the ground, with white cover blocks. T-handles and instrumentation extend through the cover blocks.

Location: The valve pit is located east of 241-AZ-101, inside the tank farm fence.

Process Description: The 241- AZ Valve Pit distributes waste between the 200 East Area double shell tank farms. The AZ valve pit has transfer lines internal to the AY and AZ Tank Farms (line SN-633 to 241-AY-02A pump pit, Floor Drain to AZ-101, and line SN-632 to 241-AZ-01A pump pit) and external transfer lines (line SN-630 to 241-AN-01A pump pit and line SN-637 to 241-AP-A valve pit). This AZ valve pit is RCRA compliant and is active.

Code: 241-AZ-101 **Classification:** Accepted
Names: 241-AZ-101; 241-AZ-TK-101 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1976
Status: Active **End Date:**

Description: The unit is composed of a heat-treated, stress-relieved primary steel liner and a non-stressed-relieved secondary steel liner, both inside a reinforced concrete shell. The dome is below grade for shielding purposes.

Location: The 241-AZ-101 tank is located near the northeast corner of the 241-AZ Tank Farm.

Process Description: The Double-Shell tank system is used for the interim storage of liquid mixed waste generated on the Hanford facility.

Related Sites/ Structures: The tank contains air lift circulators, heating coils, drains, risers, and ports.

Waste Type: Storage Tank
Waste Description: Tank 241-AZ-101 began service by receiving evaporator waste in 1976. The tank continued to receive evaporator waste until 1977. From 1978 until September 1980, the tank received complexed waste, double-shell slurry feed waste, non-complexed waste, water, evaporator waste, residual liquor, and complexant concentrate waste. The tank received non-complexed waste from October 1980 until January 1984. From 1981 until 1986, the tank received waste

from PUREX. The tank has contained aging waste from February 1984 until the present. The tank is currently an inactive, concentrated waste holding tank that receives only condensate from other aging waste tanks.

Code: 241-AZ-102 **Classification:** Accepted
Names: 241-AZ-102; 241-AZ-TK-102 **Reclassification:** None
Type: Double-Shell Tank **Start Date:** 1/1/1976
Status: Active **End Date:**

Description: The unit is composed of a heat-treated, stress-relieved primary steel liner and a nonstressed-relieved secondary steel liner, both inside a reinforced concrete shell. The dome is below grade for shielding purposes.

Location: The 241-AZ-102 tank is located near the northwest corner of the 241-AZ Tank Farm

Process Description: The double-shell tank system is used for the interim storage of liquid mixed waste generated on the Hanford Facility.

Related Sites/ Structures: This tank contains air lift circulators, heating coils, drains, and nozzles.

Waste Type: Storage Tank

Waste Description: The tank is currently an inactive, dilute receiver tank that receives only condensate from other aging waste tanks. From April 1986 until the present, the tank has contained aging waste. The tank received waste from PUREX from 1986 until 1990. From February 1984 until February 1986, the tank received non-complexed waste. The tank received complexant concentrate waste from 1978 until November 1983. During December 1983 and January 1984, the tank received complexed waste. During 1977, the tank received residual liquor waste. Tank 241-AZ-102 began service by receiving water in 1976 and was labeled as a spare. The tank received evaporator waste from 1976 until 1977.

Code: 241-AZ-151CT **Classification:** Accepted
Names: 241-AZ-151CT; 241-AZ-151 Catch Tank **Reclassification:** Consolidated (5/3/2006)
Type: Catch Tank **Start Date:** 1/1/1977
Status: Inactive **End Date:**

Description: The catch tank is not visible from the surface. The catch tank portion is constructed below the diverter station.

Location: The 241-AZ-151 diverter station and catch tank are located southwest of 241-AZ-102 tank, inside the 241-AZ Tank Farm fence.

Process Description: The 241-AZ-151 Diverter Station structure transfers radioactive solutions, from various processing and decontamination operations, to tank farm tanks and facilities. Multiple transfer lines enter a 189 liter (50 gallon) tank in the diverter station. A spigot from the tank is rotated to engage in one of several pipe terminal openings to complete a desired routing. Containment is provided by the concrete walls, floor and cover blocks. The 241-AZ-151 Catch Tank is located directly below the receiving tank to contain transfer leakage. The catch tank (catch basin) has a concrete floor that slopes to a sump and collects leakage from both the pump pit and diverter room portions of the diverter station.

Related Sites/ Structures: The 241-AZ-151 Diverter Station structure, which includes the diverter station and the catch

Structures: tank, is associated with the 241-AZ Tank Farm tanks and facilities. The catch tank portion is constructed below the diverter station.

Waste Type: Process Effluent

Waste Description: This unit was used for transfer of mixed waste solutions from processing and decontamination operations. In 1994, it contained 15846 liters (4,170 gallons) of waste. In 2000, it contained 8037 liters (2115 gallons). The Tank Waste Summary documents indicate the diverter station and catch basin are active and the liquid volume changes daily. The liquid is pumped to the 241-AZ-102 tank as needed. Lead shielding may also be contained inside the diversion box.

The Site Was Consolidated With:

Code: 241-AZ-151DS

Names: 241-AZ-151DS; 241-AZ-151-DS Diverter Station; 241-AZ-151 Diverter Station

Code: 241-AZ-151DS

Classification: Accepted

Names: 241-AZ-151DS; 241-AZ-151-DS Diverter Station; 241-AZ-151 Diverter Station

Reclassification: None

Type: Diversion Box

Start Date: 1/1/1976

Status: Inactive

End Date:

Description: The diverter station is an underground reinforced concrete structure. The catch tank is located under the 241-AZ-151DS Diverter Station (Drawing H-2-67256). It is part of the diverter station structure.

Location: 241-AZ-151 Diverter Station is located southwest of 241-AZ-102 tank, inside the 241-AZ Tank Farm fence.

Process Description: The 241-AZ-151 Diverter Station transfers radioactive solutions, from processing and decontamination operations, to various tank farm tanks and facilities. Multiple transfer lines enter a small, 189 liters (50 gallons) tank. A spigot from the tank is rotated to engage in one of several pipe terminal openings to complete a desired routing. Containment is provided by the concrete walls, floor and cover blocks. The 241-AZ-151 Catch Tank is located directly below the receiving tank to contain transfer leakage. The catch tank is located under the 241-AZ-151DS Diverter Station (Drawing H-2-67256). It is part of the diverter station structure.

Related Sites/Structures: The 241-AZ-151 Diverter Station and catch tank are associated with the 241-AZ Tank Farm, the AZ Loop Seal, and the 241-AZ-151 Catch Tank.

Waste Type: Process Effluent

Waste Description: This unit was used to transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operation. The types of waste received by this unit include: aging waste, concentrated complexant, double-shell slurry feed, and non-complexed waste. In 1994, it contained 15846 liters (4,170 gallons) of waste. In 2000, it contained 8037 liters (2115 gallons). The Tank Waste Summary documents indicate the diverter station and catch basin are active and the liquid volume changes daily.

The Following Sites Were Consolidated With This Site:

Code: 241-AZ-151CT

Names: 241-AZ-151CT; 241-AZ-151 Catch Tank

Code: 241-AZ-152

Classification: Accepted

Names: 241-AZ-152; 241-AZ-152 Diversion Box; 241-AZ-152 Sluice Transfer Box

Reclassification: None

Description: transfer pumps, instrument trees). There are no jumpers or transfer lines that come into the pit. Should any liquid be found in the pit a jet pump could be installed in the pits sump to pump the liquid out.

Code: 216-B-3A	Classification: Accepted
Names: 216-B-3A; B Pond First Expansion Lobe; B Pond Lobe A; West Expansion Lobe	Reclassification: Closed Out (6/27/1995)
Type: Pond	Start Date: 1/1/1983
Status: Inactive	End Date: 1/1/1994

Description: The site is a pond that was used for overflow from 216-B-3. The unit is roughly rectangular with approximately 4.5 hectares (11 acres) of surface area. It is inactive and dry. It was sampled and released from radiological controls with the exception of the percolation trench that is posted as a Soil Contamination Area.

Location: The site is located east of the 200 East Area perimeter fence. It is directly east of 216-B-3 Main Pond.

Process Description: The 216-B-3A was constructed to receive overflow from the 216-B-3 Main Pond due to the increased effluent discharge from the restart of the Plutonium Uranium Extraction (PUREX) plant (202-A). The 216-B-3A Overflow Pond was connected to the 216-B-3 Main Pond by the 216-B-351 Spillway. The spillway was designed with a manually operated slide gate in the headwall. The water flowed from the main pond, through the culvert, down a 0.61-meter (2-foot) wide, concrete-lined ditch, to a fiberglass reinforced 0.3-meter (1-foot) flume, to the overflow pond. The pond operated from October 1983 to January 1984, when the dike between the 216-B-3A and 216-B-3B ponds failed (Occurrence Report #84-02). Prior to the dike failure, the 216-B-3B Pond had never been used. All the discharge from the failed dike was contained in the 216-B-3B Pond. In response to the incident, the 216-B-3A and 216-B-3B Ponds were isolated. Effluent flow to the 216-B-3 Main Pond was reduced. A trench was dug in the 216-B-3A Pond to increase its infiltration rate. The trench measured 182 meters (600 feet) by 9 meters (30 feet) and was 2 meters (6 feet) deep. The debris from the dike failure was removed from the 216-B-3B Pond and a series of trenches were dug to increase its infiltration rate. Both 216-B-3A and 216-B-3B Ponds were fully operational by June 1984. In April 1994, discharges to the main pond and 216-B-3A lobe ceased and all effluent was rerouted to the 216-B-3C lobe via a pipeline.

Related Sites/Structures: The site is associated with the PUREX facility, the 216-B-3 Pond and UPR-200-E-14.

Waste Type: Process Effluent

Waste Description: The site received overflow from the 216-B-3 Main Pond. Potential sources include 221-B steam condensate and process cooling water, 284-E Powerhouse water, 244-CR, 244-AR and 242-A cooling water, 202-A process, condenser, and air sampler vacuum pump cooling water, 202-A chemical sewer, fractionator condensate, and WESF cooling water.

Closure Info: The 216-B-3A lobe was decommissioned and interim stabilized along with the 216-B-3 Main Pond and 216-B-3-3 Ditch. In 1994, after the pond was allowed to dry, the site was surveyed with USRADS and GM/P-11 probe surveys. Surface soil samples and samples from a depth of 18 inches were collected from six locations. The pond was downposted to no posting with the exception of the percolation trench in the bottom of the pond, which was posted as an Soil Contamination Area due to elevated background levels identified using Sodium Iodide detectors. Ten acres (4.0 hectares) was downposted to no posting and one acre (0.4 hectares) at the percolation trench was posted as a Soil Contamination Area.

Code: 216-B-3B	Classification: Accepted
Names: 216-B-3B; B Pond Lobe B; B Pond Second Expansion Lobe; East Expansion Lobe	Reclassification: Closed Out (6/27/1995)
Type: Pond	Start Date: 1/1/1983
Status: Inactive	End Date: 1/1/1995
Description:	The unit is roughly rectangular with approximately 4.4 hectares (11 acres) of surface area. It is dry with a small radiological area in the northwest corner. The 216-3A, 3B and 3C Expansion ponds make up a separate RCRA TSD Unit.
Location:	The site is located east of the 200 Area perimeter fence. It is southeast of 216-B-3 Main Pond, adjacent to the east side of the 216-B-3A overflow pond .
Process Description:	The 216-B-3A and 216-B-3B Expansion Ponds were built in 1983 to receive overflow from the 216-B-3 Main Pond due to increased discharges of effluent from the restart of PUREX. In January 1984, the dike between the 216-B-3A and 216-B-3B ponds failed. Prior to the dike failure, the 216-B-3B Pond had never been used. All the discharge from the failed dike was contained in the 216-B-3B Pond. In response to the incident, the 216-B-3A and 216-B-3B Ponds were isolated. Effluent flow to the 216-B-3 Main Pond was reduced. A trench was dug in the 216-B-3A Pond to increase its infiltration rate. The trench measured 182 meters (600 feet) by 9 meters (30 feet) and was 2 meters (6 feet) deep. The debris from the dike failure was removed from the 216-B-3B Pond and a series of trenches were dug to increase its infiltration rate. Both 216-B-3A and 216-B-3B Ponds were fully operational by June 1984. Although 216-B-3B was considered an active pond, it never received any effluent with the exception of the 216-B-3A dike failure incident.
Waste Type: Process Effluent	
Waste Description:	The 216-B-3A and 3B Expansion Lobes were constructed in 1983 to receive increased discharges from the 216-B-3 Main Pond due to the increased water volume from the restart of the PUREX Plant. A dike between the 216-B-3A and 3B ponds failed in January of 1984. The discharge from the failed dike was contained with the 216-B-3B lobe. Prior to the dike failure the 216-B-3B lobe had never received any effluent. In response to the incident, the 3A and 3B lobes were isolated and trenches were dug in the bottoms of the expansion ponds to increase infiltration rates. The 216-B-3B lobe was taken out of service in May of 1985. It remained potentially active until it was clean closed in June of 1995.

Code: 216-B-3C	Classification: Accepted
Names: 216-B-3C; B Pond Lobe C; B Pond Third Expansion Lobe	Reclassification: Closed Out (6/27/1995)
Type: Pond	Start Date: 1/1/1985
Status: Inactive	End Date: 1/1/1997
Description:	The unit is a rectangular shaped pond with approximately 17 hectares (41 acres) of surface area. It was excavated into a very coarse gravel layer with a very high percolation rate. It contained eight parallel trenches that ran in a north-south direction, extending the entire length of the pond. An area on the east side of the pond has been backfilled and surface stabilized. It is posted as an Underground Radioactive Material Area. The remainder of the pond is posted as a Contamination Area.
Location:	The site is located east of the 200 East Area perimeter fence and southeast of the 216-B-3 Main Pond.
Process	The 216-B-3C Lobe was constructed in 1985 to accommodate the increased effluent flow to the

Description: B Pond complex due to the decommissioning of the 216-A-25 (Gable Pond). From 1985 to 1994, the site received overflow from the 216-B-3 Main Pond. In 1994, when the 216-B-3-3 Ditch and the 216-B-3 Main Pond sites were decommissioned, effluent was routed directly to the 216-B-3C Pond via a pipeline. The pond received diminishing amounts of effluent until 1997, when the last remaining effluent was permanently diverted to the 200 Area Treated Effluent Disposal Facility.

Related Sites/ Structures: The site is associated with the PUREX facility, 216-B-3 Main Pond, 216-B-3A Lobe, 200-E-126-PL pipeline and the 200 East Powerhouse Ditch.

Waste Type: Process Effluent

Waste Description: The site received non-RCRA regulated waste water consisting of steam condensate and cooling water.

Code: 216-B-56

Classification: Accepted

Names: 216-B-56; 216-B-56 Crib

Reclassification: Rejected (1/25/2000)

Type: Crib

Start Date:

Status: Inactive

End Date:

Description: The site is enclosed with post and chain and labeled "crib". There are no radiological postings. A site visit on July 29, 1999, found the site surrounded by post and chain and labeled "CRIB". Three risers are visible in the center of the crib. Most of the site soil with some grasses and rabbit brush growing on the surface. There is no evidence that any stabilization has taken place. The pipeline connection to the unit was not installed. A pipe exits the ground south of the crib and extends vertically above grade approximately 0.9 meters (3 feet). The vertical pipe is labeled 'end of stub.' Well 299-E28-14 (well id A6792) is located northwest of the crib's southwest corner.

Location: The crib is located northeast of the 221-B Building, north of 7th Street and south of 216-B-59 and 216-B-59B Basins.

Process Description: Originally, the site was constructed to receive organic waste from 221-B (B-Plant). The pipeline connection to the site was never installed because of a change in disposal practices. Organic waste disposal to the ground was stopped, so this crib was never activated.

Related Sites/ Structures: Within the crib structure, there are two 20.3 centimeter (8 inch) diameter liquid level gauge wells constructed of steel with galvanized metal caps. These wells are about 4.6 meters (15 feet) long and extend 0.9 meters (3 feet) above grade. These monitoring wells are located on each side of the pipe that runs the length of the crib. There is also a 10.2 centimeter (4 inch) vent pipe, 4.6 meters (15 feet) long rising from the north end of the distributor pipe and extending 1.2 meters (4 feet) above grade. The site was planned to be connected by a steel pipeline to 241-B-154 Diversion Box, but it never was. The crib was constructed with a side slope of 1:1.5. The crib was constructed with 1.2 meters (4 feet) of 1.9 - 3.8 centimeter (0.75 - 1.5 inch) gravel at the bottom of the crib, followed by 0.4 meters (1.25 feet) of 0.64 to 1.3 centimeter (0.25 to 0.5 inch) gravel, followed by a membrane barrier covered by sand. A membrane barrier was placed over the gravel and 0.61 meters (2 feet) up the sides of the crib. The site was then backfilled. A perforated 10.2 centimeter (4 inch) vitrified clay pipe runs the length of the crib 0.9 meters (3 feet) above the bottom. The site was associated with 221-B (B-Plant).

Waste Type: Process Effluent

Waste Description: The site was built but never used. No inventory is listed for the crib.

Code: 216-B-61	Classification: Accepted
Names: 216-B-61; 216-B-61 Crib	Reclassification: Rejected (1/25/2000)
Type: Crib	Start Date: 1/1/1968
Status: Inactive	End Date:
Description:	The site is a backfilled crib that has never been used. It appears as a vegetated field. Boreholes, sampling, drawings, and process knowledge show that the crib was never used. The surface had been posted as a Contamination Area. The contamination is assumed to be the result of wind-blown contamination from adjacent areas (see sitecode 200-E-105). The contamination and the Contamination Area postings have been removed. The site is technically considered a Radiologically Controlled Area (RCA), because the 200 East Area perimeter fence is posted RCA. The crib is located inside the perimeter fence.
Location:	The unit is 152 meters (500 feet) northwest of 241-BY Tank Farm and 61 meters (200 feet) south of 12th Street.
Process Description:	The crib was built to receive intermediate level process condensate from the ITS #1 unit (located in the 241-BY Tank Farm) when the 216-B-50 Crib reached its radionuclide capacity. However, the 216-B-61 crib was never used. A 0.6 meter by 0.6 meter by 0.3 foot (2 foot by 2 foot by 1 foot) thick concrete pad was laid in the crib bottom. The crib was filled with 122 cubic meters (160 cubic yards) of 1.9 to 7.6 centimeter (0.75 to 3 inch) gravel. 279 square meters (3,000 square feet) of plastic membrane barrier were laid over the gravel. 22 cubic meters (30 cubic yards) of sand were laid over the membrane. A gage well constructed of vitrified clay 20 centimeters (8 inches) in diameter and 3.96 meters (13 feet long) extended from the crib bottom to 0.6 meters (2 feet) above grade. This vent pipe has a filter on top of the pipe. The bottom 0.6 meters (2 feet) of the pipe are perforated. A 10.2 centimeter (4 inch) diameter perforated pipe runs the length of the crib, 0.3 meters (1 foot) above the bottom of the crib.
Related Sites/ Structures:	The surface of the crib and an extended area to the south had been posted as a Soil Contamination Area (SCA). The posted SCA is WIDS site 200-E-105. The pipeline associated with this crib is sitecode 200-E-181-PL. The length of the pipeline that leads from the waste line toward the crib is 268 meters (880 feet) long, 10 centimeters (4 inch) diameter carbon steel and was designed for a waste flow up to 45.4 liters (12 gallons) per minute with equal distribution over the crib area. However, the final 60 meters (200 feet) and the tie-in connecting the 216-B-61 Crib pipeline to the waste transfer line were never installed (per 1973 drawing H-2-34522, Rev. 2). Groundwater wells 299-E33-25 and 299-E33-26 were originally drilled for the purpose of monitoring 216-B-61 Crib waste.
Waste Type:	Steam Condensate
Waste Description:	This crib was built to receive condensate from the ITS (In Tank Solidification) unit, but never received any waste. It was never used.

Code: 217-B NU	Classification: Accepted
Names: 217-B NU; Elementary Neutralization Unit/217-B Building; 217-B Neutralization Unit	Reclassification: None
Type: Neutralization Tank	Start Date: 1/1/1993
Status: Inactive	End Date:
Description:	The site is a structural steel frame building with corrugated asbestos/cement siding, and a concrete slab. The site has one room containing the deactivated demineralizer, chemical

regeneration tanks, and piping. Entrances to this unit have been sealed.

- Location:** The 217-B Building is directly north of the 221-B Canyon and northeast of 271-B.
- Process Description:** The building is currently inactive because a new ion pure system was installed in 271-B during 1993. From 1985 to 1993, the building used an Illinois water treatment demineralizer system to provide demineralized water to the B Plant and Waste Encapsulation and Storage Facility. The systems resin was depleted in 1993. Sulfuric acid and nitric acid were used to regenerate the ion exchange columns.
- Related Sites/ Structures:** Structures associated with this site include supply and return water lines, blanked steam supplies, and the demineralizer equipment.
- Waste Type:** Asbestos (non-friable)
- Waste Description:** The building has concrete/asbestos corrugated siding.
- Waste Type:** Chemicals
- Waste Description:** Demineralizer operations generated waste when the ion exchange columns were regenerated. Sodium hydroxide was used to regenerate the anion column, while sulfuric acid was used to regenerate the cation column. The sulfuric acid was neutralized with sodium carbonate, while the sodium hydroxide was neutralized with monosodium phosphate prior to discharge the 216-B-63 trench.

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- Code:** 221-B NANU **Classification:** Accepted
- Names:** 221-B NANU; 221-B Nitric Acid Neutralization Unit; 221-B Elementary Neutralization Unit for Nitric Acid **Reclassification:** No Action (10/6/2005)
- Type:** Neutralization Tank **Start Date:** 1/1/1980
- Status:** Inactive **End Date:** 1/1/1997
- Description:** This site had been a blue plastic, acid neutralization tank. The tank has been excessed.
- Location:** The tank was located inside the 211-BA building, north of 221-B.
- Process Description:** Chemical waste from 221-B and 217-B flowed through underground chemical sewer lines to a lift station located near the southwest corner of 211-BA. The effluent was pumped out of the chemical sewer and into 211-BA building where it was diverted either to the acid neutralization tank or the sodium hydroxide neutralization tank to adjust the pH levels. The neutralized waste was released back into the underground chemical sewer line for disposal.
- Related Sites/ Structures:** The site was associated with the B Plant chemical sewer.
- Waste Type:** Process Effluent
- Waste Description:** Approximately 400 gallons (1,500 liters) per year of 1 Molar nitric acid is neutralized with 350 pounds (160 kilograms) per year of sodium carbonate.

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- Code:** 221-B SDT **Classification:** Accepted
- Names:** 221-B SDT; 221-B Settle and Decant Tank; 221-B-8-1 and 221-B-8-2; 221-B-TK-8-1 and 221-B-TK-8-2; B Plant Settle and Decant Tank **Reclassification:** None

means of entry. The cell is currently used for contained storage.

Location: Cell 4 is located near the west end of the B Plant Canyon.

Process Description: This cell is now used to store drums of solid mixed waste (with no free liquids).

Related Sites/ Structures: Structures associated with this cell include: the hoist and cover blocks, the canyon deck, and any equipment or piping which remains in the cell.

Waste Type: Misc. Trash and Debris

Waste Description: Material stored in this area includes light bulbs with lead solder, and other solid mixed waste.

Code: 221-B-WS-2 **Classification:** Accepted

Names: 221-B-WS-2; B Plant Waste Piles **Reclassification:** None

Type: Storage **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: The TPA and the RCRA Part A Permit Application classify this site as a waste pile that lies within a containment building. The site encompasses solid mixed waste (jumpers, counterweights, failed process equipment, and shielding) that is stored in cells and on the canyon deck.

Location: The location of the waste piles include the 221-B Canyon Deck and Cells.

Process Description: The designation of this area as a Treatment Storage or Disposal Unit is intended to satisfy requirements for the storage of solid/mixed waste within the canyon cells and on the canyon deck.

Related Sites/ Structures: Since this storage site includes the canyon deck and most of the cells, there are many structures associated with the site. Associated structures include: piping, tanks, cells, overhead equipment, tools, instrumentation, and process materials.

Waste Type: Equipment

Waste Description: This waste includes lead shielding in the cells and on the canyon deck.

Description:

Waste Type: Equipment

Waste Description: This waste includes jumpers, and other failed or isolated process equipment which may have been contaminated with wastes from fuel processing.

Code: 221-B-26-1 **Classification:** Accepted

Names: 221-B-26-1; 221-B-TK-26-1; B Plant Radioactive Organic Waste Solvent Tank 1 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: This tank is a stainless steel cylindrical tank.

Location: The tank is located on the south side of cell 26.

Process Description: This tank was used to support the solvent extraction and organic treatment process that was performed at the B Plant to recover strontium from PUREX acidified sludge.

Related Sites/ Structures: Structures associated with the tank include piping and fittings, the other cell 26 tanks, equipment, and instrumentation.

Waste Type: Chemicals

Waste Description: This tank received organic mixed waste from the solvent extraction process of the strontium recovery program. The tank is maintained ready for use on an as needed basis.

Code: 221-B-27-2 **Classification:** Accepted

Names: 221-B-27-2; 221-B-TK-27-2; 221-B Tank 27-2 **Reclassification:** None

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:**

Description: The tank is only visible if the cell cover blocks are removed. The tank is a 7,571 liter (2000 gallon) stainless steel tank.

Location: The tank is located inside cell #27, inside the 221-B Plant canyon.

Process Description: The 221-B-27-2 tank is part of the organic mixed waste storage system that was contained in cells 26, 27, 28, 29 and 30 of the B Plant canyon. The organic waste was used in the recovery and purification of strontium and cesium.

Waste Type: Process Effluent

Waste Description: The tank contained organic mixed waste used in the recovery and purification of strontium and cesium.

Code: 221-B-27-3 **Classification:** Accepted

Names: 221-B-27-3; 221-B-TK-27-3; B Plant Radioactive Organic Waste Solvent Tank 2 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1963

Status: Inactive **End Date:**

Description: This tank is a carbon steel cylinder, with an internal cooling coil and 17 nozzles on the head of the tank.

Location: The tank is located in the northeast corner of cell 27.

Process Description: This tank was used to support the solvent extraction and organic treatment process that was performed at the B Plant to recover strontium from PUREX acidified sludge.

Related Sites/ Structures: Structures associated with this tank include piping and fittings, the other cell 27 tanks and equipment, and instrumentation.

Waste Type: Chemicals

Waste Description: This tank received organic mixed waste from the solvent extraction process of the strontium recovery program. The tank contained waste as of September 1996.

Code: 221-B-27-4 **Classification:** Accepted

Names: 221-B-27-4; 221-B-TK-27-4; B Plant Radioactive Organic Waste Solvent Tank 3 **Reclassification:** None

Location: This building lies south of the 221-B Canyon, and west of 222-B Laboratory.

Process Description: The 224-B Concentration Facility received dilute plutonium nitrate solution that was the product of the 221-B Bismuth Phosphate process. This facility purified and reduced the volume of product. After concentration, the plutonium nitrate product was then shipped from 224-B to the 231-Z Isolation Building. the Plutonium Concentration Facility, concentrating the liquid output from the plutonium separations plant from 1,249 liters to 30 liters. The concentration took place in six radiologically contaminated process cells (Cells A, B, C, D, E, & F), located in the southeastern 1/3 of the 224-T building. The cells contained various tanks and piping. Cells A, B, D, and E contained a 40 inch centrifuge on a platform. Cell C is a pit that connects to the underground pipe tunnel from Sections 13 & 14 of 221-T. Cell F was "L" shaped and included an office and a glass enclosure where partial finished product was collected for transfer to 231-W. The contaminated process cell equipment was flushed when the process was terminated (1960's). The amount of radiological or regulated material remaining within the process cells and piping is unknown. The plutonium concentration process was identical to the concentration process done at 224-T in 200 West Area. A thorough radiological characterization was done of the 224-B Hot Cells in 1985. An inventory of radioactive material remaining in the 224-B hot cells, based on average measurements, estimated 1.1 curies of cesium-137, 22 curies of strontium-90, 3.7 curies of cobalt-60, 5 curies of americium-241, 31 curies of plutonium-239 and 2 curies of other plutonium isotopes.

Related Sites/ Structures: Structures associated with this facility include tanks, agitators, process equipment, and instrumentation.

Waste Type: Chemicals

Waste Description: The building contains residual processing agents. Hazardous constituents include mercury, polychlorinated biphenyls, cleaning agents, and radionuclides (including plutonium, americium, strontium, cobalt, and cesium). An inventory of radioactive material remaining in the 224-B hot cells (1985), based on average measurements, is estimated to be 1.1 curies of Cs-137, 22 curies of Sr-90, 3.7 curies of Co-60, 5 curies of Am-241, 31 curies of Pu-239 and 2 curies of other plutonium isotopes.

Waste Type: Equipment

Waste Description: This facility contains radiologically contaminated equipment, and concrete surfaces.

Code: 226-B HWSA	Classification: Accepted
Names: 226-B HWSA; 226-B Hazardous Waste Storage Area	Reclassification: Rejected (9/6/2000)
Type: Storage Pad (<90 day)	Start Date: 1/1/1985
Status: Active	End Date:

Description: Documents dated 1987 and 1992 described the site known as the 226-B Hazardous Waste Storage Area (HWSA) as a concrete pad surrounded by a light chain barricade. It was posted with "226-B Hazardous Waste 90-Day Staging Area", and "PCB 30 Day Storage" signs. Additional information was provided by Ron Weissenfels (B-Plant Engineer) in 1998 that described the area as temporarily being three separate storage pads located north of B-Plant, and adjacent to the 211-BA and 219-B Buildings. However, a field visit in April 2000 found only one small, locked metal shed labeled "226-B<90 Day Storage - Dangerous/Hazardous Waste". Correspondence with the responsible contractor confirmed that the three pads were consolidated into one location prior to the area being turned over to WESF (Waste Encapsulation and Storage Facility).

Location: The pad is located north of B Plant, north of 211-BA and 219-B Buildings

Process Description: This staging area provides temporary (less than 90 days) storage for hazardous wastes. The first waste receipt was on May 30, 1985.

Related Sites/ Structures: This storage pad is associated with B Plant activities and 200-E-32.

Waste Type: Chemicals

Waste Description: The staging areas temporarily store a wide variety of dangerous waste. Examples of waste previously stored here include: halogenated hydrocarbons, caustic liquids, acids, solvents, toxic chemicals and coolants and PBC's.

The Following Sites Were Consolidated With This Site:

Code: 200-E-32

Names: 200-E-32; 226-B Pad East Side 90-Day Waste Accumulation Area

Code: 242-B

Classification: Accepted

Names: 242-B; 242-B Evaporator

Reclassification: None

Type: Evaporator

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1985

Description: The 242-B Building was used during the Hanford production plant era as a waste tank supernate evaporation facility, a twin to 242-T. Originally, the building consisted of three sections. The north section contained the evaporator vessel (a steam-heated pot evaporator) along with the associated process components. The center section consisted of the control facilities (plutonium laboratory, storage room, change room, office area, and lunch room). Later, the building was a research facility operated by PNL-BNW. Use of the building as an evaporation facility was terminated in 1962. At that time, Rooms 1 and 2 of 242-B were cleaned up to some extent and the waste evaporation equipment was removed and buried. The 242-BL Building was then constructed (attached to 242-B) as a cask loading facility. A fuel element rupture test loop was installed in Room 2 of 242-B. The buildings were used in a program involving N Reactor fuel elements. The fuel element would be sent to the 327 Building where manmade defects were introduced in the fuel element. It would then be shipped to 242-BL and heated in a rupture loop (located in 242-B) to cause failure. The fuel element would then be returned for examination at the 327 Building. This program was phased out in 1970. The 242-BL Building has not been used since that time. A significant amount of equipment remains in the facility including the hydrostatic pump, heaters, control panels, rupture test loop, and associated piping. From 1970 through 1980s, the 242-B Building, except Rooms 1 and 2, was used for research on radioactive particles. This work consisted of simulating accidents related to airborne releases of radioactive material using depleted uranium as the particle. A wind tunnel and radioactive aerosol release tanks remain installed in Room 4 of the facility. The facility remains in a shutdown condition. The following sections describe as of September 1998. 242-B Basin The basin is 3.1 meter by 2.4 meter by 3.1 meter deep (10 feet by 8 feet by 10 feet deep). It has a full capacity of 22,720 liters (6,000 gallons). In September 1998, the basin was 50% full. The basin was vacuumed in 1972, using the buffalo pump, located in the northwest corner of the building, to pump the sump in the bottom of the basin. The effluent was directed to the floor drain west of the basin, which was connected to tank farms. There are no drains in the basin. Water is contaminated with cesium-137, strontium-90, and miscellaneous fission products from formerly held N-Reactor fuel. Most contamination is believed to be trapped on scale on the walls. There is a hoist and cable above the pool, that are also likely contaminated. Pool water is otherwise fairly clean (past analysis indicate about 93 microcuries per liter of cesium-137) with only dust blown in over the years. Some pool tools are in the basin and are propped up in the corner. The water in the basin was sampled in July 1995 (SAF-S5-071, sample number S5071-01 and R7850). 242-

B Hallway A corridor or hallway connects the B and BL Buildings. Within the hall are remnants of a water purification system plus an empty hydrogenated water tank [2271 liters (600 gallons) - stainless steel]. Hydrogen gas cylinders external to the building were used to charge the tank. There is a tank inspection port on the top. The tank is not contaminated. Outside the exit door on the west end of the hallway there is a valve handle that was used to open the drain line to the tank farm (to tank 241-B-106). Room 1 Remnants of the old Crud Product Transfer Facility (CPTF) loop (a project supporting C and K Reactors) remain within the room. This was a separate project than the N Reactor fuels project that was done in Room 2. Cobalt-60 used to be stored in casks in this room (storage only). The room contains lots of miscellaneous equipment racks, carts, piping, an old autoclave that stands vertically against the north wall. There is a contaminated sump located next to the west wall that is 0.61 meters by 0.61 meters by 0.76 meters deep (2 feet by 2 feet by 2.5 feet deep). It reads 100 millirads at contact. The sump is dry. The sump serviced a sink and was pumped to a floor drain. It has no drain line in it. Prior to the occupancy of PNL, there was fixed contamination on the floors. Some floors were chipped up and new concrete poured. Other spots were covered with Amercoat paint. The entire room is a potential surface contamination area. On the south side of Room 1, there are remnants of a breathing air compressor and some ventilation ducts. Room 2 This room is located in the southeast corner of Room 1 and is constructed of concrete blocks. The room contained the N Reactor rupture test loop. It is radiologically contaminated and currently contains some fixed piping and a metal filter that has lead brick shielding surrounding it. Some N Reactor steam tubes are lying on the floor behind the shielding. There is a drain in the northwest corner. All building drains on this side of the facility were tied together and went to the tank farm (241-B-106). These are no longer connected. The room may also contain piping to/from a high pressure pump. HEPA filters are in the ceiling of this room. Room 3 Room 3 is a former storage area that is now empty. The upstairs part of the room contains furniture and empty shelving. Under the hood located next to the south wall, there are sheets of lead shielding covering fixed contamination that was residual after the original evaporator equipment was removed and the floors re-cemented. Room 4 The room was last used as the Radioactive Aerosol Release Laboratory (RARL). It contains the 3.1 meter (10 foot) diameter process vessel, steel waste tanks, a poly waste tank (all empty), and lots of miscellaneous material, such as hoods, ductwork, HEPA filters, sinks, electrical and instrument controls and miscellaneous equipment from PNL aerosol studies with depleted and natural uranium. Fixed contamination from prior operations (before PNL occupancy) remains. The interior of the tanks is likely contaminated with low levels of uranium. There are no floor drains in this side of the building. There is a sump under the large 3.1 meter (10 foot) diameter tank. Outside the room to the west is the inlet and exhaust ductwork to support the aerosol tests. Possible uranium contamination should be expected. HEPA filters are also in place. Room 5 Room 5 is the former control room when the building was used as an evaporator. Recently, the room was used for storage. It contains piping with asbestos lagging, some old shelves, and a wooden storage cabinet. Room 6 Room 6 has a hood that was used by PNL for corrosion studies on unirradiated fuel. The hood is now empty. Under the sink, there are capped off drain lines that likely went to the floor drain system. Room 7 Room 7 is a former storeroom that is now empty. Room 8 Room 8 is a store room that is empty. Room 9 Room 9 is the former kitchen/lunch room. It is now empty. The sanitary drains from this room and the restroom are out of service. They used to go a crib/drainfield east of the facility. Room 10 Room 10 is the restroom. It is out of service. Room 11 Room 11 is an equipment room that contains a water heater. It is out of service. Roof The building was re-roofed in 1969 and repaired in 1996. Facility Systems Potable and fire water are isolated to the facility. Electricity remains in service to provide lights during surveillance and maintenance. The drains to the tank farm are isolated via an isolation valve located at the northeast corner of 242-B. The sanitary sewer line to the septic tank is believed to still be connected. The ventilation system is shut down, and all ventilation discharge points are capped. The ballasts in the fluorescent lights may contain polychlorinated biphenyls (PCBs). The batteries have been removed from the emergency lights. No accountable property remains in the facility.

Location: 242-B Evaporator is located on the north side of the 200 East Area, north of the 221-B (B Plant)

building. It is about 21.3 meters (70 feet) south of tank 241-B-104, south of the 241-B Tank Farm fence.

Process Description: The 242-B Facility is also called the former first cycle evaporator building and former control building. The evaporator was installed to evaporate cladding/first cycle waste and reduce the waste volume. In the 1960's, PNL began using the facility as an Aerosol Research Facility. Studies such as free fall of powders and liquids and the burning of various types of materials were conducted.

Related Sites/ Structures: 242-B Evaporator interconnected with the following 242-B building components: cyclone stainless steel catch tank (75 gallons/284 L), cyclone separator, condenser, two catch tanks (4,185 gallons/15,840 L), feed tank (4,185 gallons/15,840 L), two pre-heaters (75 gallons/284 L). Waste was also directed to the following: 241-B-152, 241-B-154, 241-BR-152, 242-B-151, 241-C-152 diversion boxes; 241-B-104, 241-B-105, 241-B-106, 241-B-107, 241-B-108, 241-B-109, 241-C-109 single shell tanks; 241-B Retention Basin; 216-B-37 retention trench; 216-B-11A and 216-B-11B reverse wells. This site is also associated with the 2607-E9 septic tank and tile field. Additionally, the site is associated with the 242-BL, Cask Loadout Facility.

Waste Type: Equipment

Waste Description: Until October 1954, the treatment unit received byproduct cake solution and waste solution from the first decontamination waste cycle. This contained ~10% of original fission product, 1% Plutonium, and the remainder of miscellaneous chemicals. The major chemical component was bismuth phosphate. Over its active life, the unit processed 7,172,000 gallons (27,146,020 L) of waste.

Waste Type: Soil

Waste Description: Soil contamination exists external to the facility, a historical legacy because of diverter box failure from the tank farm operations in the nearby 241-B Tank Farm. Tank 241-B-103 historically would "burp" and contaminate the surroundings. The 207-B basin also was known to have "upsets" which led to field contamination in the general area.

Code: 200-E PAP

Classification: Accepted

Names: 200-E PAP; 200-E Powerhouse Ash Pit and Ash Disposal Pile; Ash Basin

Reclassification: Rejected (5/21/2008)

Type: Coal Ash Pit

Start Date: 1/1/1943

Status: Inactive

End Date: 1/1/1998

Description: The ash pit is a large open depression located east of the 284-E Powerhouse. The Ash Disposal Pile is a large mound of material dredged, over years of operation, from the Ash Pit.

Location: The Ash Pit is located inside 200 East Area, south of 4th Street and 30 meters (100 feet) east of the 284-E Powerhouse. The Ash Disposal Pile is located east of the Ash Pit.

Process Description: The site received ash from the 200 East Powerhouse. The powerhouse consisted of three coal fired boilers that were used to generate steam for the 200 East Area. An ash and water slurry was produced when the ash was sluiced from the powerhouse. The slurry was placed in the 200 East Powerhouse Ash Pit. When the ash pit became full, heavy equipment was used to remove the ash from the pit and place it in the Ash Disposal Pile, located east of the Ash Pit. The ash pit is a large basin divided into two parts by an earthen dam. Ash slurry could be directed to either compartment. The compartments were used alternately to allow one side to dry while the other was being filled. The rate of ash generation was approximately 9,480 cubic yards per year (7252 cubic meters per year) when the powerhouse was active. The pit capacity was approximately 81,020 cubic yards (61980 cubic meters) of ash. The dried ash was removed (pushed with bull dozers) periodically from the ash basins and placed in the eastern portion of

the Ash Pit (known as the disposal pile). As of April 2000, the remaining ash in the pit and disposal pile is estimated to be less than a meter deep.

Related Sites/ Structures: This pit received ash from the 284-E Powerhouse.

Waste Type: Ash

Waste Description: A waste determination of the Hanford Site 200 Area steam plant ash was performed in the early 1990s. The coal ash waste stream was determined to be nondangerous. Samples were analyzed using the TCLP (Toxicity Characteristic Leaching Procedure), and all were below the regulatory limits. Eleven sample results were also reported for pH: the results ranged from 7.66 to 11.91, with an average of 9.27. The second and third highest pH results were 10.09 and 9.94.

The rate of ash generation was approximately 9,480 cubic yards per year (7252 cubic meters per year) when the powerhouse was active. The pit held approximately 81,020 cubic yards (61980 cubic meters) of ash.

Code: 200-E-3 **Classification:** Accepted

Names: 200-E-3; Paint/Solvent Dump; Toluene Dump Site **Reclassification:** Consolidated (5/6/2004)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of an area inside a large depression. The bottom of the pit has hard pan type soil, while the sides are gravel and sand. Asphalt and other debris are on the sides of the road berm. There is no visual evidence of the dumping.

Location: The Waste Information Data System (WIDS) Information Form submitted on September 3, 1992 states the location is a pit adjacent to a berm on the north end of the 241-AN Tank Farm and west of Canton Avenue inside 200 East Area.

Release Description: There are two reports of releases to the pit north of 241-AN Tank Farm. In 1991, it was reported that approximately 39 liters (10 gallons) of toluene was dumped inside the pit during the summer of 1984 or 1985. In 1995, two ICF Kaiser painters reported disposing of liquid paint waste to the ground inside the pit north of 241-AN Tank Farm. They recalled dumping approximately 95 liters (25 gallons) of liquid in one visit and another 95 liters (25 gallons) in a second visit. In 1996, a visit to the pit with one of the painters verified the pit north of 241-AN Tank Farm, just west of Canton Ave. as the dumping site location. He indicated the area in the southeast portion of the pit as the dump site. The area effected by the chemical dumping measured approximately 9 meters by 9 meters (30 feet by 30 feet).

Waste Type: Chemicals

Waste Description: The waste dumped into the pit included approximately 229 liters (60 gallons) of paint wastes like toluene, solvents, and methyl ethyl ketone .

The Site Was Consolidated With:

Code: 200-E-10

Names: 200-E-10; 200-E-3 Toluene Dump Site; Paint/Solvent Dump South of Sub Trenches

Code: 200-E-5 **Classification:** Accepted

Names: 200-E-5; 2607-E2; 2607-E2 Septic Tank & Tile Field **Reclassification:** None

Status: Inactive **End Date:** 1/1/1995

Description: The chemical demolition site is no longer marked or posted.

Location: The site is in the northeast corner of 200 East Area, inside the 200-E Burn Pit. It is east of the 218-E-8 Burial Ground.

Process Description: The site was used as a thermal treatment (detonation) pit for excess shock sensitive or potentially explosive chemical waste in 1984.

Related Sites/ Structures: The site is associated with the 200 East Burn Pit (200-E BP).

Waste Type: Chemicals

Waste Description: This unit had detonations of the following chemicals: 1984: Isopropyl Ether 8 L (2.1 gal), 1,4-Dioxane 1,250 mL (0.33 gal), 2-Butoxyethanol 19 L (5.0 gal), Methyl Ethyl Ketone 177 mL (0.05 gal), Hydrogen Peroxide 11.36 L (3.0 gal), Dioxane 946 mL (0.25 gal), Sodium Azide 473 mL (0.12 gal), Phosphoric Acid 189 L (0.05 gal); 1985: None; 1986: None.

Code: 200-E-9 **Classification:** Accepted

Names: 200-E-9; 2607-EN; 2607-EN Septic Tank/Pump Station; 2727-E Septic System **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The above ground area is posted "Septic Tank 2607-EN". The area is surrounded with metal fence posts and chain. Three concrete and one PVC cylinders (manholes) with covers protrude above grade in the underground tank area. The surface is disturbed and covered with Russian thistle, cheat grass, and other weedy species. Two "Sanitary Tile Field" signs are located south of the septic tank.

Location: The site is 75 feet south of the southwest corner of the 2727-E Safeguards and Security Building (which is in 200 East Area on 4th Street).

Process Description: Receives sanitary sewage from 2727-E Safeguards and Security Building.

Related Sites/ Structures: The 2727-E building was serviced by this septic system.

Waste Type: Sanitary Sewage

Waste Description: Sanitary sewage from 2727-E Safeguards and Security Building

Reported Date: August 16, 1995

Code: 200-E-10 **Classification:** Accepted

Names: 200-E-10; 200-E-3 Toluene Dump Site; Paint/Solvent Dump South of Sub Trenches **Reclassification:** Rejected (5/13/2008)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: A site visit in 1997 identified a large gravel depression north of 241-AN Tank Farm. The site consists of an area within this large depression. The bottom of the depression has hard pan type soil, while the sides are gravel and sand. Asphalt and other debris are on the sides of the road

berm. Another site visit in May 2004 found the appearance has not changed. There is no definite visual evidence of liquid dumping. The actual dumping area is not marked or posted.

Location: The site is located north of 241-AN tank farm and west of Canton Avenue inside the 200 East Area.

Release Description: In 1991, it was reported that approximately 39 liters (10 gallons) of toluene was dumped inside the pit north of 241-AN Tank Farm during the summer of 1984 or 1985. In 1995, two ICF Kaiser painters reported disposing of liquid paint waste to the ground inside the pit north of 241-AN Tank Farm. They recalled dumping approximately 95 liters (25 gallons) of liquid in one visit and another 95 liters (25 gallons) in a second visit. In 1996, a visit to the pit with one of the painters verified the pit north of 241-AN Tank Farm, just west of Canton Ave. as the dumping site location. He indicated the place in the southeast portion of the pit as the area effected by the dumping. It measured approximately 9 meters by 9 meters (30 feet by 30 feet).

Waste Type: Chemicals

Waste Description: The waste dumped into the pit included approximately 229 liters (60 gallons) of paint wastes like toluene, solvents, and methyl ethyl ketone. CERCLA reportable quantities are listed at 40 CFR 302, in Table 302.4. The RQ for toluene is 1000 lbs. There is no RQ listing for paint. The reported disposal at 200-E-10 was 25 gallons (twice) = 50 gallons, or about 400 pounds. Conservatively estimating the paint as 100% toluene, the disposal was less than the CERCLA RQ. Therefore, the release was not (is not) a threat to human health and the environment

The Following Sites Were Consolidated With This Site:

Code: 200-E-3

Names: 200-E-3; Paint/Solvent Dump; Toluene Dump Site

Code: 200-E-11

Classification: Not Accepted

Names: 200-E-11; Diesel Oil Spill at BX-BY Tank Farm

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1995

Status: Inactive

End Date: 1/1/1995

Description: The site is a spill of non-regulated diesel oil on August 7, 1995. The oil and soil were excavated and the site backfilled by September 7, 1995.

Location: The incident occurred just outside the fence directly west of tanks BY-112 and BY-111.

Release Description: A fuel truck driver on his daily refueling rounds discovered a leak of diesel oil from a generator. It was discovered that about 75 to 95 liters (20 to 25 gallons) had leaked out of the unit's two 57-liter (15-gallon) tanks. The oil had leaked out of a failed gasket on the fuel suction line between the tank and first fitting. The tanks were cascaded, and thus the fuel from the second tank was siphoned out. An analysis of the fuel was made, and it was determined that the fuel was non-regulated.

Waste Type: Oil

Waste Description: The spill was diesel oil.

Description:

Code: 200-E-12

Classification: Accepted

Names: 200-E-12; Sand Piles from RCRA General Inspection #200EFY95 Item #5

Reclassification: Rejected (1/19/2000)

Type: Laboratory

Start Date:

Status: Inactive**End Date:**

Description: A 1995 site inspection discovered this site and described it as two sandy areas which are a different color sand than the surrounding sand. The two sand piles were approximately 27 meters (30 yards) apart. During a February 1997 visit, an empty, stainless steel tank and a nearby pit were also observed at the site. The tank, labeled "X-12," measured 1.47 meters (58 inches) high and 1.35 meters (53 inches) in diameter. The area has been roped off with steel posts and rope. The sandy areas were approximately 3.7 meters (4 yards) in diameter. The site was visited again on August 26, 1998, for a GPS survey. The two sand piles appeared to have been removed; only traces of the piles remained. Between the remains of the two sand piles were equipment for some sort of experiment. A small pit with deteriorated clear plastic was observed by the "X-12" tank. The experiment equipment consisted of two large polypropylene water tanks, a large rectangular pit and a metal frame set up over the pit. One of the tanks was 2.7 to 3.0 meters (9-10 feet) tall with a 2840 liter (750 gallon) capacity. It was labeled "Non Hazardous River Water" and appeared to be approximately half full. The second water tank was only about 1.5 meters (5 feet) tall and had a larger diameter than the first tank. It was also labeled "Non Hazardous River Water" and appeared to be approximately three-quarters full. There were no volume markings on this tank. The shorter tank was also posted "Experiment in Process, Contact Ray Clayton @ 372-6037." The rectangular pit was approximately 4.6 meters (15 feet) long and 1.5 meters (5 feet) wide and 0.9 meters (3 feet) deep. The bottom of the pit was covered with a tarp and the sides appeared to be covered with plywood. Over the top of the pit was a metal frame suspending a spray device over the pit. The site was revisited on July 26, 1999, in order to confirm the current conditions of the site. The "X-12" tank is still there, sitting on a wooden pallet. The small pit with the deteriorated plastic is there and looks unchanged. The two large polypropylene tanks observed in 1998 are gone. The space where they had been located was occupied by wood debris and PVC pipe. The large rectangular pit has been filled in. What appears to have been the metal frame over the former pit is now lying on the ground to the north. A cylinder of compressed nitrogen is within 2 meters (6.6 feet) of the south sand pile remnant. The cylinder is labeled "For Research Use. Please do not move from this site. POC Fenton Khan 372-0426 or Janelle Downs 376-6641." The cylinder is resting on a metal plate and is secured to a metal post. This cylinder is the only material that is part of an ecological experiment for the vitrification project, and is separate from the other material found at the site.

Location: The site is located inside 200 East Area, southwest of PUREX. It is along a dirt road that runs north from First Street, approximately 0.8 kilometers (0.5 miles) west of the intersection of First Street and Canton Avenue. The site is approximately 0.5 kilometers (0.3 miles) north of First Street.

Process Description: After some research, it was discovered that the sand piles, identified in 1995, are actually the remains of several experiments in preparation for locating a suitable site for long term storage for vitrified material. The sand piles are evidence of seasonal soil infiltration tests, using water. The sand is not a waste site. Later, PNNL used the same area for water infiltration tests.

Code: 200-E-16**Classification:** Accepted**Names:** 200-E-16; B Plant Waste Concentrator; Low Level Waste Concentrator; Single-Stage Thermal Siphon Reboiler**Reclassification:** None**Type:** Evaporator**Start Date:****Status:** Inactive**End Date:**

Location: The low-level waste concentrator is located in cell #23 of building 221-B. Cell #23 is the first cell east of 221-BC.

Process: The low-level waste concentrator was operated to concentrate the low-level waste in the low-

Process

Description: level waste storage and treatment tank system. The low-level waste concentrator is a thermal siphon and shell and tube heat exchanger. This system has been used only for concentration of the B Plant Complex low-level waste stream. No NCAW waste has been concentrated with the B Plant low-level waste concentrator. This system currently is inactive with no intention of resuming operation and is included to reflect past operations. The low-level waste concentrator system includes the following equipment: the waste concentrator (E-23-3), the deentrainer (D-23-2), the condenser (E-23-4), and receiving tank (TK-23-1). The maximum process design capacity for the low-level waste concentrator is 7,300 gallons (27,633 liters) per day.

Waste Type: Process Effluent

Waste

Description:

Code: 200-E-17	Classification: Accepted
Names: 200-E-17; LERF Basins; 200 Area Liquid Effluent Retention Facility (LERF)	Reclassification: None
Type: Surface Impoundment	Start Date: 1/1/1994
Status: Active	End Date:

Description: The 200 Area Liquid Effluent Retention Facility (LERF) is comprised of a group of surface impoundments. The site is surrounded by a fence (about 700 meters by 400 meters). The three LERF basins are located in the southern portion and are numbered from west to east as 242AL42, 242AL43, and 242AL44, respectively. Each basin is constructed with 2 liners; a leachate collection system; sampling and liquid level risers; and a floating cover. There are three metal buildings within the fence.

Location: The basins are located in the northeast corner of 200 East Area; about 300 meters south of the 2025E building and just east of Canton Ave.

Process Description: Mixed waste from the Double-Shell Tank System is transferred to the 242-A Evaporator, where the waste is concentrated by evaporation. The evaporated constituents are recondensed, collected, and transferred to LERF. Other facility effluents may be added later. The effluent is stored in the basins until it is processed by the 200 Area Effluent Treatment Facility (ETF). Waste from the ETF may be recycled via the LERF for additional treatment.

Related Sites/Structures: Double Shell Tanks (DST), 242-A Evaporator, 2025E, 200 Area Effluent Treatment Facility (ETF), 600-211 (SALDS).

Waste Type: Process Effluent

Waste Description: Process condensate from the evaporator contains small amounts of volatile and semivolatile organics; inorganics; and radionuclides. By permit, constituents may include spent halogenated and non-halogenated solvents and ammonia.

Code: 200-E-19	Classification: Not Accepted
Names: 200-E-19; 216-B-3 Borrow Pit; B Pond Borrow Area	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1994
Status: Inactive	End Date:

Description: The 216-B-3 Borrow Pit is a shallow, scarred gravel area adjacent to the northeast corner of the backfilled 216-B-3 Pond. It is slowly revegetating with native grasses and crested wheatgrass,

but large areas of bare ground remain.

Location: The site is located east of the 200 East Area perimeter fence. It is northwest of the backfilled 216-B-3 Main Pond, and north of a posted Underground Radioactive Material Area (the 216-B-3 Ditches).

Process Description: Fill material was taken from this area in 1994 for 216-B-3 stabilization activities. No waste has been placed into the borrow pit.

Related Sites/ Structures: The borrow pit is associated with the 216-B-3 Pond.

Code: 200-E-20 **Classification:** Not Accepted

Names: 200-E-20; 218-E-10 Annex; 218-E-10 Borrow Area; 218-E-10 Borrow Pit; Unused Portion of 218-E-10 Burial Ground **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1980

Status: Inactive **End Date:**

Description: The area is posted with signs that read "Do Not Enter - 218-E-10 Burial Ground - Authorized Personnel Only." The area has revegetated naturally.

Location: The site is located inside the 200 East Area, north of the 218-E-10 burial trenches. It is near the corner of 12th Street and Akron Ave.

Process Description: The area was originally reserved for additional 218-E-10 Burial Ground trenches. No additional burial trenches were placed in this area. In 1980, clean backfill material was taken from the east side of the unused Annex area to surface stabilize the eastern 10 hectares (25 acres) of the 218-E-10 burial ground trenches. No waste has been placed into the pit. Only clean backfill material has been removed.

Related Sites/ Structures: The borrow pit and unused designated trench area is associated with the 218-E-10 Burial Ground. The unused portion of the burial ground is associated with WIDS sitecode 200-E-292, which documents a small amount of debris.

Code: 200-E-21 **Classification:** Not Accepted

Names: 200-E-21; 218-E-12A and 218-E-12B Borrow Pit; 218-E-12A and 218-E-12B Soil Borrow Area; Pit 33 **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1979

Status: Active **End Date:**

Description: The 218-E-12A / 218-B-12B Burial Ground Borrow Pit is a large scraped area located west of the 218-E-12A Burial Ground and south of the 216-B-2 Covered Ditches. It is not marked or posted.

Location: The Borrow Pit is located west of the 218-E-12A Burial Ground and south of the 216-B-2 Covered Ditches.

Process Description: Clean backfill material from this borrow pit area was used on both the 218-E-12A and 218-E-12B Burial Grounds. The 218-E-12A Burial Ground was initially surface stabilized with material from this borrow pit in 1980. The southeast portion of the 218-E-12B Burial Ground was surface stabilized with material from this borrow pit in 1981. Additional backfill material

was added to the burial grounds from this borrow pit in 1994. No waste has been placed into the borrow pit.

Related Sites/ Structures: The borrow pit is associated with 218-E-12A and 218-E-12B Burial Grounds.

Code: 200-E-23 **Classification:** Not Accepted
Names: 200-E-23; UN-216-E-33 Borrow Pit; UPR-200-E-56 Borrow Pit **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1979
Status: Inactive **End Date:**
Description: The borrow pit is not marked or posted, and is partially vegetated.
Location: The site is located east of the 200 East Area perimeter fence, north of the 216-A-24 Crib and UPR-200-E-56.
Release Description: See UPR-200-E-56.
Process Description: This borrow pit was the source of clean fill to cover contaminated material placed at the UPR-200-E-56 site. No waste has been placed in the pit.

Related Sites/ Structures: The site is associated with UPR-200-E-56 (alias UN-216-E-33) and the 216-A-24 crib.

Waste Type: Soil
Waste Description: After earthmoving equipment mistakenly dug into contaminated soil adjacent to the 216-A-24 crib, contaminated soil from other areas in 200 East Area were placed into the excavation to fill up the hole.

Code: 200-E-24 **Classification:** Accepted
Names: 200-E-24; 2704-HV Septic System; 6607-11 **Reclassification:** None
Type: Septic Tank **Start Date:**
Status: Active **End Date:**
Description: The septic and dosing tank area (about 60 ft by 10 ft) has five manholes at grade and two 7-ft high 4-in diameter metal pipe air vents. The drainfield is within a fenced area about 300 ft north of the septic tank area. The drainfield fenced area is about 130 ft by 360 ft; and has six valve boxes and a gate at the south end. The drainfield consists of three trenches and one trench reserved for future use.
Location: The site is west of B-Plant and east of route 4 south. It is east of 2704-HV and west of the 216-B-62 crib. A GPS survey was done in August 1998.
Process Description: This system receives sanitary sewer from 2704-HV, 2701-HV, MO723, MO850, MO046.

Related Sites/ Structures: 2704-HV, 2701-HV, MO723, MO850, MO046

Waste Type: Sanitary Sewage
Waste Description: This system receives sanitary sewage from 2704-HV, 2701-HV, MO723, MO850, MO046.

Description:Reported Date: 04-19-96

Code: 200-E-28 **Classification:** Accepted

Names: 200-E-28; 221-B Building Contaminated Steam Condensate Release **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1990

Status: Inactive **End Date:**

Description: The release occurred through the 221-B Canyon wall expansion joint located between cells 38 and 39. Visible portions of the expansion joint are 3/4" to 1" wide however, the actual point of release is below grade and is not visible. The expansion joint is located 40 feet from the west end of the building between cells 38 and 39.

Location: The release occurred at the 221-B Building (B Plant), 40 feet from the west end and under 221-B Building.

Release Description: On July 17, 1990, a nuclear process operator discovered a solution seeping from the expansion joint between cells 38 and 39, inside the electrical gallery. The seepage was collecting in the gallery floor sump. It was later determined that the release involved approximately 80,000 gallons to 230,000 gallons (over a one year time span) of radioactive steam condensate that could not be accounted for. The steam condensate contained Sr-90 and Cs-137. It is assumed to have been released to the soil column.

Related Sites/ Structures: The release is associated with B Plant operations.

Waste Type: Steam Condensate

Waste Description: The waste was approximately 80,000 to 230,000 gallons of steam condensate contaminated with Cs-137 and Sr-90 that leaked through the expansion joint between cells 38 and 39 of the B Plant Canyon Building directly into the soil column.

Code: 200-E-30 **Classification:** Accepted

Names: 200-E-30; 221-B Stack Sand Filter; 291-B Sand Filter **Reclassification:** None

Type: Sand Filter **Start Date:** 1/1/1948

Status: Inactive **End Date:** 1/1/1997

Description: It consists of a reinforced concrete structure filled with sand and gravel and a roof of pre cast concrete slabs supported by the walls and concrete beams. The unit is partially below grade. The unit measures 33.5 meters (110 feet) by 15.25 meters (50 feet) by 4.8 meters (16 feet) high. It is posted with appropriate radiological signs.

Location: The sand filter is located southeast of the 221-B canyon building, adjacent to the 291-B Stack.

Process Description: Sand Filters were added to the T Plant and B Plant exhaust systems in 1948. The sand filter was constructed for use in conjunction with the bismuth phosphate process. Later HEPA pre-filters were installed in parallel with the sand filter (291-BC and BD). The sand filter has been maintained in a stand-by mode to be used as an emergency back up system or in case of an in cell fire.

Related Sites/ Structures: The sand filter is associated with the 291-B Stack and a french drain located east of the sand filter (200-E-55). The pipeline from the sand filter to the french drain is sitecode 200-E-214-PL.

Code: 200-E-35 **Classification:** Accepted
Names: 200-E-35; 209-E 90-Day Waste Accumulation Area; 209-EA **Reclassification:** Rejected (9/14/2000)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:**
Description: The site is a concrete pad with a peaked roof supported by beams. The sides are fenced. The east side of the pad is the Hazardous Material storage area. The west side of the pad is the mixed waste storage area and is posted as a Radiation Area.
Location: The site is located inside the 200 East Area, on the west side of the 209-E building
Process Description: Waste generated at tank farm facilities is transported to 209-E for storage. The storage pad is divided into two areas. One part is used for storage of mixed waste, the other part is used for storage of hazardous material.

Code: 200-E-36 **Classification:** Accepted
Names: 200-E-36; 241-AZ 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/6/2000)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:** 1/1/1993
Description: This site has been inactive at least since 1993, according to the current (May 2000) manager of 90 Day Pads for the River Protection Program (RPP). Its previous location is unknown, but only enclosed conex boxes (self-contained with a spill berm) had been used for 90 Day Storage in the past in the tank farms. This 90 Day Area was moved to RPP's only remaining 90-Day Area, at 209-E (200-E-35) before 1993.

Related Sites/ Structures: This site was associated with the 241AZ Tank Farm.

Code: 200-E-39 **Classification:** Accepted
Names: 200-E-39; Hood 32 90-Day Waste Accumulation Area; PUREX Room 52 **Reclassification:** Rejected (9/14/2000)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:** 1/1/1996
Description: All 90 day storage pads were removed when PUREX was closed down and cleaned to meet the deactivation end point criteria prior to transition from Westinghouse Hanford Company (WHC) to Bechtel Hanford Inc. (BHI), per J. D. Showman (e-mail communication March 2000).

Location: This site was in room 52 of the PUREX facility.

Related Sites/ Structures: This site was associated with the PUREX facility.

Code: 200-E-40 **Classification:** Accepted
Names: 200-E-40; PUREX Sample Gallery 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/14/2000)
Type: Storage Pad (<90 day) **Start Date:**

Waste Description: Steel beams and piping.

Code: 200-E-48 **Classification:** Not Accepted
Names: 200-E-48; RCRA Permit General Inspection #200EFY96 Item #15 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is an abandoned steel I beam is 9 meters (30 feet) long and 0.3 meters (1 foot) wide. The site is not marked or posted.
Location: The site is located in the 200 East area, approximately 30 meters (100 feet) northeast of the 207 B Retention Basin.
Waste Type: Equipment
Waste Description: The site is a 9 meter (30 foot) long steel I beam.

Code: 200-E-49 **Classification:** Not Accepted
Names: 200-E-49; Borrow Pit North of BC Cribs and Trenches **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1981
Status: Inactive **End Date:**
Description: The site is a shallow, scraped area located north of the BC Trenches. The borrow pit is currently located inside the boundary of the posted BC Radiologically Controlled Area (WIDS sitecode UPR-200-E-83) and is considered part of the BC Controlled Area.
Location: The site is located south of 200 East Area on the south side of Route 4S.
Process Description: Because of recurring surface contamination problems, the surfaces of the backfilled 200 BC Cribs and Trenches were surface stabilized beginning in August of 1981. Clean backfill material was taken from the area north of and adjacent to the BC Trenches. No waste was placed into the borrow pit.
Related Sites/Structures: The borrow pit is associated with the surface stabilization of the BC Cribs and Trenches (216-B-14 through 19 Cribs, and Trenches 216-B-21 through 34 and 216-B-52 through 58) and the BC Controlled Area (UPR-200-E-83).

Code: 200-E-50 **Classification:** Accepted
Names: 200-E-50; 284-E Brine Pit; 284-E Salt Dissolving Pit and Brine Pump Pit **Reclassification:** Rejected (4/20/2000)
Type: Sump **Start Date:** 1/1/1942
Status: Inactive **End Date:** 1/1/1995
Description: The brine pit is no longer visible. It was cleaned out, demolished into itself, and backfilled with gravel in 1999. It is not marked or posted. The salt dissolving pits and brine pump pit were part of a single below-grade concrete structure that provided brine for the 284-E Powerhouse. The two salt dissolving pits each had inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.8 meters (9.25 feet) tall. They had a designed high water line 2.4

Code: 200-E-52 **Classification:** Accepted
Names: 200-E-52; 200 East Powerhouse Coal Pile **Reclassification:** Rejected (5/13/2008)
Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1998

Description: Only a shallow surface covering of coal remains at the site. On the east and south banks there are large pieces of metal debris (I-beam, metal grate). A coal-covered metal plate covers the chute to the conveyor belt.

Location: The coal pile was located south of the 284 Powerhouse and east of the coal ramp.

Process Description: Large piles of coal had been stored in this area to fuel the 284-E Powerhouse. The powerhouse was shut down in December 1997.

Related Sites/ Structures: The site is associated with the 284-E Powerhouse.

Waste Type: Misc. Trash and Debris

Waste Description: A thin layer of coal and coal dust remains on the surface of the area. A few pieces of metal debris are located at the east end of the coal storage area. A waste determination for Anthracite (Anthrafil) was performed in 1994. A waste determination for bituminous coal dust was performed in 1996. The waste streams for both types of coal were determined to be nondangerous.

Code: 200-E-54 **Classification:** Accepted
Names: 200-E-54; Liquid Release to the Environment from PUREX Deep Filter Bed #1 **Reclassification:** Consolidated (6/30/2004)
Type: Unplanned Release **Start Date:** 1/1/1991
Status: Inactive **End Date:**

Description: The release to the environment occurred as a result of a water line rupture in the basement of the 293-A building.

Location: The release occurred south of the 202 A building, inside the PUREX facility fence.

Release Description: On January 13, 1991 (ref. occurrence report RL--WHC-PUREX-1991-035) a raw water line ruptured in the basement of the 293 A building, resulting in over 380,000 liters (100,000 gallons) of water flooding the basement and backing up into the PUREX Canyon exhaust ventilation ductwork, including the #1 deep bed fiberglass filter. At the time of the release, pumping the water to the tank farms was not possible due to limited available tank storage space. Disposing the water to a crib was ruled out due to the radionuclide content. While disposal options were being sought, the liquid remained in the ventilation ductwork for 21 months. Since the ductwork was not designed to retain liquids, the possibility of a release to the environment was reported in September 1992. Approval to transfer the liquid to the tank farms was given in September 1992. Based on the original release estimate of 380,000 liters (100,000 gallons), it is believed that 201,400 liters (53,000 gallons) leaked to the soil over the 21 months from the release date to the date the liquid was transferred.

Waste Type: Water

Waste Description: The water leaked into the soil over a period of 21 months.

The Site Was Consolidated With:

Code: 200-E-103
Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: 200-E-61 **Classification:** Not Accepted (Proposed)
Names: 200-E-61; 202A Building Stormwater Runoff; Miscellaneous Stream #467 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Active **End Date:**
Description: The site is a circular stormwater drain with a metal-grate cover. The drain is considered to be active.
Location: The site is located north of 202-A (PUREX Canyon), at the northwest corner of the asphalt walkway leading from the guard house to 202-A.
Waste Type: Stormwater Runoff
Waste Description: The site receives stormwater runoff from the north side of the PUREX facility.

Code: 200-E-62 **Classification:** Accepted
Names: 200-E-62; 202A Building Steam Condensate; Injection Well (Z); Miscellaneous Stream #71 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:** 1/1/1996
Description: The drain has a portion of metal culvert extending above the surface. It has a metal cover with a rusty pipe going into it. The steam plant that fed the pipeline that drained condensate to this site has been shut down and could not be easily re-started.
Location: The site is located inside the PUREX fence, on the north side of 203-A, north of the containment dike for tank TK-P3. It is south of 275-EA.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.
Waste Type: Steam Condensate
Waste Description: The site received non- contaminated steam condensate.

Code: 200-E-63 **Classification:** Accepted
Names: 200-E-63; Injection Well (AA); Line #8801 Steam Condensate; Miscellaneous Stream #72 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:** 1/1/1996
Description: The drain is a 1.22 meter (4 foot) diameter, concrete drain with a metal cover.
Location: The site is located north of 202-A, on the northwest corner of the 211-A tanks, between tank

Location: TK-41 and the 211-A chemical access railroad tracks.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-64	Classification: Accepted
Names: 200-E-64; Injection Well (W); Line #8801 Steam Condensate; Miscellaneous Stream #69	Reclassification: None
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1996

Description: The drain is a 0.9 meter (3 foot) diameter concrete drain, covered by a steel plate, with a rusty pipe going into it from the steam line above.

Location: The site is located on the north side of 202A, adjacent to the west end of the laboratory sample receiving dock.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-69	Classification: Accepted
Names: 200-E-69; Injection Well (A); Line #8801 Steam Condensate; Miscellaneous Stream #56	Reclassification: None
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1997

Description: The site is a 1.3 meter (4.5 foot) diameter drain, with a metal cover, located beneath the steam line in the northwest corner of the PUREX complex. The rocks and soil around the drain cover are stained with rust.

Location: The site is in the northwest corner of the PUREX complex, on the east side of the interior security fence.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and

Description:

Code: 200-E-76 **Classification:** Accepted**Names:** 200-E-76; Injection Well (U); Line #8801 Steam Condensate; Miscellaneous Stream #67 **Reclassification:** None**Type:** Injection/Reverse Well **Start Date:****Status:** Inactive **End Date:** 1/1/1997**Description:** The drain is a concrete structure with a 1.5 meter (5 foot) diameter metal cover. The inside of the drain is dry with rust colored rocks. It is labeled 2A-501 - Confined Space.**Location:** The drain is located at the northeast corner of the PUREX complex, inside the inner security fence. It is east of the railroad cut.**Process Description:** Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.**Waste Type:** Steam Condensate**Waste Description:** The site received non-contaminated steam condensate.

Description:

Code: 200-E-78 **Classification:** Accepted**Names:** 200-E-78; Injection Well (Y); Line #8801 Steam Condensate; Miscellaneous Stream #70 **Reclassification:** None**Type:** Injection/Reverse Well **Start Date:****Status:** Inactive **End Date:** 1/1/1996**Description:** The site is a drainage area that received steam condensate from a pipe extending from overhead steam lines. The pipe is attached to the south side of the 203-A building and terminates in cobble filled depression. No drain structure is visible. The steam pipe terminates into the soil inside a Contamination Area that surrounds the 203-A building.**Location:** The site is located north of 202-A, on the southeast corner of the 203-A UNH (uranyl nitrate hexahydrate) Pumphouse.**Process Description:** Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.**Waste Type:** Steam Condensate**Waste Description:** Although the drain received non-contaminated steam condensate, the point where the steam pipe terminates into the ground is located inside a posted Contamination Area.

Code: 200-E-80 **Classification:** Accepted

Names: 200-E-80; Injection Well (V); Line #8801 Steam Condensate; Miscellaneous Stream #68 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The site is a gravel area with some rusty pipes going into the ground. No drain structure is visible from the surface. The site received steam condensate.

Location: The site is located on the northeast side of 202A, next to the north wall of the 206-A fractionator.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-81 **Classification:** Accepted

Names: 200-E-81; Miscellaneous Stream #533; MO-035 Facility Water Valve **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: No drain is visible. The mobile office trailers have been removed. In December of 1997, a layer of clean gravel was laid over the area where the trailers once stood, covering the drain structure.

Location: The site is located north of 202-A, inside the double exclusion fence, just south of the PUREX Badgehouse. It was adjacent to where mobile office MO-035 had been located.

Related Sites/ Structures: The drain was associated with Mobile Office MO-035.

Waste Type: Water

Waste Description: The drain received water valve drainage from a Mobile Office trailer that has been removed from the area.

Code: 200-E-82 **Classification:** Accepted

Names: 200-E-82; Miscellaneous Stream #115; Steam Trap 2P; Yard-MSS-TRP-040 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a 1.3 meter (4.5 foot) diameter, corrugated metal steam valve pit. It has a metal cover. There are two valves inside the pit. The pit was dry on the day of the inspection.

Location: The site is located north of 202-A, outside the double security fence.

Process Description: The steam plant and the steam pipelines associated with PUREX have been shut down as the

Process Description: condensate drains are also inactive. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the PUREX to 204-AR valve pit.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-85 **Classification:** Accepted

Names: 200-E-85; 202A Building Pump Seal Water; Miscellaneous Stream #459 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: A piece of 1/2 inch diameter PVC pipe extends approximately 0.6 meters (2 feet) out of the ground on the north side of the 2712-A building. No drain is visible at this location. It is assumed that a drain pipe from the 2712-A building may have been previously connected to this PVC pipe. It is also possible Stream ID #459 is a duplicate of 216-A-35, located west of the 2712-A building. 216-A-35 is a 1.5 meter (4 foot) diameter drain extending approximately 0.3 meters (1 foot above ground and is painted yellow).

Location: The Inventory of Miscellaneous Streams Report states this drain is located on the southwest corner of the 202-A building. The coordinates in listed in the document place it in the same location as 216-A-35. A PVC drain pipe is located adjacent to the north wall of 2712-A Building, south of 202A. This is a possible location of Stream #459, since the building contained pumps.

Process Description: The site documented site description for stream #459 has created some confusion. In 1998, when the site walkdown was done, the 2712-A Building housed air sampling pumps. This building was considered the source of pump seal water drainage. The Inventory of Miscellaneous Streams Report states that Stream ID 459 received pump seal water, but indicated it was located near the southwest corner of 202-A. The coordinates in the document indicate it is in the same location as 216-A-35.

Related Sites/ Structures: The site is associated with 202-A, 2712-A and 216-A-35

Waste Type: Water

Waste Description: The site received pump seal water.

Code: 200-E-88 **Classification:** Accepted

Names: 200-E-88; B Plant Yard Steam Condensate; Miscellaneous Stream #3 **Reclassification:** None

Description: remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-91	Classification: Accepted
Names: 200-E-91; B Plant Yard Steam Condensate; Miscellaneous Stream #6	Reclassification: None
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1997

Description: The site is a 0.6 meter (2 foot) diameter, rock filled drain with no cover. The rocks are rust stained.

Location: The site is located southwest of 224-B, adjacent to the steam line.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate.

Code: 200-E-92	Classification: Accepted
Names: 200-E-92; B Plant Yard Steam Condensate; Miscellaneous Stream #7	Reclassification: None
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1997

Description: The site is a 0.75 meter (2.5 foot) diameter drain with a fiberglass cover. The site had been covered with dirt during recent grading activities.

Location: The site is located south of 7th Street, south of the 225-B Building, adjacent to the steam line.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Names: 200-E-95; 222B Steam Condensate;
Miscellaneous Stream #308

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1994

Description: The site is a 0.4 meter (18 inch) diameter french drain with a blue metal cover. The drain received steam and air conditioner condensate originating from inside the 222-B Building. The place where the source pipe protruded from the concrete block wall above the drain is visible, but it was cut and capped inside the building.

Location: The site is located adjacent to the north wall of the 222-B building, near the northeast corner of the building.

Process Description: The drain received steam and air conditioner condensate. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. The air conditioner condensate was atmospheric moisture condensing on the cooling coils.

Waste Type: Steam Condensate

Waste Description: The site received steam condensate and air conditioner condensate. The condensate was batch discharged during winter.

Code: 200-E-97

Classification: Accepted

Names: 200-E-97; 212B Building Steam Condensate;
Miscellaneous Stream #470

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1997

Description: The site is a 0.4 meter (18 inch) diameter cement french drain with no lid. The cement drain structure has a cement ring that rises 5 centimeters (2 inches) above the surrounding grade. It is filled with dirt and is dry.

Location: 212-B is located near the southwest corner of the canyon 221-B building. This drain is located adjacent to the north wall of the 212-B building, in between 212-B and 221-B.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The drain received steam condensate from the 212-B building.

Code: 200-E-98

Classification: Accepted

Names: 200-E-98; 271B Building Ice Machine Overflow; **Reclassification:** None
Miscellaneous Stream #490

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1997

Description: The drain is not visible. A sheet metal shroud and a guard rail have been placed over the area that included the drain to keep small animals from accessing the building where pipes were removed. A portion of the source pipe is visible protruding from the cement block wall above the shroud. The pipe has been cut and capped. The shroud was placed over the site to keep stormwater and animals out of the basement of the 271-B Building. When the pipe connecting the air compressors in the basement with the air tanks outside was disconnected (see attached photo, blue structure on right is the tank, blue pipe above is the air pipe) , a potential entry point for stormwater and animal entry into the building remained. The steel cover protects the building.

Location: The site is located adjacent to the east wall of 271-B.

Process Description: The drain received overflow drainage from an ice machine in a second floor lunchroom, via a copper pipe through a cement block wall. The stream was eliminated as a Miscellaneous Stream in July 1997.

Related Sites/ Structures: The site is associated with the 271-B building.

Waste Type: Water

Waste Description: The drain received overflow from an ice machine located inside 271-B.

Code: 200-E-99

Classification: Accepted

Names: 200-E-99; Miscellaneous Stream #570; Steam
Trap 2P-Yard-MSS-TRP-017

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1998

Description: There is no drain structure. It is a low spot in the soil where the steam line discharged steam. The rocks and soil are stained with rust. There is a tag on the steam line that identifies it as MSS-TRP-017.

Location: The site is located adjacent to the steam line, east of the 291-B Sand Filter, near Baltimore Ave.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate.

Description:

Code: 200-E-100

Classification: Accepted

Names: 200-E-100; Miscellaneous Stream #571; Steam Trap 2P-Yard-MSS-TRP-019 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is a low spot in the ground under the steam line where steam discharged. The rocks and soil are slightly stained with rust. There is a tag that identifies it as MSS-TRP-019.

Location: The site is located east of the 291-B Sand Filter, near Baltimore Ave. It is 6 meters (20 feet) west of the steam trap MSS-TRP-017 (site code 200-E-99).

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium).

Code: 200-E-105 **Classification:** Accepted

Names: 200-E-105; Soil Contamination Area on the 216-B-61 Crib **Reclassification:** Rejected (7/28/2008)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site had been a radiologically posted area located on top of the 216-B-61 Crib and also extended to an area where loose tumbleweeds had accumulated between the south edge of the crib and a soil berm. The posted areas had been designated as Soil Contamination Area (SCA) and Contamination Area (CA). Later, only a very small posted (1.2 by 1.2 meters) Contamination Area, located approximately 30 meters (100 feet) west of the 216-B-61 crib remained. In October 2003, the remaining area was also down posted. All the individual radiological postings have been removed. Since the 200 East Area perimeter fence is posted as a Radiologically Controlled Area (RCA), everything inside the fence is technically a RCA.

Location: The site located in the northwest portion of 200-E Area, south of 12th Street. It is northwest of the Hanford Prototype Barrier that covers the 216-B-57 Crib.

Waste Type: Vegetation

Waste Description: The contamination is a result of blown-in tumbleweeds.

Code: 200-E-106 **Classification:** Discovery

Names: 200-E-106; IDF Integrated Disposal Facility; IDWF; ILAW; Immobilized Low-Activity Tank Waste; Immobilized Low-Activity Waste **Reclassification:** None

Type: Trench **Start Date:**

Status: Inactive **End Date:**

Description: As of January 2002, the plans for this site are to construct trenches in the middle of the southern

section of the 200 East Area.

Location: The area designated for the trenches is between 1st and 4th Streets and between the coal plant and the PUREX facility in 200 East.

Process Description: The tank waste remediation program will separate the wastes into two fractions. One fraction, consisting of high-activity wastes, will be vitrified and stored at Hanford until a national repository can be licensed. The low-activity wastes will also be vitrified, but permanently disposed at Hanford in the Immobilized Low-Activity Waste vaults.

Related Sites/ Structures: The site is associated with the RCRA Sand Pile site (site code 200-E-12, Rejected). The existing four vaults constructed for the Grout Treatment Facility Landfill (WIDS site code GTFL), may be used for disposal of ILAW or other wastes.

Waste Type: Process Effluent

Waste Description: The waste disposed in these trenches will be vitrified low-activity waste from the single and double-shelled tanks. More than 200,000 cubic meters (7,000,000 cubic feet) of waste is expected to be disposed at the site.

Code: 200-E-108

Classification: Not Accepted

Names: 200-E-108; Well Drilling Laydown Yard Pit

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date:

Description: The site is located within a large chain link fenced area with a locked gate. It is an empty hole in the ground that has been covered with a piece of plywood.

Location: The pit is located in the southwest section of the fenced laydown yard. The laydown yard is located inside 200 East Area, north of 4th Street and east of Baltimore Avenue.

Code: 200-E-119

Classification: Not Accepted

Names: 200-E-119; 225-B West Side 90 Day Pad

Reclassification: None

Type: Storage Pad (<90 day)

Start Date: 1/1/1997

Status: Inactive

End Date: 1/1/2000

Description: This site is a discontinued 90 Day Storage Pad. Material had been stored in two, self-contained steel cabinets. When the 90 Day Storage Pad was no longer needed, the empty cabinets were moved to the 226-B laydown area. There is no visual evidence remaining at the location of where the cabinets had been located.

Location: The pad was located near the southeast corner of the intersection of 7th and Atlanta Avenues, southwest of the 225-B Waste Encapsulation and Storage Facility (WESF).

Process Description: The cabinets contained PCBs, solvents, and dangerous and mixed wastes.

Related Sites/ Structures: This site was related to the 225-B Building.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description:

B-3-2 and 216-B-3-3) had been backfilled and surface stabilized. After 1994, all the effluent was conveyed to the 216-B-3A and 216-B-3C pond lobes only through underground pipelines. In 1995 the ponds were closed. The remaining effluent was transferred the Treated Effluent Disposal Facility (TEDF). Parts of the pipelines east of 200 East Area, that had fed the ponds, were re-used to feed the TEDF disposal basin. The TEDF portion begins at Manhole #8 and extends to Pump Station #3. In the event of a failure at Pump Station #3, the effluent can be routed to 216-B-3C (C lobe). The section that connects the southeast corner of 216-B-3A to the northwest corner of 216-B-3C is constructed of 76 centimeter (30 inch) corrugated metal pipe.

Related Sites/ Structures: The site is associated with Diverter Stations #2 and Diverter Station #3 (see sitecode 200-E-118) as well as the 207-B Retention Basin, B Plant, PUREX and the 200 East Powerhouse. Portions of the original pipeline were re-used to feed the TEDF system (600-291-PL).

Waste Type: Process Effluent

Waste Description: The pipeline transported 221-B Plant, PUREX, and 200 East Area Powerhouse effluent that included process cooling water, steam condensate and chemical sewer waste.

This Site has the Following SubSites:

Code: 200-E-126-PL:1

Names: 200-E-126-PL:1; 22-Inch Diameter Poly Pipe from 207-B to Diverter Station 2

Code: 200-E-126-PL:2

Names: 200-E-126-PL:2; 21 Inch Vitrified Clay Pipe from Diverter Station 2 to the Head End of 216-B-3 Ditches

Code: 200-E-126-PL:3

Names: 200-E-126-PL:3; 24-Inch Corrugated Metal Pipe from Diverter Station #2 to Diverter Station #3

Code: 200-E-126-PL:4

Names: 200-E-126-PL:4; 216-B-3B; 216-B-3C and 216-E-28 Contingency Pond; Pond Inlet Piping to 216-B-3A

Code: 200-E-126-PL:5

Names: 200-E-126-PL:5; 30-Inch Corrugated Metal Pipe Connecting 216-B-3A Pond to 216-B-3C Pond

Code: 200-E-126-PL:1

Classification: Accepted

Names: 200-E-126-PL:1; 22-Inch Diameter Poly Pipe from 207-B to Diverter Station 2

Reclassification: Rejected (10/19/2010)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This subsite became part of 200-E-126-PL-B.

Location: The pipeline segments in this waste site are located inside 200 East Area, west of the Inner/Outer Area boundary. The waste site begins at the 207-B retention basin and terminates at the Inner/Outer Area boundary.

The SubSite is Part Of:

Code: 200-E-126-PL

Names: 200-E-126-PL; Underground Pipeline from 207-B to 216-B-3 Ditch

Code: 200-E-126-PL:2

Classification: Accepted

Names: 200-E-126-PL:2; 21 Inch Vitrified Clay Pipe

Reclassification: Rejected (10/19/2010)

from Diverter Station 2 to the Head End of 216-B-3 Ditches

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This segment is the original pipeline from the 216-B-2 ditches to the 216-B-3 ditches. It is rejected because it became part of 200-E-126-PL-B.

Location: The pipeline segments in this waste site are located inside 200 East Area, west of the Inner/Outer Area boundary. The waste site begins at the 207-B retention basin and terminates at the Inner/Outer Area boundary.

The SubSite is Part Of:

Code: 200-E-126-PL

Names: 200-E-126-PL; Underground Pipeline from 207-B to 216-B-3 Ditch

Code: 200-E-126-PL:3

Classification: Accepted

Names: 200-E-126-PL:3; 24-Inch Corrugated Metal Pipe from Diverter Station #2 to Diverter Station #3

Reclassification: Rejected (10/19/2010)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: This segment was rejected because it became part of 200-E-126-PL-B.

Location: The pipeline segments in this waste site are located inside 200 East Area, west of the Inner/Outer Area boundary. The waste site begins at the 207-B retention basin and terminates at the Inner/Outer Area boundary.

The SubSite is Part Of:

Code: 200-E-126-PL

Names: 200-E-126-PL; Underground Pipeline from 207-B to 216-B-3 Ditch

Code: 200-E-126-PL:4

Classification: Accepted

Names: 200-E-126-PL:4; 216-B-3B; 216-B-3C and 216-E-28 Contingency Pond; Pond Inlet Piping to 216-B-3A

Reclassification: Rejected (10/19/2010)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: These segments were rejected because they became part of 200-E-126-PL-A. These are individual pipe segments that fed the 216-B-3A from the northwest corner of the pond, the 216-B-3b from the northwest corner of the pond and the 216-B-3C from the northwest corner of the pond. This subsite also includes the inlet piping that could have fed the 216-E-28 Contingency Pond.

Location: The 200-E-126-PL-A pipeline segments are located east of the 200 East Area fence line, beyond the Inner/Outer Area boundary.

The SubSite is Part Of:

Code: 200-E-126-PL

Names: 200-E-126-PL; Underground Pipeline from 207-B to 216-B-3 Ditch

Code: 200-E-126-PL:5 **Classification:** Accepted
Names: 200-E-126-PL:5; 30-Inch Corrugated Metal Pipe **Reclassification:** Rejected (10/19/2010)
Connecting 216-B-3A Pond to 216-B-3C Pond
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: This segment was rejected because it became part of 200-126-PL-A.
Location: The 200-E-126-PL-A pipeline segments are located east of the 200 East Area fence line, beyond the Inner/Outer Area boundary.

The SubSite is Part Of:

Code: 200-E-126-PL
Names: 200-E-126-PL; Underground Pipeline from 207-B to 216-B-3 Ditch

Code: 200-E-127-PL **Classification:** Accepted
Names: 200-E-127-PL; Line 1601; Pipeline from PUREX **Reclassification:** Rejected (10/19/2010)
to Gable and B-Ponds (216-A-25 and 216-B-3);
PUREX Cooling Water Line
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: Due to the restructuring of Operable Units, as described in the Tentative Agreement for Central Plateau Cleanup, this pipeline has been split into segments (see 200-E-127-PL-A and 200-E-127-PL-B). The majority of the pipeline is constructed of large diameter corrugated metal pipe. The 36 inch diameter corrugated metal pipe enlarges to 42 inch diameter corrugated metal pipe at Manhole #8 (north of B Pond). The pipeline is marked with steel posts and Underground Radioactive Material - Pipeline signs. Near the 810 gate, an area of growing contaminated vegetation was stabilized with biobarrier and posted with Underground Radioactive Material Area signs. A portion of the pipeline is under the Liquid Effluent Retention Facility (LERF) berm.
Location: The pipeline extends northward, along the east side of 200 East Area. It begins at the PUREX facility and the 216-A-42 Retention Basin. It continues northward to the 216-A-25 Pond (Gable Mountain Pond). A portion of the pipeline extends between the 241-A-201 Emergency Cooling Water storage tanks and the 216-A-42 diverter station.
Process Description: The pipeline conveyed PUREX and B Plant effluent to the (216-A-25) Gable Pond or the (216-B-3) B Pond system. The effluent stream was directed to the preferred pond via Diverter Station #3. The pipeline south of Diverter Station #3 is constructed of 91 centimeter (36 inch) diameter corrugated metal. From Diverter Station # 3 northward to the 216-A-25 Pond, the pipeline is constructed of 107 centimeter (42 inch) diameter corrugated metal pipe. The portion of the pipeline between the 241-A-201 cooling water storage tanks and the 216-A-42 basin (30 inch VCP) was taken out of service in June 1992.
Related Sites/Structures: The pipeline is associated with the PUREX, B Plant and the 242-A Evaporator facilities and 216-A-25 (Gable Mountain Pond) Also see sitecode 200-E-118 (Diverter Structure #3), 241-A-201 Emergency Cooling Water Storage Tanks, 216-A-42 basin, 200-E-127-PL-A and 200-E-127-PL-B.
Waste Type: Process Effluent
Waste Description: The pipeline conveyed process cooling water from 202-A Building (Plutonium Uranium Extraction [PUREX] Plant). From May 1958 to 1960, the unit received the above plus cooling

water from the contact condenser in the 241-A-431 Building. In 1960, the unit received the above plus the surface condensator cooling water in the 241-A-401 Building (A Tank Farm). From November 1967 to January 1968, the unit received the above plus the wastewater from the 284-E Powerhouse. From January 1968 to March 1969, the unit received the above plus the cooling water and steam condensate from the 244-AR Vault. In March 1969, the pipeline to the contact condenser cooling system from the 241-A-431 Building Vault was valved out. After March 1977, the unit received the above plus the 242-A Evaporator steam condensate cooling water. (RHO-CD-798 shows a valve at the east end of the 216-B-2-3 Ditch connecting to PUREX Cooling Water Line to Gable Pond. The graphic is labeled "Effluent Pipelines and Transfer Capabilities for Gable Mountain and B Ponds").

Code: 200-E-134 **Classification:** Accepted

Names: 200-E-134; Potentially Contaminated Soil in 241-AW Tank Farm **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:**

Description: The site is the potentially contaminated soil inside the chain link fence that surrounds the 241-AW Tank Farm. Various radiological postings and warning signs (RA, RBA, RMA,URMA, Internally Contaminated Systems) are attached to the chain link fence. The interior of the tank farm complex is covered with gravel. Many risers and monitoring devises for the underground structures are visible on the surface. Currently, Contamination Area postings are located around the HEPA filter housing, pits, Clean Out Boxes and other equipment within the tank farm. In November 2010, the east side of the tank farm fence was expanded (150 feet long, 5 feet wide) to allow room for vehicles to maneuver around the exhauster skid.

Location: The 241-AW Tank Farm is located at the intersection of 4th Street and Canton Ave. in 200 East Area.

Process Description: The six tanks in the 241-AW Tank Farm are double shell construction.

Code: 200-E-136 **Classification:** Accepted

Names: 200-E-136; 202-A TSD; PUREX **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1956

Status: Active **End Date:** 1/1/1990

Description: This site is the entire PUREX Treatment, Storage, and Disposal (TSD) facility. It includes the individual tanks that had been provided separate WIDS codes; they are to be consolidated into this site. The PUREX Storage Tunnels are a separate TSD and are not a part of this site. The main part of the facility is the 202-A Building, in which the fuels were reprocessed. It is a reinforced concrete structure, 1,005 feet by 119 feet by 100 feet high (306 meters by 36 meters by 30 meters), with about 40 feet (12 meters) of the height below grade. The building consists of three main structural components: (1) a thick-walled concrete 'canyon' in which the equipment for radioactive processing is contained in cells below grade; (2) a pipe, sample, and storage gallery section; and (3) a steel and transite annex that houses offices, process control rooms, laboratories, and the building services. The portion of the canyon below grade is subdivided into a row of 12 process equipment cells paralleled by a ventilation air tunnel and pipe tunnel through which intercell solution transfers are made. The air tunnel exhausts the ventilation air from the cells to the main ventilation filters and stack.

Location: The PUREX Plant is located in the southeast corner of the 200 East Area.

Process PUREX was designed and constructed to provide supplemental fuel reprocessing capabilities to

Description: separate plutonium and uranium products from irradiated fuel. The PUREX process was designed to reprocess aluminum-clad uranium metal fuel to recover weapons-grade plutonium and depleted uranium. The process was later modified to reprocess zirconium alloy clad fuel from N Reactor to recover fuels-grade plutonium, slightly enriched uranium, and neptunium.

Related Sites/ Structures: This site is associated with the individual components of this TSD that have their own WIDS numbers as of September 2001 are: 202-A-E-F11 (PUREX Tank E-F11), 202-A-E5 (PUREX Tank E5), 202-A-F15 (PUREX Tank F-15), 202-A-F16 (PUREX Tank F-16), 202-A-F18 (PUREX Tank F18), 202-A-G7 (PUREX Tank G7), 202-A-U3 (PUREX Tank U3), 202-A-U4 (PUREX Tank U4), and 202-A-WS-1 (PUREX Waste Piles). Site 216-A-29 (Snow's Canyon, PUREX Chemical Sewer), is TSD D-2-3. Sites 218-E-14 and 218-E-15 (PUREX Tunnels No. 1 and No. 2) are also a separate TSD, S-2-1. Some of the major liquid effluent disposal facilities associated with PUREX are Gable Mountain Pond (216-A-25), B-Pond (216-B-3), and the 216-A-42 Trench, which received emergency radioactive discharges that were diverted from going to the ponds. Process condensate from the final uranium cycle was monitored for radioactivity and discharged through a stainless steel pipe to the 216-A-10 Crib south of the west end of PUREX. Steam condensate was also monitored for radioactivity and discharged to the 216-A-30 Crib east of PUREX. Ammonia scrubber waste condensate was sent to the 216-A-36B Crib south of PUREX. Steam and process condensates and acid overflow from the 203-A Area tanks were sent to the 216-A-3 Crib, north of the 203-A Tank Farm. Several radiologically controlled areas are adjacent to PUREX, including 200-E-103 on the south side and 200-E-107 on the east side. Site 200-E-44 is the PUREX Railroad Cut.

Waste Type: Equipment

Waste Description: Some of the waste remaining in the facilities include lead (in paint, light bulb contacts, shielding, pipe joints, washers affixing transite), mercury (thermostats and switches), asbestos (transite siding, insulation, gaskets), organic substances (greases and residues in gearboxes and bearings), PCBs (transformers, ballasts, lubricants, oils), cadmium (dissolver moderator lining in canyon cells), and silver (silver reactor in cells), chromium (in cell debris).

Code: 200-E-137

Classification: Accepted

Names: 200-E-137; 291-B Exhaust Stack; 291-B-1

Reclassification: None

Type: Stack

Start Date: 1/1/1944

Status: Inactive

End Date: 1/1/1998

Description: The unit consists of a reinforced concrete stack, lined with acid-resistant brick resting on an octagonal, two-tiered foundation of brick and concrete. The stack is 61 meters (200 feet) high and 4.3 meters (14 feet) in diameter at the base.

Location: The exhaust stack is located south of the 221-B canyon building, west of the 291-B sand filter.

Process Description: The stack provided air exhaust for the 221-B Canyon building. Sand Filters were added to the B Plant exhaust systems in 1948. The sand filter was constructed for use in conjunction with the bismuth phosphate process. Later, HEPA pre-filters (291-BC and BD, BF and BH) were installed in parallel with the sand filter.

Related Sites/ Structures: The stack is associated with the 216-B-13 French Drain and the Sand Filter (sitecode 200-E-30).

Waste Type: Process Effluent

Waste Description: The air exhaust system was contaminated with radioactive particulates.

Description:

Code: 200-E-138 **Classification:** Accepted

Names: 200-E-138; 291-B Replacement Stack; 296-B-1 Exhaust Stack; Canyon Exhaust System; Canyon Ventilation Upgrade **Reclassification:** None

Type: Stack **Start Date:** 1/1/1998

Status: Active **End Date:**

Description: The 296-B-1 exhaust stack is a 29 meter (95 foot) carbon steel pipe anchored to the south side of the 221-B building.

Location: The 296-B-1 Stack is located adjacent to the south side of 221-B, Section 8.

Process Description: The new canyon exhaust system consists of two parallel Air Cleanup Trains (ACT) prefilters and two banks of High Efficiency Particulate Air (HEPA) filters.

Related Sites/Structures: The stack is associated with 221-B, 221-BK and the ACT prefilter and HEPA filter banks. It replaced the 291-B Exhaust Stack (200-E-137).

Waste Type: Process Effluent

Waste Description: Filtered canyon air is exhausted through the stack.

Code: 200-E-140 **Classification:** Not Accepted

Names: 200-E-140; Gravel Pit 32 **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The site had been an open excavation containing gravel. A site visit in October 2004 noted that the construction of the new Immobilized Low-Activity Waste (ILAW) site had extended over the gravel pit area. No evidence of the gravel pit remains.

Location: The site is located south of the PUREX facility. It is north of 1st Street and west of Canton Ave. It is on the west side of the gravel road that leads to PUREX.

Process Description: The site was used as a source of clean backfill material. It is a good source of sand and sandy soil.

Related Sites/Structures: 200-E-106 (Immobilized Low-Activity Waste storage)

Waste Type: Soil

Waste Description: The site is a source of backfill material. No waste is stored at this site.

Code: 200-E-146-PL **Classification:** Accepted

Names: 200-E-146-PL; Tank Farm Transfer Line A-4013; Transfer Line from 241-CR-152 to 241-AX-151 **Reclassification:** Rejected (10/26/2006)

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: A-4013 is a DUPLICATE entry. It is the same line as line 4103, described in sitecode 200-E-

144-PL. Transfer Line A-4013 is radiologically posted as an Underground Radioactive Material Area. The pipeline is a 3 inch diameter, stainless steel pipe. The transfer line is located in the Interplant Transfer Encasement per drawing H-2-44501, sheet 92.

Location: Line A-4013 originates inside the 241-C Farm at the 241-CR-152 Diversion Box, passes through the 241-ER-153 Diversion Box and terminates at the 241-AX-151 Diverter Station at the corner of 4th Street and Buffalo Avenue in 200 East Area.

Related Sites/ Structures: Associated with Sitecode 200-E-144-PL

Code: 200-E-210-PL **Classification:** Accepted

Names: 200-E-210-PL; Encased Lines Between 241-AW Tank Farm and 242-A Evaporator Building; Lines SL-167, SL-168, SN-219, SN-220, SN-269 and SN-270 **Reclassification:** None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Active

End Date:

Description: The waste site is four underground, carbon steel lines within the same concrete encasement. Lines SL-167 and SL-168 are 5 centimeter (2 inch) diameter lines. Lines SN-219, SN-220, SN-269 and SN-270 are 7.6 centimeter (3 inch) diameter lines.

Location: The encased transfer line extends northward from the 241-AW Tank Farm and connects to the west side of the 242-A Evaporator building. The line crosses under 4th Street.

Process Description: Lines SN-219 and SN-220 drop out of the encasement near the southwest corner of the 242-A Evaporator building and continue into the 241-A Tank Farm. They connect to the 241-A-A and 241-A-B Valve Pits. SN-219 and SN-220 are inactive lines. In October 2009, SL-167 and SN-269 are considered to be active lines. SL-168 and SN-270 are back up lines that could be used if SL-167 or SN-269 failed.

Related Sites/ Structures: The lines are associated with the 241-AW-A and 241-AW-B, 241-A-A, 241-A-B valve pits, and the 242-A Evaporator facility.

Code: 200-E-211-PL **Classification:** Accepted

Names: 200-E-211-PL; Lines DR334, DR335 and DR343; Transfer Lines from 241-AW to 242-A Evaporator Building **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Active

End Date:

Description: The waste site is three underground transfer lines buried in the same soil trench. Lines DR334 and DR335 are 25 centimeter (10 inch) diameter carbon steel lines double contained within 30 centimeter (12 inch) diameter carbon steel pipes. Line DR343 is a direct buried 15 centimeter (6 inch) diameter carbon steel pipe.

Location: The group of lines extend north from 241-AW Tank Farm to connect to the north side of the 242-A Evaporator Building. The lines cross under 4th Street.

Process Description: In October 2009, these lines were considered to be active.

Related Sites/ Structures: The lines are associated with 241-AW and the 242-A Evaporator.

Structures:

Code: 200-E-212-PL **Classification:** Accepted

Names: 200-E-212-PL; Lines SL-509, SL-510, SN-609 and SN-610; Transfer Lines Between 241-AW Tank Farm and 241-AP Tank Farm **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Active **End Date:**

Description: The waste site is four underground carbon steel pipelines buried in the same soil trench. Lines SL-509 and SL-510 are 5 centimeter (2 inch) diameter carbon steel pipes double contained inside 10 centimeter (4 inch) diameter carbon steel pipes. Lines SN-609 and SN-610 are 7.6 centimeter (3 inch) diameter carbon steel pipes double contained inside 15 centimeter (6 inch) diameter carbon steel pipes.

Location: The transfer lines extend from the east side of 241-AW Tank Farm to the west side of 241-AP Tank Farm. The cross under Canton Ave., north of 272-AW.

Process Description: In October 2009, these lines were considered to be active pipelines.

Related Sites/Structures: The pipelines are associated with the 241-AW and 241-AP Tank Farms.

Code: 200-E-235-PL **Classification:** Accepted

Names: 200-E-235-PL; 207-A North Basin Distribution Lines; Lines 501,502, 503, 504, 506, and 507 **Reclassification:** Consolidated (5/31/2011)

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is 7.6 centimeter (3 inch) and 10 centimeter (4 inch) diameter carbon steel pipes that distributed waste from the 207-A pump pit to the three sections of the 207-A North basin.

Location: The 207-A North Retention Basin is located east of Canton Ave. and north of 4th Street. The distribution lines extend north from the 207-A pump pit.

Related Sites/Structures: The distribution lines are associated with the 207-A pump pit and the 207-A North basins.

The Site Was Consolidated With:

Code: 207-A-NORTH

Names: 207-A-NORTH; 207-A-NORTH Retention Basin; 207-A; 207-A North; 207-A Retention Basin

Code: 200-E-236-PL **Classification:** Accepted

Names: 200-E-236-PL; 207-A South Basin Distribution Lines; Lines 557, 558, 559, 560, 562, and 563 **Reclassification:** Consolidated (5/31/2011)

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is 7.6 centimeter (3 inch) and 10 centimeter (4 inch) diameter carbon steel pipes that distributed waste from the 207-A pump pit to the three sections of the 207-A South basin.

Location: The 207-A South Retention Basin is located east of Canton Ave. and north of 4th Street. The

distribution lines extend south from the 207-A pump pit.

Related Sites/ Structures: The distribution lines are associated with the 207-A pump pit and the 207-A South basins.

The Site Was Consolidated With:

Code: 207-A-SOUTH

Names: 207-A-SOUTH; 207-A-SOUTH Retention Basin and Pump Pit; 207-A; 207-A Retention Basin; 207-A South

Code: 200-E-286

Classification: Accepted

Names: 200-E-286; A Swamp; A-Swamp and Ditch; Original 200 East Area Powerhouse Effluent Pond; Powerhouse Swamp

Reclassification: Rejected (11/4/2009)

Type: Pond

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1953

Description: There is no longer any visible signs of the A-Swamp or the distal end of the ditch. The eastern end of the ditch was removed during the construction of 241-A Tank Farm and the later construction of 241-AP Tank Farm. The area where the swamp had been located is now underneath where the Grout Facility and Waste Treatment Plant were built.

Location: The Powerhouse Swamp had been located east of the 200 East Area fence, approximately where the head end of the 216-A-29 Ditch and Grout Facility were later constructed.

Process Description: The original, horse shoe shaped ditch emptied into a shallow depression east of the 200 East Area fence known as the Powerhouse Pond from 1946 through 1953. In 1954, the powerhouse ditch effluent was redirected to B Pond. This is the ditch currently known as the 200 East Powerhouse Ditch (sitecode 200-E PD).

Related Sites/ Structures: This site is associated with the 200 East Powerhouse Ditch (sitecode 200-E PD) and the 216-A-29 Ditch.

Code: 209-E-WS-1

Classification: Accepted

Names: 209-E-WS-1; 209-E French Drain

Reclassification: Rejected (1/25/2000)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The drain has a metal cover that is painted bright yellow, because it is located in a paved parking area. The unit is a french drain that is 1.2 meters (4 feet) in diameter and 2.4 meters (8 feet) deep.

Location: The unit is located in the parking area at the northeast corner of the 209-E Critical Mass Building, office wing.

Process Description: This site received steam condensate only. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 209-E Building.

Waste Type: Steam Condensate

Waste Description: The unit received steam trap condensate and steam condensate from 209-E.

Code: 216-E-28 **Classification:** Not Accepted

Names: 216-E-28; 200 East Area Contingency Pond; 216-E-25 **Reclassification:** None

Type: Pond **Start Date:** 1/1/1986

Status: Inactive **End Date:**

Description: This 216-E-28 Contingency Pond is inactive and dry. It is a large cobble filled depression that is divided into three lobes by soil berms. Each lobe has a 1.2 meter (48 inch) diameter corrugated metal culvert. It is not marked or posted.

Location: The 216-E-28 Contingency Pond is located east of the 200 East Area perimeter fence and north of the 216-B-3 Main Pond.

Process Description: When the 216-B-3 Main Pond and 216-B-3-3 Ditch were isolated, a new pipeline was built to divert effluent to the 216-B-3 Pond Expansion Lobes and this Contingency Pond. The 216-E-28 Contingency Pond was designed to receive effluents from the B Pond streams. It was held in reserve for any future embankment failures in the ponds. It was never needed and never used for this process. However, in 2007 drill cuttings and mud, from three boreholes and one corehole drilled at the Waste Treatment Project Vitrification site, was placed into the Contingency Pond.

Related Sites/ Structures: The 216-E-28 Contingency Pond is associated with the 216-B-3 Pond system.

Code: 218-E-3 **Classification:** Not Accepted

Names: 218-E-3; Construction Scrap Pit **Reclassification:** None

Type: Burial Ground **Start Date:** 1/1/1954

Status: Inactive **End Date:** 1/1/1971

Description: The pit was exhumed and material removed. It is now part of an open field with sparse vegetation (rabbitbrush and cheatgrass) growing in the gravel.

Location: The site was located in the extreme southwest corner of 200 East Area, north of Highway 4S. It was north of 1st Street and east of Akron Ave,

Waste Type: Construction Debris

Waste Description: The site received metal slip forms, barrels and timbers from the construction of 202-A that became contaminated with ruthenium-106 from a REDOX stack release.

Code: 218-E-6 **Classification:** Accepted

Names: 218-E-6; B Stack Shack Burning Pit; Buried Contamination **Reclassification:** Rejected (5/13/2008)

Type: Burial Ground **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The site is no longer marked or posted

Location: Originally the site (burn pit) was located in the southeast corner of the 221-B Exclusion Area approximately 94 meters (300 feet) south of 221-B.

Process Description: At one time the site was a burn pit that was used to burn wooden items removed from the 291-B stack area during cleanup of the 221-B Exclusion Area. A trench approximately 1.2 meters (4 feet) deep was dug. The contaminated material was then burned and the remaining ashes were covered with soil. The site was excavated to determine the remaining activity. Pieces of partially burned wood and ashes were uncovered at a depth of 1.2 meters (4 feet). Radioactivity was non-detectable. The zone was released from Radiation Zone status in 1972.

Related Sites/ Structures: The site was related to the 221-B exclusion area. Materials that were burned were collected from within this area and burned in the pit.

Waste Type: Demolition and Inert Waste

Waste Description: According to the documentation, no waste remains at this site.

In 1955, contaminated wooden forms, a shack and other wooden items were placed into a 1.2-meter (4-foot) deep trench and burned. The ashes were backfilled with dirt and the area was marked with "Underground Contamination" signs.

In 1971, the site was excavated to a depth of 1.2 meters (4 feet). A radiological survey was done on the ashes and partially burned wood. No radiological contamination was found. The site was released from Radiation Zone status. Stenner et al. (1988) report that the site has been exhumed and the contents removed to a 200 East Area burial ground.

Code: 218-E-12B ANNEX **Classification:** Not Accepted

Names: 218-E-12B ANNEX; 218-E-12B Western Portion West of Trench 37; Unused Portion of 218-W-12B **Reclassification:** None

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: The area is a barren field. The area designated for additional waste trenches in the western portion of the 218-E-12B Burial ground was never used.

Location: This site is located south of 12th Street in 200 East Area. It is west of trench 37 in the 218-E-12B burial ground.

Related Sites/ Structures: The 218-E-12B Annex is associated with WIDS sitecode 200-E-288, which documents a small amount of debris.

Code: 218-E-14 **Classification:** Accepted

Names: 218-E-14; PUREX Storage Tunnel; PUREX Tunnel No. 1 **Reclassification:** None

Type: Storage **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1965

Description: PUREX Tunnel Number 1 is an extension of the railroad tunnel, extending south of the east end of the 202-A Building. It is an enclosed, above ground storage facility. It is approximately 109 meters (358 feet) long, 5.8 meters (19 feet) wide, and 6.9 meters (22.5 feet) high. The railroad tracks have a one percent downgrade to the south. The tunnel is ventilated by an absolute filtered exhauster at the south end of the tunnel.

Location: The site is located south of the east end of the 202-A building.

Process Description: The tunnel construction was completed in 1956. The tunnel is filled to capacity with failed equipment on eight rail cars. A water-fillable door has been drained and the tunnel door is sealed shut.

Waste Type: Equipment

Waste Description: This site received extremely large, heavy or highly contaminated waste equipment stored on eight railroad flatcars. The volume of waste on the rail cars ranges from 53 to over 168 cubic meters (1,900 to over 6,000 cubic feet). The curie content decayed through 1990 was 945.3 of cesium -137, 845.2 of strontium -90 and 0.0684 of ruthenium-106. Railcars 1&2 contain a HA column and jumpers with approximately 2400 curies of radioactive material. Railcar 3 contains a failed E-F11, 1WW waste concentrator with approximately 40,000 curies of radioactive material. Railcar 4 contains a G-2 centrifuge with approximately 3,000 curies of radioactive material. Railcar 5 contains a failed E-H4 waste concentrator with approximately 1,000 curies of radioactive material. Railcar 6 contains a failed E-F6, 2WW waste concentrator with approximately 700 curies of radioactive material. Railcar 7 contains a second failed E-F11, 1WW waste concentrator with approximately 40,000 curies of radioactive material. Railcar 8 contains a spare failed, waste concentrator with approximately 700 curies of radioactive material. 230 kilograms of lead is associated with the material on the railcars.

Code: 218-E-15 **Classification:** Accepted

Names: 218-E-15; PUREX Storage Tunnel; PUREX Tunnel No. 2 **Reclassification:** None

Type: Storage **Start Date:** 1/1/1967

Status: Inactive **End Date:** 1/1/1996

Description: The above grade tunnel is covered with soil. The railroad tracks have a one percent downgrade to the south end of the tunnel. The tunnel is constructed of a bituminous coated steel liner attached to external reinforced concrete. The tunnel is ventilated by a filtered exhauster at the south end of the tunnel. The water has been removed from the "water filled" door and the tunnel door has been sealed.

Location: PUREX Tunnel Number 2, located southeast of the 202A Building, is an extension of the railroad tunnel. It is east of 218-E-14 (Tunnel Number 1).

Process Description: The tunnel construction was completed in 1964. The tunnel stores contaminated equipment on flat bed rail cars and three empty liquid waste tank cars. Seventeen shipments were received during 1995 and 1996 from the 324 Laboratory Facility clean out activity. The tunnel contained a total of 28 rail cars as of July 1996.

Waste Type: Equipment

Waste Description: railroad flat cars. The tunnel has the capacity to hold 40 railcars. As of June 1996, 28 railcars had been placed in the tunnel. The tunnel contains an estimated total of 2,730,000 curies of radionuclides and 762 grams (27 ounces) of plutonium. In addition to radioactive contaminants, the equipment stored in the tunnel also contains lead, silver, mercury, cadmium, chromium, barium and oil.

Code: 2607-E1A **Classification:** Accepted

Names: 2607-E1A; 2607-E1-A; 2607-E1A Septic System; L-272 Regional System **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1997

Status: Active **End Date:**

Description: The system includes a septic tank, a dosing chamber and a three section drain field. The area is covered with gravel and marked appropriately.

Location: The septic system is located inside 200 East Area, north of 4th Street and west of Baltimore Ave.

Process Description: This system is designed to replace several smaller septic systems located in 200 East Area. The septic system is approved for a flow rate of 54,890 liters per day (14,500 gallons per day). The septic tank is a 82,350 liter (21411 gallon) tank, located east of the three drain fields. An area west of the drain fields has been reserved for a fourth drain field, that has been proposed for future use. A 52,500 liter (13,650 gallon) dosing tank is located adjacent to the septic tank.

Waste Type: Sanitary Sewage

Waste Description: The septic system receives sanitary waste with volumes up to 54,890 liters (14,500 gallons) per day.

Code: 2607-E8 **Classification:** Accepted

Names: 2607-E8; 2607-E8 Septic Tank and Tile Field **Reclassification:** Closed Out (11/9/2004)

Type: Septic Tank **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1997

Description: The septic tank surface is identified by two circular access ports surrounded with concrete. A sign, on the ground in April 2001, reads "2607-E8". The associated drain field had a capacity of 13,400 liters (3,533 gallons) per day.

Location: This unit is located north of 1st Street and east of Baltimore Avenue, across from the 2101-M Building.

Process Description: The 2607-E8 Septic Tank and associated drain field were designed to accept and treat sanitary sewer effluent from the connected facilities.

Related Sites/Structures: The 2607-E8 Septic Tank was associated with the 2607-E8 Tile Field, the 2101-M Building, the MO-021, the MO-042, the MO-043, the MO-407, the MO-413, and the MO-234 Buildings. It was replaced by the 2607-E8A regional system.

Waste Type: Sanitary Sewage

Waste Description: Septic Tank 2607-E8 receives sanitary wastewater and sewage at an estimated rate of 220 cubic feet (6.24 cubic meters) per day.

Closure Info: The system was abandoned in 1997 in accordance with Washington Administrative Code 246-

272-18501.

Code: 2607-E8A **Classification:** Accepted
Names: 2607-E8A; 2607-E8-A; 2607-E8A Regional Septic System **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1996
Status: Active **End Date:**
Description: The septic system is surrounded with light posts and chain.
Location: The septic system is located south of the 284-E Powerhouse, on the east side of Baltimore Ave.
Process Description: The system was constructed in 1996. It is approved by the State of Washington to receive a flow of 54,890 liters per day (14,500 gallons per day).
Related Sites/ Structures: The new regional system replaced the 2607-E8 septic tank and tile field.
Waste Type: Sanitary Sewage
Waste Description:

Code: 2607-E10 **Classification:** Accepted
Names: 2607-E10 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1993
Status: Active **End Date:**
Description: The 2607-E10 Septic Tank system consists of two tanks and receives sanitary wastewater and sewage. The drain field associated with this system has a design capacity of 1,298 gallons (4,900 liters) per day.
Location: This unit lies north of the 216-A-37-1 Crib and east of the 241-AP Tank Farm, in the area known as the Grout Treatment Facility.
Process Description: The 2607-E10 Septic Tank and associated drain field are designed to accept and treat sanitary sewer effluent from the connected facilities.
Related Sites/ Structures: The 2607-E10 Septic Tank is associated with a drain field, the Grout Trailer, MO-392, MO-041, MO-282, MO-283, MO-284, MO-997 and MO-243-G4.
Waste Type: Sanitary Sewage
Waste Description: The 2607-E10 Septic Tank receives sanitary wastewater and sewage at an estimated rate of 665 gallons (2,500 liters) per day.

Code: 2607-E11 **Classification:** Accepted
Names: 2607-E11; 2607-E11 Septic Tank **Reclassification:** Closed Out (11/9/2004)
Type: Septic Tank **Start Date:** 1/1/1985
Status: Inactive **End Date:** 1/1/1997
Description: This unit is a two-chamber tank. The tank has an associated drain field and had a capacity of

3,500 liters (927 gallons) per day.

- Location:** The site is located inside 200 East Area, north of 4th Street and east of Baltimore Ave. The system is located southeast of the Dry Materials Receiving and Handling silos.
- Process Description:** The 2607-E11 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 2400-E Building, the Transportable Grout Facilities, MO-385, MO-386, MO-354 and the Dry Materials Receiving and Handling Facility. This project was abandoned and it's associated buildings are no longer occupied.
- Related Sites/ Structures:** The 2607-E11 Septic Tank was installed to support the Dry Materials Receiving and Handling Facility (2400-E) Building, the Transportable Grout Facilities, and the MO-385, MO-386, MO-354 trailers.
- Waste Type:** Sanitary Sewage
- Waste Description:** This system received sanitary wastewater and sewage at an estimated rate of 835 gallons (3160 liters) per day. There are no sampling results or inventory information available for this site.
- Closure Info:** The system is closed. The system was abandoned in 1997 in accordance with Washington Administrative Code 246-272-18501. It was replaced by a new regional system.

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- Code:** 2607-E14 **Classification:** Accepted
- Names:** 2607-E14; A Farm Pipefitters Shop Septic; 242-AC Septic **Reclassification:** None
- Type:** Septic Tank **Start Date:**
- Status:** Active **End Date:**
- Description:** The waste site is an underground septic tank that services the A Tank Farm Pipefitters shop building.
- Location:** The 242-AC Pipefitter Shop is located near the corner of 4th Street and Buffalo Ave. in 200 East Area. The septic tank is located north of 242-AC.

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- Code:** 2607-EH **Classification:** Accepted
- Names:** 2607-EH; 2607-EH Septic System **Reclassification:** Rejected (5/31/2001)
- Type:** Septic Tank **Start Date:**
- Status:** Inactive **End Date:**
- Description:** WIDS site 2607-EH has been described as a septic tank and associated drain field.
- Location:** This septic system has been described as being located on the west side of Baltimore Avenue adjacent to the east side of the 2101-M Building.
- Waste Type:** Sanitary Sewage
- Waste Description:** According to the Hanford Site Waste Management Units Report (Cramer, 1987), the 2607-EH Septic System received sanitary wastewater and sewage from the 2101-M building at an estimated rate of 1.36 cubic meters (48.00 cubic feet) per day.

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- Code:** 2607-EJ **Classification:** Accepted
- Names:** 2607-EJ; 2607-EJ Septic System **Reclassification:** Closed Out (5/31/2001)
- Type:** Septic Tank **Start Date:**

Status: Inactive

End Date:

Description: The 2607-EJ Septic System was the original system that serviced the 272-AW building. The tank and drainfield were removed as part of the 50 foot deep excavation for the 241-AP Tank Farm. The concrete septic tank was divided into two compartment with volumes of 7800 liters (2000 gallons) and a 3900 liters (1000 gallons). It measured 5.9 meters (19.5 feet) long, 2.1 meters (7 feet) wide, and 1.8 meters (6 feet) deep (outer dimensions). The tank had three 0.6 meter (2 foot) access ports which were covered with concrete lids. The tank was connected to a small concrete distribution box which routed the waste from the tank to the sanitary drainfield. The drainfield consisted of five 15 meter (50 foot) runs of perforated drain tile.

Location: The 2607-EJ Septic System was located east of 272-AW and west of tank 241-AP-103.

Process Description: The 2607-EJ Septic Tank and the associated drain field were designed to accept sanitary sewer effluent.

Related Sites/ Structures: The 2607-EJ Septic System was associated with the 272-AW Building.

Waste Type: Sanitary Sewage

Waste Description: The 2607-EJ Septic System received sanitary wastewater and sewage.

Closure Info: The 2607-EJ Septic System was removed during site preparation for the construction 241-AP Tank Farm. The tank and drainfield were in the layback for the 15 meter (50 foot) deep excavation for the tank farm.

Code: 2607-EK

Classification: Accepted

Names: 2607-EK

Reclassification: Closed Out (5/31/2001)

Type: Septic Tank

Start Date: 1/1/1975

Status: Inactive

End Date: 1/1/1997

Description: The 2607-EK Septic Tank is a reinforced concrete tank and posted in the field as "Septic Tank 2607EK." The associated drainfield is east of the tank. The drainfield is comprised of eleven parallel runs of 15 centimeter (6 inch) perforated drain pipe. The runs are 27 meters (90 feet) long and spaced 2.4 meters (8 feet) apart.

Location: The 2607-EK septic system is located east of Baltimore Avenue, northeast of the 2750-E building, and south of the 2607-E8 Septic System.

Process Description: The 2607-EK Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 2750-E Building.

Related Sites/ Structures: The 2607-EK Septic Tank is associated with the 2750-E Building.

Waste Type: Sanitary Sewage

Waste Description: The 2607-EK septic system received sanitary sewer effluent from the 2750-E Building at an estimated rate of 39.2 cubic meters (1,384 cubic feet) per day.

Closure Info: The 2607-EK system was abandoned in 1997 in accordance with Washington Administrative Code 246-272-18501.

Code: 2607-EL

Classification: Accepted

Names: 2607-EL; 2607-EL Septic Tank/Pump Station **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The site is surrounded with steel posts and chain. It is marked with Septic Tank signs. Three access ports are visible on the surface. This septic tank/pump station is a part of the 2607-EP System which was reconstructed in 1994. 2607-EL is permitted and approved by the Washington Department of Health for a flow of 54,890 liters per day.

Location: The site is located south of 4th Street, near the western entrance to 200 East Area. The septic system is located south of 2727-E and west of MO-294.

Process Description: The unit receives sanitary sewage from MO-286 and MO-294.

Waste Type: Sanitary Sewage

Waste Description: The waste is human sanitary sewage.

Code: 2607-EM **Classification:** Accepted

Names: 2607-EM **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1984

Status: Active **End Date:**

Description: The site consists of the 2607-EM Septic Tank and pump station. The system is connected to the 2607-EP dosing chamber, which is connected to the 2607-EP Drainfield (soil absorption system).

Location: This unit lies northwest of the associated drain field and southeast of the 2721-E Building.

Process Description: The 2607-EM Septic Tank and associated drain field receive sanitary sewer effluent from the 2721-E Building. The tank is constructed of reinforced concrete and receives sanitary wastewater and sewage from the 2721-E Building.

Related Sites/ Structures: The 2607-EM Septic Tank is associated with the 2721-E Building.

Waste Type: Sanitary Sewage

Waste Description: The 2607-EM septic system receives sanitary sewer effluent from the 2721-E Building at an estimated rate of 217 cubic feet (6.14 cubic meters) per day.

Code: 2607-EP **Classification:** Accepted

Names: 2607-EP; 2607-EP Septic System **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1984

Status: Active **End Date:**

Description: The 2607-EP Septic System includes a septic tank and associated drainfield.

Location: This unit is located inside 200 East Area, south of 4th Street. It lies southeast of the MO-388 and northeast of the 2721-E Building.

Process Description: The 2607-EP Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the 2607-EM, the 2607-EN, and the 2607-EO systems, as well as the 2721-EA

building and the MO-388.

Related Sites/ Structures: The 2607-EP Septic Tank is associated with systems 2607-EM, 2607-EN, and 2607-EO. Prior to 1994, this system (consisting of two underground tanks) received sanitary sewage effluent from the 2721-EA Building and the MO-388.

Waste Type: Sanitary Sewage

Waste Description: The 2607-EP system receives effluent from the 2721-EA Building and MO-388 at an estimated rate of 28.30 cubic feet (0.80 cubic meters) per day.

Code: 2607-EQ

Classification: Accepted

Names: 2607-EQ

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1985

Status: Active

End Date:

Description: The 2607-EQ Septic Tank is constructed of reinforced concrete. The associated drainfield is approximately 4,644 square feet (431 square meters).

Location: This unit lies northwest of the 2753-E Building and southeast of the Ames Avenue and Second Street intersection.

Process Description: The 2607-EQ Septic Tank and associated drain field are designed to accept sanitary sewer effluent from connected facilities (2571-E, 2752-E, 2753-E, MO-276, MO-277 and MO-285)

Related Sites/ Structures: The 2607-EQ Septic Tank is associated with the 2751-E, the 2752-E, and the 2753-E Buildings, as well as the MO-276, the MO-277 and the MO-285.

Waste Type: Sanitary Sewage

Waste Description: The 2607-EQ septic system receives sanitary sewage effluent at an estimated rate of 477 cubic feet (13.5 cubic meters) per day in 1987.

Code: 2607-ER

Classification: Accepted

Names: 2607-ER

Reclassification: Closed Out (5/31/2001)

Type: Septic Tank

Start Date: 1/1/1980

Status: Inactive

End Date: 1/1/1997

Description: The 2607-ER system includes a septic tank and a trench type drain field. The tank has two access ports. As of February 20, 2001, it was not posted in the field.

Location: The site is located north of the 2101-M Building and west of Baltimore Avenue, just south of the railroad tracks.

Process Description: The 2607-ER Septic Tank and associated drain field were designed to accept sanitary sewer effluent from connected facilities (MO-047, the MO-251, the MO-252, and the MO-253).

Related Sites/ Structures: The 2607-ER Septic Tank is associated with the MO-047, the MO-251, the MO-252, and the MO-253.

Waste Type: Sanitary Sewage

Waste Description: The 2607-ER septic system received sanitary sewage effluent from the MO-047, the MO-251, the MO-252, and the MO-253 at an estimated rate of 5,753 liters (1,520 gallons) per day.

Closure Info: 272-18501. The facilities were connected to a new regional system designated 2607-E8A.

Code: 2703-E HWSA **Classification:** Accepted
Names: 2703-E HWSA; 2703-E Hazardous Waste Storage Area **Reclassification:** Rejected (9/6/2000)
Type: Storage Pad (<90 day) **Start Date:** 1/1/1984
Status: Inactive **End Date:** 1/1/1996

Description: The site was a hazardous waste storage area located in a three-sided steel shed. The shed is on a concrete pad. The site is currently in use as an equipment storage area. There is a metal cabinet in the shed that is used to hold non-regulated soiled shop rags for pickup by the laundry services.

Location: The site was located in a steel shed on the east side of 2703-E, north of the compressor building.

Process Description: The 2703-E Hazardous Waste Staging Area was designed to temporarily store liquid hazardous waste before disposal.

Related Sites/ Structures: The 2703-E Hazardous Waste Staging Area was associated with the 2703-E Building.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The 2703-E Hazardous Waste Staging Area typically contained wastes such as alkaline liquids, sodium hydroxide, sodium dichromate containing process solutions, and waste acids. Use of the 90-day waste storage pad was discontinued by November 4, 1996.

Code: 2704-E HWSA **Classification:** Accepted
Names: 2704-E HWSA; 2704-E Hazardous Waste Storage Area **Reclassification:** Rejected (9/14/2000)
Type: Storage Pad (<90 day) **Start Date:** 11/1/1985
Status: Inactive **End Date:** 1/1/1991

Description: The site was an asphalt pad. It is no longer visible. The location is not marked or posted, and the area is now covered with grass.

Location: The 2704-E Hazardous Waste Staging Area was located southwest of the current MO-257 and northeast of the intersection of Atlanta Avenue and Fourth Street. This 2704-E building was located east of the 2711-E Garage, but has been demolished.

Process Description: The 2704-E Hazardous Waste Staging Area was designed to temporarily store hazardous materials before disposal.

Related Sites/ Structures: The 2704-E Hazardous Waste Staging Area was associated with the former 2704-E Building.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Typical liquid wastes contained at the 2704-E Hazardous Waste Staging Area included antifreeze, grease, diesel fuel, and asphalt.

Code: 2718-E-WS-1 **Classification:** Accepted
Names: 2718-E-WS-1; 2718 French Drains **Reclassification:** Rejected (1/25/2000)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site consists of two french drains associated with the 2718-E Building. One of the french drains is not visible in the field. It was used to drain a swamp cooler, according to Hanford drawing H-2-44301. The other french drain is actually a pit used only to drain clean water from the fire sprinkler system at the 2718-E building. It has a metal lid. The inside is dry with a valved pipe in the bottom.

Location: The site is located north of 2718-E Building, inside the 209-E security fence.

Process Description: One is used to drain a swamp cooler, the other drains clean water from the fire sprinkler system at the 2718-E. The fire system is a dry pipe system, needing occasional testing. After testing, the water must be drained. There are no other sinks, drains or other water sources going to these french drains.

Related Sites/ Structures: The site is related to the 2718-E Building.

Waste Type: Water

Waste Description: One french drain receives clean raw water from testing the fire system; the other received water from a swamp cooler when it was drained for the winter.

Code: 2715-EA HWSA

Classification: Accepted

Names: 2715-EA HWSA; 2715-EA Paint Spray Booth Annex; 2715-EA Hazardous Waste Storage Area

Reclassification: Rejected (9/14/2000)

Type: Storage Pad (<90 day)

Start Date: 1/1/1984

Status: Inactive

End Date:

Description: The 2715-EA Hazardous Waste Staging Area is no longer active. All associated wastes have been removed. The area is currently used for storing new drums, excess material, scrap metal for recycling, non-regulated wastes, and flammable materials. The pad was in a shed, which is still standing, with a chain link fence as the front wall. Adjacent to the west side of the shed are two conex boxes and two chain-link fenced areas which are used as additional storage space. During a site visit on April 11, 2000, it was observed that the shed is labeled "No Smoking," "New Drum Storage" and "Danger - Items in this Building Contain Asbestos." The shed corresponds to the mapped location for building 2715-EA but the shed is not labeled with this number nor could any nearby building be located with this number. The shed contains primarily drums and also some packaged material sitting on a pallet. Material sitting on the concrete in front of the shed includes: other new drums, dollies for moving the drums, wooden boxes and metal cabinets. Some of the metal cabinets are marked "Excess." There are two conex boxes just west of the shed. These are marked "Conex 1" and "Conex 2." Conex 2 is closest to the shed. Both conex boxes have vents on the top. The area between the two conex boxes and the area between Conex 2 and the shed are fenced. The area between the two conex boxes is labeled "No Smoking or Open Flame" and "Non-regulated Waste Storage." The area between Conex 2 and the shed is labeled "Empty Drums to be Crushed for Scrap Metal." This second fenced area also contains two yellow metal cabinets marked "Flammable." Deford and Carpenter (1995) reported that one of these fenced areas was labeled with "Hazardous Waste 90-Day Storage" signs.

Location: This site is located northwest of the 275E Building and east of the 2715-ED Building.

Process Description: The 2715-EA Hazardous Waste Staging Area was designed to temporarily store hazardous waste related to the paint shop activities before disposal.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The typical wastes held here were waste paint and thinning solvents.

Code: 241-EW-151 **Classification:** Accepted
Names: 241-EW-151; 241-EW-151 Vent Station; 241-EW-151 Vent Station Catch Tank; Vent Station; 200 Area East-West Vent Station **Reclassification:** None
Type: Catch Tank **Start Date:** 1/1/1955
Status: Inactive **End Date:** 1/1/2005

Description: The vent station is enclosed in a locked, chain link fence. It consists of an underground concrete structure containing a stainless steel tank in a vault with a jumper pit above the tank. The tank has two vent risers that extend above grade and a riser for the unit's leak detection system. At the bottom of the stairwell access is a floor drain that connects to a nearby french drain. Several hazard and radiological warning signs are posted on the fence. There are also two areas, outside the fence, adjacent to the northeast side of the vent station that are posted with Underground Radioactive Material signs.

Location: The site is located south of Route 3, approximately half way between 200 East and West Areas. It is south of the 609-A Fire Station.

Process Description: The 241-EW-151 Vent Station is located at the high point of the cross site transfer line. The encasement slopes approximately 4 percent on each side of the vent station. The encased underground transfer line piping depth varies from 1.5 meters (5 feet) to 4.5 meters (15 feet). The vent station is designed to contain leaks from transfers and drainage from operations within the transfer system. The piping from the vent station drains to the diversion boxes. The vent station has a jumper pit to facilitate transfer of mixed waste between 200 East and 200 West Areas. The catch tank is part of the 241-EW-151 Vent Station. The catch tank vault used to drain to a nearby french drain, but that line has been isolated. The vent station stairwell floor drain still connects to the french drain. The catch tank has a capacity of 3,030 liters (800 gallons). It is 1.4 meters (4.5 feet) in diameter and 2.1 meters (7 feet) tall. Each of the cross site pipelines has a one inch stainless steel vent line connected to the 800 gallon vent station catch tank. A manually operated valve in each vent line allows for air bleeding, pressure checking and a siphon break on the drain back line. The 241-EW-151 Vent Station drains to a sump with a leak detection alarm that signals in the fire station building.

Related Sites/Structures: This site is part of the cross-site waste transfer system and is associated with UPR-600-20, Diversion Boxes 241-UX-154 (200 West) and 241-ER-151 (200 East). The vent station is associated with the cross-site transfer line that runs between Diversion Boxes 241-UX-154 (200 West) and 241-ER-151 (200 East).

Waste Type: Process Effluent
Waste Description: The vent station transports waste solutions from processing and decontamination operations via the cross-site waste transfer system.

Code: 2607-FSN **Classification:** Accepted
Names: 2607-FSN; 609A Building Septic Tank 2607-FSN; 6607-04; 6607-4 **Reclassification:** Closed Out (11/9/2004)
Type: Septic Tank **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1988

Description: The 2607-FSN Septic Tank and drainfield lie beneath an asphalt walkway and several trees.

Location: The 2607-FSN septic system was located at the southeast corner of the 609-A Building (200 Area Fire Station), which is located on the south side of Route 3 in the 600 Area.

Process Description: The 2607-FSN Septic Tank system received sanitary wastewater and sewage from the 609-A Building and disposed of it through a sub-surface soil absorption system.

Related Sites/ Structures: The 2607-FSN system was associated with the 609-A Building.

Waste Type: Sanitary Sewage

Waste Description: The 2607-FSN septic system received sanitary wastewater at a rate of approximately 1,250 gallons (4,731 liters) per week.

Closure Info: The system was abandoned and replaced by the 6607-4 septic system in 1988. It also is tied into the 2607-EP tank.

Code: 2607-GF **Classification:** Accepted

Names: 2607-GF; 2607-GF Septic System; 2607-GF Septic Tank and Drain Field **Reclassification:** Rejected (5/31/2001)

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: WIDS site 2607-GF was described in Cramer (1987) as a septic tank and associated drain field. However, it likely does not exist.

Location: This system has been described as being located north of the Dry Materials Receiving and Handling Facility (2400E) and across the railroad tracks that run on the north side of the facility.

Waste Type: Sanitary Sewage

Waste Description: According to the Hanford Site Waste Management Units Report (Cramer, 1987), the 2607-GF Septic System is not currently in use. This unit received sanitary sewage effluent from the Dry Materials Receiving and Handling Facility.

Code: 2101-M POND **Classification:** Accepted

Names: 2101-M Pond; 2101-M POND **Reclassification:** Closed Out (10/26/1995)

Type: Pond **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1995

Description: The site is an unlined "U" shaped ditch. It is surrounded with post and chain. Many tumbleweeds have collected in this area.

Location: The pond was located west of the 2101-M Building.

Process Description: The pond became active in 1953 to receive swamp cooler water from the 2101-M air conditioning system, storm water run off and steam traps. In 1983, the Basalt Waste Isolation Project added some laboratories to the 2101-M building. The laboratory sinks also drained to the 2101-M Pond, until 1985. In July 1985, administrative controls were implemented to prevent the discharge of regulated waste to the 2101-M Pond.

Related Sites/ The site is associated with the 2101-M building effluent discharges.

Structures:**Waste Type:** Water**Waste Description:** From 1953 until 1983, the pond received small volumes of swamp-cooler condensate, overflow drain wastewater from the 2101-M air conditioning system, steam trap condensate and storm water runoff. From 1983 to July 1984, laboratory wastes such as barium chloride solutions, nitric acid and hydrochloric acid were discharged to the unit. Quantities are estimated at less than 1900 liters per year (500 gallons per year). Nitric acid and hydrochloric acid discharge quantities are estimated at 1 to 10 kilograms per year (2.2 to 22 pounds per year).**Closure Info:** The site has been sampled and analyzed for hazardous components. It unit was clean closed in accordance with the Washington Administrative Code (WAC) closure performance standards. The letter of acceptance from Ecology was received 10/30/1995.

Code: 212-N**Classification:** Accepted**Names:** 212-N; 212-N Building; 212-N Fissile Storage Facility; Metal and Fuel Storage Basin Facility**Reclassification:** Rejected (5/18/2010)**Type:** Storage**Start Date:** 1/1/1945**Status:** Inactive**End Date:** 1/1/1952**Description:** The building is composed of high bay, a fuel storage basin and a heater room. Each section has a concrete slab and roof and walls constructed of concrete and concrete block. Exterior dimensions of the high bay section is 8.2 by 23 by 9 meters (27 by 74 by 30 feet) high. The fuel storage basin section is 15 by 22 by 3.7 meters (49 by 72 by 12 feet) high. The heater room is 4.3 by 7.9 by 3.7 meters (14 by 26 by 12 feet) high. The total area is 555 square meters (5,970 square feet), the storage basin is 307 square meters (3,300 square feet), and the transfer basin is 37 square meters (400 square feet).**Location:** The site is located north of Route 11A, halfway between the 200 East and 200 West Areas.**Process Description:** From 1945 to 1952, the facility was used to provide underwater storage of irradiated slugs from the 100 Areas. Slugs were stored in the 6.1-meter (20-feet) reinforced concrete basins. In 1970, twenty four boxes of transuranic (TRU) contaminated laboratory hoods and equipment from the 300 Area Plutonium Recycle Test Reactor (PRTR) were placed in the facility for storage.**Related Sites/ Structures:** The building is associated with pipeline 600-285-PL, 216-N-1, 216-N-2 and 216-N-3.**Waste Type:** Equipment**Waste Description:** From 1944 to 1952, the facility was used to provide underwater storage of irradiated slugs from the 100 Areas. Slugs were stored in the 6.1-meter (20-feet) reinforced concrete basins. In 1970, twenty four boxes of transuranic (TRU) contaminated laboratory hoods and equipment from the 300 Area Plutonium Recycle Test Reactor (PRTR) were placed in the facility for storage. There is estimated to be 40 gram (1.4 ounces) of plutonium (byproduct). The total waste volume is 2.7 cubic meters (7,651 cubic feet). The waste was removed in 2006 and 2007.**Closure Info:** The basis for the reclassification of this site has been documented in the Response Action Report (RAR) for 212-N, 212-P, and 212-R Facilities Removal Action, DOE/RL 2010-031. Functions of this removal action as discussed in the Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (RAWP) included utility isolations, characterization sampling, hazardous material removal, decontamination, structure demolition, disposition of waste materials and site stabilization (DOE/RL 2007 55). Removal design included removal of the discrete structural components and removal of the soils up to a depth of 1 m (3.3 ft) beneath the basin and transfer pit of each structure. According to

the RAWP, decontamination and demolition activities were conducted within the footprint of each structure, defined as the area covered by the structure as seen from a plan view, plus an additional 30 m (98 ft) out from the perimeter of the walls. No formal design requirements were applicable to this removal action.

The removal action commenced in accordance with the RAWP in July 2009. Removal actions began on the 212-R and 212-N buildings in July 2009 and for 212-P in October 2009. Demolition and excavation activities were completed in November 2009. Post excavation soil evaluation activities began in October 2009 and concluded in January 2010.

The results of the post demolition soil evaluation also indicated that, without further remediation, residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a conservation mining scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

In accordance with the Sampling and Analysis Plan (DOE/RL-2007-54), focused discrete samples were collected at visually indicated (soil that appeared to be visually darker or a different color than surrounding soil) locations and areas expected to contain higher levels of contamination based on process knowledge. One visually indicated (discoloration at 212-R) and a total of 37 judgmental samples were collected, 11 from 212-N and 13 each from 212-P and 212-R as indicated in Appendix A of the RAR. Detailed analytical data values were provided in Appendix B of the RAR.

Soil sampling data did not contribute to the overall completion of the removal action for the 212-N, 212-P and 212-R facilities. Rather, it addressed the post demolition soil evaluation discussed in the RAWP and SAP by which the soil areas remaining in the locations of the removed structures were investigated against the interim cleanup standards developed for the collocated wastes sites in the 200-CW-3 Operable Unit. The evaluation serves an investigative purpose to determine if further remediation was needed. Results of this evaluation demonstrated that a waste site designation for these areas for further remediation is not applicable.

During the collection of focused soil samples, radiological surveys were performed of the sample matrix. Surveying was performed using standard radiological survey instruments in accordance with accepted protocols and procedures to obtain dose and contamination measurements. No elevated dose rates (dose rates above established area background) were encountered to be further investigated.

Code:	212-P	Classification:	Accepted
Names:	212-P; 212-P Building PCB Storage Facility; 212-P Storage Facility	Reclassification:	Rejected (5/18/2010)
Type:	Storage	Start Date:	1/1/1945
Status:	Inactive	End Date:	
Description:	The building is composed of two main sections (High Bay and low roof sections) and a heater room. Each section has a concrete slab floor and walls constructed of concrete and concrete block. A site visit on November 6, 1998 found that the High Bay section does not have any warning signs or radiological postings. There is a yellow "PCB" sign on the door of the storage room, located on the east side of the facility. The Basin Storage section of the building (northeast portion of the facility) is posted with a Contamination Area sign and a Danger sign. PCB contaminated equipment that was previously stored outside the southwest corner of the facility has been removed.		
Location:	The site is located north of Route 11A, halfway between 200 East and 200 West areas.		
Process	From 1944 to 1952 the facility was used to store irradiated fuel rods prior to chemical		

Description: processing in the 200 Areas. In 1982, the facility began to be used for storage of electrical transformers contaminated with PCB's. Shipments were made from the facility quarterly or as necessary to comply with the TSCA 9-month storage limitation. The High Bay portion of the building was used to store equipment and a 10,000 gallon tank of oil. The oil tank was placed on a "drip pan" secondary containment. A Dyncorp employee reported that the equipment and oil tank stored inside the High Bay has been removed.

Related Sites/ Structures: Associated with pipeline 600-286-PL, 216-N-4 and 216-N-5

Waste Type: Oil

Waste Description: Since 1982, this unit has held PCBs, and PCB-contaminated waste (nonradioactive) in temporary (up to 9 months) storage, according to TSCA (Toxic Substance Control Act). Radioactively contaminated PCBs are stored in another area of this unit. Waste types include 854 kg oil less than 50 p/M PCB; 1,348 kg oil greater than 50 p/M PCB; 703 PCB light ballasts, overpacked; 1,159 kg oil greater than 500 p/M PCB; 7 sealed transformers with less than 30 p/M PCB oil; 1 capacitor with 1% PCB askarel fluid; 11 low-voltage capacitors with greater than 50 p/M PCB oil; 2 electron microscope power supplies with greater than 50 p/M PCB oil; and 42 kg regulated solvents with greater than 500 p/M PCB. Drained items (as allowed under TSCA) are occasionally stored on an asphalt pad at the southwest corner of the building.

Waste Type: Equipment

Waste Description: Originally, the unit was built to provide underwater storage of irradiated slugs from the 100 Areas. Slugs were stored in the 20-ft reinforced concrete basins.

Closure Info: The basis for the reclassification of this site has been documented in the Response Action Report (RAR) for 212-N, 212-P, and 212-R Facilities Removal Action, DOE/RL 2010-031. Functions of this removal action as discussed in the Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (RAWP) included utility isolations, characterization sampling, hazardous material removal, decontamination, structure demolition, disposition of waste materials and site stabilization (DOE/RL 2007 55). Removal design included removal of the discrete structural components and removal of the soils up to a depth of 1 m (3.3 ft) beneath the basin and transfer pit of each structure. According to the RAWP, decontamination and demolition activities were conducted within the footprint of each structure, defined as the area covered by the structure as seen from a plan view, plus an additional 30 m (98 ft) out from the perimeter of the walls. No formal design requirements were applicable to this removal action.

The removal action commenced in accordance with the RAWP in July 2009. Removal actions began on the 212-R and 212-N buildings in July 2009 and for 212-P in October 2009. Demolition and excavation activities were completed in November 2009. Post excavation soil evaluation activities began in October 2009 and concluded in January 2010.

The results of the post demolition soil evaluation also indicated that, without further remediation, residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a conservation mining scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

In accordance with the Sampling and Analysis Plan (DOE/RL-2007-54), focused discrete samples were collected at visually indicated (soil that appeared to be visually darker or a different color than surrounding soil) locations and areas expected to contain higher levels of contamination based on process knowledge. One visually indicated (discoloration at 212-R) and a total of 37 judgmental samples were collected, 11 from 212-N and 13 each from 212-P and 212-R as indicated in Appendix A of the RAR. Detailed analytical data values were provided in Appendix B of the RAR.

Soil sampling data did not contribute to the overall completion of the removal action for the 212-N, 212-P and 212-R facilities. Rather, it addressed the post demolition soil evaluation discussed in the RAWP and SAP by which the soil areas remaining in the locations of the removed structures were investigated against the interim cleanup standards developed for the collocated wastes sites in the 200-CW-3 Operable Unit. The evaluation serves an investigative purpose to determine if further remediation was needed. Results of this evaluation demonstrated that a waste site designation for these areas for further remediation is not applicable.

During the collection of focused soil samples, radiological surveys were performed of the sample matrix. Surveying was performed using standard radiological survey instruments in accordance with accepted protocols and procedures to obtain dose and contamination measurements. No elevated dose rates (dose rates above established area background) were encountered to be further investigated.

Code:	212-R	Classification:	Accepted
Names:	212-R; 212-R Storage Facility	Reclassification:	Rejected (5/18/2010)
Type:	Storage	Start Date:	1/1/1945
Status:	Inactive	End Date:	1/1/1952
Description:	The building is composed of two main sections (the High Bay and the basin storage section) and a heater room. Each section has a concrete slab foundation and roof. The walls are constructed of concrete and concrete block.		
Location:	The site is located north of Route 11A, halfway between the 200 East and 200 West Areas.		
Process Description:	The 212-R Storage Facility was originally built to provide underwater storage of irradiated fuel rods from the 100 Areas. The fuel rods were allowed to decay in water filled basins (20 feet deep) before being sent to the 200 Areas for processing.		
Related Sites/ Structures:	The facility is associated with pipeline 600-287-PL, 216-N-6, 216-N-7, UPR-200-N-1 and UPR-200-N-2.		
Waste Type:	Equipment		
Waste Description:	The building and equipment within it may be contaminated. A 1988 Internal Memo related to the Strontium SemiWorks HEPA Filter 2 stored at 212-R states that the filter contains 9.0 mCi of Sr-90 and 185 uCi of Cs-137.		
Closure Info:	The basis for the reclassification of this site has been documented in the Response Action Report (RAR) for 212-N, 212-P, and 212-R Facilities Removal Action, DOE/RL 2010-031. Functions of this removal action as discussed in the Remedial Design/Remedial Action Work Plan for 200 North Area Waste Sites located in the 200-CW-3 Operable Unit (RAWP) included utility isolations, characterization sampling, hazardous material removal, decontamination, structure demolition, disposition of waste materials and site stabilization (DOE/RL 2007 55). Removal design included removal of the discrete structural components and removal of the soils up to a depth of 1 m (3.3 ft) beneath the basin and transfer pit of each structure. According to the RAWP, decontamination and demolition activities were conducted within the footprint of each structure, defined as the area covered by the structure as seen from a plan view, plus an additional 30 m (98 ft) out from the perimeter of the walls. No formal design requirements were applicable to this removal action.		
	The removal action commenced in accordance with the RAWP in July 2009. Removal actions began on the 212-R and 212-N buildings in July 2009 and for 212-P in October 2009. Demolition and excavation activities were completed in November 2009. Post excavation soil		

evaluation activities began in October 2009 and concluded in January 2010.

The results of the post demolition soil evaluation also indicated that, without further remediation, residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a conservation mining scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

In accordance with the Sampling and Analysis Plan (DOE/RL-2007-54), focused discrete samples were collected at visually indicated (soil that appeared to be visually darker or a different color than surrounding soil) locations and areas expected to contain higher levels of contamination based on process knowledge. One visually indicated (discoloration at 212-R) and a total of 37 judgmental samples were collected, 11 from 212-N and 13 each from 212-P and 212-R as indicated in Appendix A of the RAR. Detailed analytical data values were provided in Appendix B of the RAR.

Soil sampling data did not contribute to the overall completion of the removal action for the 212-N, 212-P and 212-R facilities. Rather, it addressed the post demolition soil evaluation discussed in the RAWP and SAP by which the soil areas remaining in the locations of the removed structures were investigated against the interim cleanup standards developed for the collocated wastes sites in the 200-CW-3 Operable Unit. The evaluation serves an investigative purpose to determine if further remediation was needed. Results of this evaluation demonstrated that a waste site designation for these areas for further remediation is not applicable.

During the collection of focused soil samples, radiological surveys were performed of the sample matrix. Surveying was performed using standard radiological survey instruments in accordance with accepted protocols and procedures to obtain dose and contamination measurements. No elevated dose rates (dose rates above established area background) were encountered to be further investigated.

Code: 203-S & 205-S	Classification: Accepted
Names: 203-S & 205-S; 203-S Uranyl Nitrate Hexahydrate Tank Farm; 204-S; 204-S Tank Farm & Pumphouse; 205-S Process Vault & Chemical Makeup Building; 205-S Stabilized Area; 205-S Uranyl Nitrate Hexahydrate Processing Facility; 203-S	Reclassification: Consolidated (1/19/2005)
Type: Process Unit/Plant	Start Date: 1/1/1953
Status: Inactive	End Date: 1/1/1965
Description: The aboveground tanks and features of these facilities were removed in 1983. The area was backfilled and surface stabilized. The site is currently a posted Underground Radioactive Material area.	
Location: The facilities were located northwest of the 202-S (REDOX) facility.	
Process Description: The 203, and 205-S Facilities were constructed in the early 1950's as a process unit for the decontamination of uranyl nitrate hexahydrate (UNH) produced by Reduction Oxidation (REDOX) operations. The primary process unit consisted of a column filled with silica gel that removed traces of fission products from the UNH. The silica gel column (SG-1) was located in the underground 205-S vault. The vault also contained a waste neutralization tank. Operations in the vault were accomplished remotely. The 205-S facility was a two story, aboveground, chemical make-up building. It contained two chemical make-up tanks, a UNH sample room and extensive piping connected to the REDOX facility and the underground vault. The 203-S facility was an aboveground UNH storage facility that consisted of two 19,000 liter (5,000	

gallon) stainless steel tanks that were set in an open concrete basin. There was also a 204-S Tank Farm, that consisted of four 190,000 liter (50,000 gallon) aboveground tanks set in two open concrete basins. A UNH Unloading Facility was located at the adjacent railroad siding. An aboveground UNH pipeline connected the 203-S, 204-S, 205-S Area to the 224-U (UO3 Plant). During the REDOX Plant operation, the UNH solution was pumped from REDOX to the 205-S silica gel column for purification. The purified UNH was stored in the 203 and 204 tanks and the routed to 224-U, via an above ground line, for final processing. The fission products left in the silica gel column were stripped out with nitric acid. The acid was neutralized and send to cribs. UNH from the PUREX Plant were transported by truck to the unloading station and placed in the 204-S tanks. The PUREX solutions were then processed through the silica gel column. After REDOX shut down (1965), the 203-S and 205-S were placed on standby. The Unloading Station was converted to a railcar unloading station. The 204-S tanks continued to store material from the Unloading Station. Shipments included thorium nitrate, 100-N Reactor decontamination solutions and 300 Area Laboratory wastes.

Related Sites/ Structures: Structures associated with this site include the remains of the 205-S Chemical Makeup System, the 203-S Secondary Containment, the 205-S Vault, the above ground (dismantled) uranyl nitrate hexahydrate cross site transfer line, underground utilities, the salvaged or decommissioned tanks, and process equipment. It is also associated with 200-W-22 and unplanned releases UPR-200-W-10, UPR-200-W-83, UPR-200-W-86 and UPR-200-123.

Waste Type: Process Effluent

Waste Description: Waste processed and stored in this area included contaminated UNH from REDOX and PUREX, Thorium Nitrate from PUREX, 100-N Reactor decontamination waste and 300 Area Laboratory waste. Radiological contaminants may be present in and around the remaining contaminated structures (cement basins and piping) that were not removed in the 1983 stabilization efforts.

The Site Was Consolidated With:

Code: 200-W-22

Names: 200-W-22; 203-S/204-S/205-S Stabilized Area

Code: 219-S-101

Classification: Accepted

Names: 219-S-101; 219-S-TK-101; TK-101 Crib Waste Receiver; TK-101 Receiver Tank; 219-S

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1951

Status: Active

End Date:

Description: The 219-S-101 Tank is a monitored stainless steel receiver tank resting in a below grade concrete vault at the 219-S Waste Handling Facility.

Location: The tank is located in the north side of Cell A in the 219-S Building. The 219-S Building is located north of the northeast end of the 222-S Building.

Process Description: The 219-S-101 Tank receives liquid mixed waste from the 222-S Laboratory processes. Waste batches from Tank 219-S-101 and 219-S-104 are pumped to Tank 219-S-102, where sodium hydroxide and sodium nitrite are added to treat the waste. Tank 219-S-102 then pumps the waste to the double-shell tank farms.

The 219-S facility was built in the early 1950s as part of the 222-S liquid waste disposal system. 219-S originally consisted of three tanks (tanks 101, 102 and 103), enclosed in an epoxy coated, underground concrete vault. The vault has two cells. Cell A contains tanks 101 and 102. Cell B contains tanks 103 and 104. Tanks 101 and 103 (103 was later replaced with tank 104) collect and store liquid waste from the 222-S laboratory. When enough waste was collected, it is

transferred to tank 102 and sampled, prior to being transferred to the tank farms. Prior to 1989, waste was transferred to the tank farm via underground lines, routed through 202-S. After 1989, the waste was transported to the tank farm via tank trailer trucks.

Related Sites/ Structures: The tank is associated with the other two 219-S Tanks, transfer lines, and the 222-S Laboratory (200-W-69).

Waste Type: Process Effluent

Waste Description: The unit receives liquid mixed waste from the 222-S Analytical Laboratory processes. The waste is transferred to Tank 219-S-TK-102 for treatment with sodium hydroxide and sodium nitrate.

Code: 219-S-102 **Classification:** Accepted

Names: 219-S-102; 219-S-TK-102; 219-S Primary Treatment Tank TK-102; 219-S Storage Tank 102 **Reclassification:** None

Type: Neutralization Tank **Start Date:** 6/1/1951

Status: Active **End Date:**

Description: The 219-S-102 Tank is a monitored stainless steel treatment and transfer tank resting in a below grade concrete vault at the 219-S Waste Handling Facility.

Location: The tank is located in a below grade concrete vault in the south side of Cell A in the 219-S Building. The 219-S Building is located north of the northeast end of the 222-S Building.

Process Description: The 219-S facility was built in the early 1950s as part of the 222-S liquid waste disposal system. 219-S originally consisted of three tanks (tanks 101, 102 and 103), enclosed in an epoxy coated, underground concrete vault. The vault has two cells. Cell A contains tanks 101 and 102. Cell B contains tanks 103 and 104. Tanks 101 and 103 (103 was later replaced with tank 104) collect and store liquid waste from the 222-S laboratory. When enough waste was collected, it is transferred to tank 102 and sampled, prior to being transferred to the tank farms. Prior to 1989, waste was transferred to the tank farm via underground lines, routed through 202-S. After 1989, the waste was transported to the tank farm via tank trailer trucks.

Waste batches from tanks 219-S-101 and 219-S-104 are pumped to tank 219-S-102, where sodium hydroxide and sodium nitrite are added to treat the waste. Tank 219-S-102 then pumps the waste to the double-shell tank farms.

Related Sites/ Structures: The tank is associated with the other two 219-S Tanks, transfer lines, the double-shell tank farms, and the 222-S Laboratory (200-W-69).

Waste Type: Process Effluent

Waste Description: The unit receives high activity mixed waste from the 222-S Laboratory processes. The waste is normally transferred from Tanks 101 and 104 for treatment. The waste is treated with sodium hydroxide to a pH greater than 12 and sodium nitrite to a concentration greater than 600 parts per million.

Code: 219-S-103 **Classification:** Accepted

Names: 219-S-103; 219-S Storage Tank 103 **Reclassification:** None

Type: Storage Tank **Start Date:** 6/1/1951

Status: Inactive **End Date:**

Description: The 219-S-103 Tank is a monitored stainless steel receiver tank resting in a below grade

concrete vault at the 219-S Waste Handling Facility.

- Location:** The tanks are located in a below grade concrete vault in the south side of Cell B in the 219-S Building. The 219-S Building is located north of the northeast end of the 222-S Building.
- Process Description:** The 219-S facility was built in the early 1950s as part of the 222-S liquid waste disposal system. 219-S originally consisted of three tanks (tanks 101, 102 and 103), enclosed in an epoxy coated, underground concrete vault. The vault has two cells. Cell A contains tanks 101 and 102. Cell B contains tanks 103 and 104. Tanks 101 and 103 (103 was later replaced with tank 104) collect and store liquid waste from the 222-S laboratory. When enough waste was collected, it is transferred to tank 102 and sampled, prior to being transferred to the tank farms. Prior to 1989, waste was transferred to the tank farm via underground lines, routed through 202-S. After 1989, the waste was transported to the tank farm via tank trailer trucks.

Tank 103 and its replacement tank 104 began service in 1996. Tank 103 was removed from service, blanked off, and left in place in 1999. They are both monitored stainless steel treatment and transfer tanks resting in a below grade concrete vault at the 219-S Waste Handling Facility. The 219-S-103 Tank used to receive high activity liquid mixed waste from the 222-S Laboratory processes. Waste batches from tanks 219-S-101 and 219-S-103 were pumped to tank 219-S-102, where sodium hydroxide and sodium nitrite were added to treat the waste. Tank 219-S-102 then pumped the waste to the double-shell tank farms. A 3.5 foot diameter (3 foot high) off gas filter is above 219-S-103. Drawing H-2-5234 labels the off gas filter tk-105.

- Related Sites/ Structures:** The tanks are associated with the other two 219-S Tanks, transfer lines, the double-shell tank farms, and the 222-S Laboratory (200-W-69).

- Waste Type:** Process Effluent
- Waste Description:** Tank 104 receives liquid mixed waste from the 222-S Analytical Laboratory processes. The waste is transferred to Tank 219-S-TK-102 for treatment with sodium hydroxide and sodium nitrite. Tank 103 used to receive high activity liquid mixed waste, that was then transferred to Tank 219-S-102 for treatment before being sent to the double-shell tank farms for storage.

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- Code:** 219-S-104 **Classification:** Discovery
- Names:** 219-S-104; 219-S-TK-104; 219-S Storage Tank 104; 219-S-103 Replacement Tank **Reclassification:** None
- Type:** Storage Tank **Start Date:**
- Status:** Active **End Date:**
- Description:** 219-S-104 is the Replacement Tank for the 219-S-103 tank. The 219-S stainless steel tanks are located in a below grade concrete vault under the 219-S Waste Handling Facility building.
- Location:** The tanks are located on the south side of Cell B in the 219-S Building. The 219-S Building is located north of the northeast end of the 222-S Building.
- Process Description:** The 219-S tanks provide storage for hazardous and mixed waste. Tank 104 began service in 1996. Tank 219-S-104 replaced 219-S-103, which was removed from service and isolated. Similar to previous Tank 103 operations, Tank 104 receives liquid mixed waste, also from the 222-S Laboratory processes. Waste batches from tank 219-S-101 and 104 are pumped to tank 219-S-102, where sodium hydroxide and sodium nitrite are added to treat the waste. Tank 219-S-102 then pumps the waste to the double-shell tank farms.
- The 219-S facility was built in the early 1950s as part of the 222-S liquid waste disposal system. 219-S originally consisted of three tanks (tanks 101, 102 and 103), enclosed in an epoxy coated, underground concrete vault. The vault has two cells. Cell A contains tanks 101 and 102. Cell B

contains tanks 103 and 104. Tanks 101 and 103 (103 was later replaced with tank 104) collect and store liquid waste from the 222-S laboratory. When enough waste was collected, it is transferred to tank 102 and sampled, prior to being transferred to the tank farms. Prior to 1989, waste was transferred to the tank farm via underground lines, routed through 202-S. After 1989, the waste was transported to the tank farm via tank trailer trucks.

Code:	233-S	Classification:	Accepted
Names:	233-S; 233-S Plutonium Concentration Facility	Reclassification:	None
Type:	Process Unit/Plant	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1967

Description: This facility was demolished in 2004. The 233-S Plutonium Concentration Facility was an inactive (retired) limited access facility after 1967. The building was a reinforced concrete and structural steel assembly with corrugated steel and concrete walls. The building had eight rooms, an airlock, and a highbay area. These rooms were divided into two zones by a vertical partition of transparent plastic and structural steel. The two zones include a process area and a process viewing area. The above ground building structure was demolished in 2003 and 2004. A concrete cap has been placed over the foundation.

Location: The facility was located at the northwest side of 202-S Building.

Process Description: From 1978 to 1980 the facility was used as a demonstration project for decommissioning of contaminated facilities. Between 1963 and 1967 the facility was used to concentrate neptunium and plutonium nitrate solutions from REDOX. Prior to 1963 the facility provided the final purification and concentration of plutonium solutions using ion exchange technologies.

Related Sites/ Structures: Structures associated with the facility include process equipment, the 202-S Building, the 233-SA Building, UPR-200-W-57 and UPR-200-W-43.

Waste Type: Chemicals
Waste Description: Chemical and radiological contaminants may still be present as residual materials in building systems.

Waste Type: Equipment
Waste Description: Process equipment, systems, and building surfaces may have fixed and removable contamination as a result of processing and UPR-200-W-57.

Waste Type: Asbestos (non-friable)
Waste Description: Piping insulation, wire insulation, and ventilation components may be insulated with asbestos containing materials. Transite is used on certain building components.

Code:	241-S-302B	Classification:	Accepted
Names:	241-S-302B; 241-S-302-B Catch Tank; IMUST; Inactive Miscellaneous Underground Storage Tank	Reclassification:	None
Type:	Catch Tank	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1985

Description: This unit is a horizontal, cylindrical steel tank. Tank 241-S-302B is underground to provide radiation shielding protection. The tank is surrounded with posts and chain and labeled with IMUST signs.

Location: The 241-S-302B Catch Tank is located east of tank 241-S-101, south of tank 241-SY-102 and southwest of tank 241-SY-103, inside the tank farm fence.

Related Sites/ Structures: The 241-S Tank Farm and 241-S-151 Diversion Box are associated with this unit.

Waste Type: Storage Tank

Waste Description: This unit was used for transfer of waste solutions from processing and decontamination operations. Volumes were variable according to specific plant operations.

Code: 242-S

Classification: Accepted

Names: 242-S; 242-S Evaporator

Reclassification: None

Type: Evaporator

Start Date: 1/1/1973

Status: Inactive

End Date: 1/1/1985

Description: The 242-S Evaporator is an inactive waste management unit. The principal operating areas of the evaporator include two adjoining, but structurally independent sections. Structure A, the processing and service area, is constructed of reinforced concrete shear walls and slab floors. Structure B of the building houses operating and support areas and is constructed of concrete block walls and structural steel.

Location: The site is located directly north of Tank 241-S-103 and lies outside the 241-S Tank Farm.

Process Description: The evaporation process reduced the volume of radioactive liquid by removing the water. The cooled vapor formed saltcake and residual liquor. This facility is currently in Condition III Standby, and the "B" Structure is used as a shift office for Tank Farms Operations Personnel. The "242-S Facility Shutdown/Standby Plan" provides a list of isolation work accomplished including pipelines that were blanked and equipment removed. Prior to 1980, the system was used to reduce the volume of radioactive liquid waste by evaporating water from the feed solution to produce a concentrated saltcake solution. The process condensate was sent back to the tanks. In 1985, a portion of the facility was used to process contaminated groundwater from the 216-U-1 and 216-U-2 crib area via the ion exchange column.

Related Sites/ Structures: The structures associated with this facility include tanks 242-S-TK-C-100 and 242-S-TK-1, the 241-S Tank Farm, the 216-U-14 Ditch, the 216-S-25 crib, pipeline 200-W-161-PL, the HVAC Pad south of the building, and internal process equipment.

Waste Type: Chemicals

Waste Description: The unit received liquid radioactive mixed waste from the single-shell tanks through 1980. The evaporation process reduced the volume of radioactive liquid by removing the water. The cooled vapor formed saltcake and residual liquor.

Code: 276-S

Classification: Accepted

Names: 276-S; 276-S Solvent Facility; 276-S Solvent Handling Facility

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1967

Description: The 276-S Building is a concrete and steel building, with transite siding on the portions of the building constructed of steel frame. The floor of the building is below grade, making up the processing area. Tanks and pumps make up most of the process equipment in the building.

Location: The building is located north of the 211-S Tanks and south of the 276-S-141 and 276-S-142

Hexone Tanks.

Process Description: The 276-S Facility provided for the storage and treatment of REDOX process solvent (methyl isobutyl ketone).

Related Sites/ Structures: Structures associated with the site include several tanks and pumps inside the building, solvent transfer lines, the 211-S Tank Farm, and the 276-S-141 and -142 Solvent Storage Tanks.

Waste Type: Chemicals

Waste Description: This unit contains contaminated surfaces inside pumps, pits, and tanks. No inventory has been determined. Hexone contamination may also be present in building systems.

The Following Sites Were Consolidated With This Site:

Code: 296-S-12

Names: 296-S-12; 296-S-12 Stacks

Code: 291-S **Classification:** Not Accepted (Proposed)

Names: 291-S; 291-S Fan and Filter Building; 291-S Fan Control Building; 291-S Fan House **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1952

Status: Active **End Date:**

Description: The fan house is an above ground concrete structure with outside dimensions of 4.2 meters by 6 meters (14 feet by 20 feet) and contains the blowers for the REDOX main ventilation system.

Location: The fan house is located adjacent to and southeast of the 291-S Stack.

Release Description: UPR-200-W-87.

Related Sites/ Structures: The 291-S Stack and sand filter are associated with the unit.

Waste Type: Equipment

Waste Description: The unit received exhaust air from the 202-S Process Building. The fans have very low levels of radiological contamination.

Code: 291-S-1 **Classification:** Not Accepted (Proposed)

Names: 291-S-1; 291-S-1 Stack; REDOX Process and Canyon Exhaust **Reclassification:** None

Type: Stack **Start Date:** 1/1/1952

Status: Active **End Date:**

Description: The unit is a double-shell structure. The outer shell is made of reinforced concrete and the inner shell is constructed of acid-resistant brick and mortar.

Location: The stack is located northeast of the 202-S Building.

Release Description: During the operation of the REDOX Facility, multiple stack emissions occurred causing areas of surface contamination. Most of the emissions consisted of short lived radionuclides.

Related Sites/ Structures: The sand filter and fan house are associated with the unit.

Waste Type: Process Effluent

waste type: PROCESS EFFLUENT**Waste Description:** The stack exhausts filtered air from the 202-S Process Building.

Code: 292-S	Classification: Accepted
Names: 292-S; 292-S Fan and Filter Building	Reclassification: None
Type: Process Unit/Plant	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1967

Description: The unit is a concrete building, 3.4 meters (11 feet) high. Most of the concrete is 25.4 centimeters (10 inches) thick. An exhaust jet is located beneath the unit. The structure contains a 1.5-meter (5-foot) diameter by 2.3-meter (7.5-foot) high tank, 305 meters (1,000 feet) of 5.1-centimeter (2-inch) diameter tubing, and 91.5 meters (300 feet) of larger pipe up to 15.2 centimeters (6 inches) in diameter.

Location: The site is east of the 202-S Building.

Waste Type: Process Effluent

Waste Description: The unit contains radioactively contaminated surfaces on tanks, piping, and concrete (preliminary estimate is 4 curies beta).

Code: 293-S	Classification: Accepted
Names: 293-S; 293-S Off Gas Treatment; 293-S Off-Gas Treatment and Recovery; 293-S Offgas Treatment Facility	Reclassification: None
Type: Process Unit/Plant	Start Date: 1/1/1958
Status: Inactive	End Date: 1/1/1967

Description: The building extends 3.7 meters (12 feet) below grade to 9 meters (30 feet) above grade and is constructed of reinforced concrete. The main floor houses the absorption towers with a pipe valve pit in the basement. A corrugated metal lean-to, 2.6 meters (8.5 feet) by 8.5 meters (28 feet), is attached to the south wall. It houses the control room and Special Work Permit (SWP) with its concrete basement housing control piping. Underground acid storage, 4.3 meters (14 feet) by 4.0 meters (13 feet), is provided adjacent to the main building's west side. Also, ventilation supply equipment is present above ground adjacent to the south end of the lean-to structure.

Location: The site is located east of the 202-S Building.

Waste Type: Process Effluent

Waste Description: This unit and structure are radioactively contaminated.

Code: 296-S-1	Classification: Accepted
Names: 296-S-1; 296-S-1 Stack	Reclassification: Consolidated (11/10/2004)
Type: Stack	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1976

Description: The unit is constructed of metal, and it extends from grade level to 1.8 meters (6 feet) above the roof.

Location: The stack is attached to the outside south wall of the service portion of the south pipe gallery of

202-S.

Related Sites/ Structures: The stack is associated with the 202-S facility.

Waste Type: Process Effluent

Waste Description: The unit contains surface radioactive contamination, exact amount unknown (1,000 counts/minute beta/gamma direct). The unit discharged filtered air from the south sample gallery and sample hoods of 202-S.

The Site Was Consolidated With:

Code: 202-S

Names: 202-S; 202-S REDOX; S Plant

Code: 296-S-2

Classification: Accepted

Names: 296-S-2; 296-S-2 Stack; Hoods Ventilation and PR Cage; REDOX North Sample Gallery

Reclassification: Consolidated (11/10/2004)

Type: Stack

Start Date:

Status: Inactive

End Date:

Description: The unit is constructed of metal and extends from the sample gallery level to above the roof. The fan and motor are in place. The fan and base are on a contaminated surface.

Location: The stack is located on the outside north wall of the 202-S Building.

Process Description: This stack was constructed to exhaust filtered air from REDOX north and south sample galleries and hoods.

Related Sites/ Structures: The stack is associated with the 202-S building.

Waste Type: Process Effluent

Waste Description: The unit contains an unknown amount of surface radioactive contamination. The unit discharged filtered air from the north sample gallery and sample hoods of 202-S.

The Site Was Consolidated With:

Code: 202-S

Names: 202-S; 202-S REDOX; S Plant

Code: 296-S-4

Classification: Accepted

Names: 296-S-4; Low-Level Decontamination Sink and Special Work Permit Lobby Vent; REDOX Decontamination Room; Regulated Shop; Regulated Tool Room

Reclassification: Consolidated (11/10/2004)

Type: Stack

Start Date:

Status: Inactive

End Date:

Description: The unit is constructed of metal, and extends from grade level to 1.8 meters (6 feet) above the roof. The fan and motor are in place. The fan and stack base are in a surface contaminated area.

Location: The stack is located on the east outside wall of the 202-S building.

Process Description: The unit discharged filtered air from the decontamination room and regulated shop and unfiltered air from the regulated tool room low-level decontamination sink and Special Work

Permit (SWP) lobby.

Related Sites/ Structures: The stack is associated with the 202-S building.

Waste Type: Process Effluent

Waste Description: The unit contains trace amounts of surface radioactive contamination. The unit discharged filtered air from the decontamination room and regulated shop and unfiltered air from the regulated tool room low-level decontamination sink and Special Work Permit (SWP) lobby.

The Site Was Consolidated With:

Code: 202-S

Names: 202-S; 202-S REDOX; S Plant

Code: 296-S-6

Classification: Accepted

Names: 296-S-6; 296-S-6 Stack; REDOX Silo Ventilation

Reclassification: Consolidated (11/10/2004)

Type: Stack

Start Date:

Status: Inactive

End Date:

Description: The unit is constructed of metal, and it extends from the fan base in the feed tank area to 3.5 meters (11.5 feet) above the roof.

Location: The stack is located on the roof in the northeast corner of 202-S.

Process Description: 296-S-6 was built to discharge unfiltered air from the silo gallery, organic feed tank and sample elevator.

Waste Type: Process Effluent

Waste Description: The unit contains trace amounts of surface radioactive contamination. The unit discharged unfiltered air from the silo gallery, organic feed tank, and sample elevator.

The Site Was Consolidated With:

Code: 202-S

Names: 202-S; 202-S REDOX; S Plant

Code: 296-S-7

Classification: Not Accepted (Proposed)

Names: 296-S-7; 296-S-7 East and West Stacks; 296-S-7E; 296-S-7W; Dual Stacks; REDOX Product Building (233-S) Ventilation

Reclassification: None

Type: Stack

Start Date:

Status: Inactive

End Date:

Description: The waste site consisted of two stacks, constructed of metal, extending from the fan base to above roof level. The units included a six meter (20 feet) intake duct and two electric drive fans. The systems were operated one at a time and were alternated weekly.

Location: The stacks were located on the outside north wall of the 233-SA building.

Process Description: The stacks were constructed to exhaust filtered air from the 233-S Building, the REDOX plutonium processing greenhouse, the process vessel ventilation and load out area.

Related Sites/ The stacks are associated with the 233-SA building.

Structures:

Waste Type: Process Effluent

Waste Description: The stacks contained an unknown amount of radioactive contamination. The units discharged air from 233-S.

Code: 296-S-12

Classification: Accepted

Names: 296-S-12; 296-S-12 Stacks

Reclassification: Consolidated (11/10/2004)

Type: Stack

Start Date:

Status: Inactive

End Date:

Description: There are two units, each 53 centimeters (21 inches) square and 3.2 meters (10.5 feet) high

Location: The stacks are located on the roof of the 276-S Building, over the operating gallery.

Related Sites/Structures: The stacks are associated with the 276-S building.

Waste Type: Process Effluent

Waste Description: The units received exhaust air from the 276-S Operating Gallery.

Description:

The Site Was Consolidated With:

Code: 276-S

Names: 276-S; 276-S Solvent Facility; 276-S Solvent Handling Facility

Code: 296-S-13

Classification: Accepted

Names: 296-S-13; 222-S Stack

Reclassification: None

Type: Stack

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1978

Description: The stack originates on the second floor of 222-S and is approximately 2 meters (7 feet) in diameter by 16 meters (52 feet) tall.

Location: The stack is located in the southeast corner of the 222-S roof.

Waste Type: Process Effluent

Waste

Description:

Code: 296-S-16

Classification: Accepted

Names: 296-S-16; 219-S Stack

Reclassification: None

Type: Stack

Start Date: 1/1/1951

Status: Active

End Date:

Description: The stack is approximately 10 centimeters (4 inches) in diameter by 2.7 meters (7 feet) high.

Location: This stack is located on the west side of the 219-S Waste Handling Facility.

Process Description: Air is exhausted from the 219-S waste tanks through a de-mister (TK-105) and a single stage of High-Efficiency Particulate Air (HEPA) filtration prior to discharge through the stack to the atmosphere.

Waste Type: Process Effluent
Waste Description:

Code: 296-S-21 **Classification:** Accepted
Names: 296-S-21; 222-S Stack **Reclassification:** None
Type: Stack **Start Date:** 1/1/1978
Status: Active **End Date:**

Description: The stack is approximately 2 meters (6.5 feet) in diameter by 11.6 meters (38 feet) tall.
Location: The site is located on the southeast corner of the 222-S Laboratory.
Process Description: Air is exhausted from the 222-S Laboratory rooms, hoods, gloveboxes, and hot cells through the 222-SB or 222-SE Filter Buildings prior to discharge through the stack to the atmosphere.

Waste Type: Process Effluent
Waste Description:

Code: 2711-S **Classification:** Accepted
Names: 2711-S; 2711-S Stack Monitoring Building **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1959
Status: Inactive **End Date:**

Description: The 2711-S Building is an isolated, inactive wooden structure. The structure is old and of questionable integrity.
Location: The building is adjacent to the 291-S Air Sampler and the 291-S-1 Stack.
Process Description: The building is currently used for equipment and lead shielding storage. The building contains a motor, pump, and instrumentation for the 291-S-1 Stack Sampling Building, and supports stack monitoring activities.

Related Sites/Structures: The structures associated with this unit include the 291-S-1 Stack, the Gas Monitoring Building, and the 202-S Ventilation System.

Waste Type: Equipment
Waste Description: The building may store lead shielding. According to WHC-SP-0331, Revision 1, this lead was scheduled for removal.

Waste Type: Equipment
Waste Description: The building stores office furniture and performance monitoring equipment which may be radiologically contaminated.

Code: 2718-S **Classification:** Accepted
Names: 2718-S; 2718-S Filter Monitoring Building; 2718-S Sand Filter Monitor; 2718-S Sand Filter Sampler **Reclassification:** None

Waste Type: Demolition and Inert Waste
Waste Description: Piles of dirt and asphalt rubble that appear to be left over from cleanup operations still remain at the site.

Closure Info: In order to minimize closure costs related extensive sampling, it was decided to dispose of the structures and the first 15 centimeters (6 inches) of soil immediately beneath the structures as WT02, Washington State dangerous waste. Closure verification sampling consisted of sampling substructure soils that would remain after demolition and after the planned soil removal. Sampling was performed prior to site demolition to prevent disturbing the underlying soil. Samples B07531 through B07562 were taken in support of closure activities. A sketch showing sampling locations and tables showing sample results are available in WHC-SD-EN-TI-242, Rev. 0B.

Demolition of the metal building and concrete storage pad began immediately upon the completion of sampling. The bulk of the demolition waste was taken to an offsite RCRA landfill in September 1992.

Code: 233-SA **Classification:** Not Accepted (Proposed)
Names: 233-SA; 233-SA Exhaust Filter Building **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1967
Status: Active **End Date:**

Description: The 233-SA Exhaust Filter Building was a one-story reinforced concrete structure. The building housed two banks of double high-efficiency particulate air (HEPA) filters. Each filter bank has its own exhaust fan, stack, and monitoring instrumentation. The building has been demolished. The foundation has been capped with concrete.

Location: The 233-SA Building was located at the northwest corner of 233-S.

Process Description: The building handled the ventilation for the 233-S Facility.

Related Sites/ Structures: Structures associated with this system include the exhaust system, the 233 Building and process equipment.

Waste Type: Chemicals
Waste Description: The system contained process equipment contaminated with plutonium and americium derived from 233-S Building operations.

Code: 2904-SA **Classification:** Accepted
Names: 2904-SA; 2904-SA Cooling Water Sampler Building; 2904-SA Sample Building **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1956
Status: Inactive **End Date:** 1/1/1976

Description: The 2904-SA Sample Building is a prefabricated metal structure resting on a concrete foundation. It is located over the southern portion of the 2904-S-170 Control Structure. Process equipment within the building includes a pump, a stainless steel tank (below grade), and a sample riser that extends through the floor of the building. The exterior of the building is posted with Contamination Area and Danger-Restricted Access signs.

Location: The building is located southwest of the 202-S canyon facility, near the southwest corner of the 211-S tank farm.

Process Description: The sample shack was built to provide sampling of process waste from the REDOX facility.

Process Description: prior to being routed through the 2904-S-170 Weir to liquid waste disposal sites. The building extends 0.97 meters (3 foot 2 inches) over the south end of the 2904-S-170 Weir.

Related Sites/ Structures: The sample building is associated with the 2904-S-170 Weir and the process line connected to the weir.

Waste Type: Process Effluent

Waste Description: This unit contains trace amounts of low-level radioactive surface contamination derived from the process effluents sampled in this building.

Code: 222-SD **Classification:** Accepted

Names: 222-SD; 222 SD; 222-S DMWSA; 222-S TSD **Reclassification:** None
Dangerous and Mixed Waste Storage Area

Type: Storage **Start Date:** 6/1/1979

Status: Active **End Date:**

Description: The 222-S Dangerous Waste and Mixed Waste Storage Area (DMWSA) is a permitted treatment, Storage, and Disposal (TSD) area. It consists of two storage buildings (HS-0082 and HS-0083). The storage buildings are self-contained units with fire suppression and air conditioning, and are equipped with secondary containment. The site also includes portions of the concrete pad, which was previously used for the connex boxes in the DMWSA. The units and pad will be removed at closure under the Part B permit.

Location: The unit is located adjacent to the north of the 222-S Laboratory.

Process Description: The unit provides temporary storage for liquid and solid waste generated by the 222-S Laboratory complex. This waste includes dangerous and mixed waste.

Related Sites/ Structures: Structures associated with this unit include the waste generating facilities in the 222-S Laboratory complex.

Waste Type: Chemicals

Waste Description: Wastes generated from 222-S Analytical and 222-SA Standards Laboratories are stored in the unit. This consists of dangerous and mixed waste.

Code: 241-SY-A **Classification:** Accepted

Names: 241-SY-A; 241-SY-A Diversion Box; 241-SY-A **Reclassification:** None
Valve Pit

Type: Valve Pit **Start Date:** 1/1/1977

Status: Active **End Date:**

Description: The 241-SY-A Valve Pit is fabricated from reinforced concrete. All concrete and ferrous materials are treated with a protective coating. This unit has two cover blocks with valve handles extending through penetrations in the cover blocks.

Location: This unit is located inside the 241-SY Tank Farm south of and between Tanks 241-SY-101 and 241-SY-102.

Process Description: This unit is used to route waste solutions to and from the 241-SY Tank Farm.

Related Sites/ Structures: The 241-SY Tank Farm is associated with this unit. Additional facilities associated with the

241-SY-A Valve Pit include the 244-S, 242-S, and 244-U Facilities.

Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-SY-B **Classification:** Accepted

Names: 241-SY-B; 241-SY-B Diversion Box; 241-SY-B Valve Pit **Reclassification:** None

Type: Valve Pit **Start Date:** 1/1/1977

Status: Active **End Date:**

Description: The 241-SY-B Valve Pit is fabricated from reinforced concrete. All concrete and ferrous materials are treated with a protective coating. This unit has two cover blocks with valve handles extending through penetrations in the cover blocks.

Location: This unit is located inside the 241-SY Tank Farm south of and between Tanks 241-SY-101 and 241-SY-102.

Process Description: This unit is used to route waste solutions to and from the 241-SY Tank Farm.

Related Sites/Structures: The 241-SY Tank Farm is associated with this unit. Additional facilities associated with the 241-SY-B Valve Pit include the 244-S, 242-S, and 244-U Facilities.

Waste Type: Process Effluent
Waste Description: The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operations. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 241-SY-101 **Classification:** Accepted

Names: 241-SY-101; 241-SY-TK-101 **Reclassification:** None

Type: Double-Shell Tank **Start Date:** 1/1/1977

Status: Active **End Date:**

Description: This unit is fabricated as three concentric tanks. The primary tank and secondary tank are made of carbon steel with the secondary tank being larger in diameter than the primary tank. The space between the carbon steel tanks is referred to as the annulus. The third tank is a concrete shell that encloses both the primary and secondary tanks for additional containment, radiation shielding, and structural support. The 241-SY-101 Double Shell Tank is underground to provide shielding from radiation.

Location: The 241-SY-101 Double Shell Tank is located southeast of the 242-S Evaporator and within the 241-SY Tank Farm.

Process Description: This unit is used to store Tank Farms processing and operational waste.

Related Sites/Structures: Structures associated with tank 241-SY-101 include the ventilation system, cover blocks on the access pits, and risers.

Waste Type: Storage Tank
Waste Description: Waste transferred to this unit includes double-shell slurry, and radioactive mixed waste from tanks 241-SY-102, 241-SX-106, and 241-U-111.

Names: 221-T CSTF; 221-T Head End; T Plant Laboratory; 221-T Containment System Test Facility

Reclassification: Closed Out (2/22/1999)

Type: Laboratory

Start Date: 1/1/1964

Status: Inactive

End Date:

Description: The 221-T CSTF consisted of the head end (Section 1) of the 221-T Canyon. In 1964, a sheet metal wall was constructed to separate Section 1 from the rest of the canyon. The head end area consists of one large process cell, a control room, laboratories, a shop, a change room, and a high bay near the cell.

Location: The 221-T CSTF is located at Section 1 of the 221-T Building.

Process Description: Between 1964 and 1990, the 221-T Building head-end housed a series of testing programs. From 1964 to 1969 Pacific Northwest Laboratories used the facility to perform experiments with radioactive cobalt, cesium, and iodine. From 1976 to 1985, Westinghouse Hanford Company used the 221-T CSTF to perform liquid metal reactor safety tests using nonradioactive sodium, lithium, and sodium iodide. From 1985 to 1990 the unit was part of the light water reactor tests which were conducted with nonradioactive cesium, manganese, zinc, lithium sulfate, iodine, and hydrogen iodide. The unit was to be used as a research laboratory intended for use as an alkali metal waste treatment unit. It was anticipated alkali operations were to begin in 1977. The unit was also intended to treat dangerous alkali metal waste by heating the waste in a treatment tank equipped with an offgas system.

Related Sites/Structures: Structures associated with the 221-T CSTF included the containment vessel, tanks, process equipment, laboratories, the 221-T Canyon, the 221-T Canyon and ventilation systems.

Waste Type: Chemicals

Waste Description: Wastes generated at the laboratory were intended to include alkali metal hydroxide, oxides, and carbonates. The maximum process design capacity for tank treatment was intended to be 100 liters (26.4 gallons) per day. The 221-T never managed dangerous waste. Previous use of the facility included experiments with radiological constituents. Residual contamination may be present.

Code: 221-T-5-6

Classification: Accepted

Names: 221-T-5-6; 221-T-TK-5-6; T Plant Complex; Tank 5-6 221-T System

Reclassification: None

Type: Storage Tank

Start Date: 1/1/1944

Status: Active

End Date:

Description: Tank 221-T-5-6 is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank is cylindrical in shape.

Location: The tank is located in cell 5L, in the northern third of the 221-T canyon.

Process Description: Tank 221-T-5-6 provides additional storage for tank 221-T-5-9. Liquid wastes are transferred to the tank for temporary holding from 221-T-5-9. The liquid wastes are eventually transferred back to 221-T-5-9 and subsequently to 221-T-15-1.

Related Sites/Structures: Structures associated with tank 221-T-5-6 include transfer lines, cell 5L equipment, and the other tanks and sumps in the 221-T tank system

Waste Type: Process Effluent

Waste Description: The unit receives liquid mixed waste from T Plant (221-T, 2706-T) decontamination operations.

Description:

Code: 221-T-5-7 **Classification:** Accepted
Names: 221-T-5-7; 221-T-TK-5-7; T Plant Complex;
Tank 5-7 221-T System **Reclassification:** None
Type: Storage Tank **Start Date:** 1/1/1944
Status: Active **End Date:**

Description: Tank 221-T-5-7 is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank is rectangular with a flat bottom.

Location: The tank is located in cell 5R, in the northern third of the 221-T canyon.

Process Description: Tank 221-T-5-7 is the receiving point for liquid waste collected in the 610 millimeter (24 inch) liquid collection line which extends the length of the canyon building and receives drainage from all cells (except 5R) and the railroad tunnel. The tank also receives waste from the 211-T collection sump (by way of tank 221-T-6-1 overflow to the cell 6L drain) and drainage from the decontamination pad over cell 15L. Liquid waste are transferred from 221-T-5-7 to 221-T-5-9 via a steam jet. Sump 221-T-5-8 acts as secondary containment for this tank.

Related Sites/ Structures: Structures associated with tank 221-T-5-7 include transfer lines, cell 5R equipment, and the other tanks and sumps in the 221-T tank system.

Waste Type: Process Effluent

Waste Description: The unit receives liquid mixed waste from T Plant (221-T, 2706-T) decontamination operations.

Code: 221-T-5-9 **Classification:** Accepted
Names: 221-T-5-9; 221-T-TK-5-9; T Plant Complex;
Tank 5-9 221-T System **Reclassification:** None
Type: Storage Tank **Start Date:** 1/1/1944
Status: Active **End Date:**

Description: Tank 221-T-5-9 is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank is cylindrical in shape.

Location: The tank is located in cell 5L, in the northern third of the 221-T canyon.

Process Description: Tank 221-T-5-9 receives waste from tank 221-T-5-6 and occasionally from tank 221-T-5-7. Liquid waste is transferred from 221-T-5-9 to 221-T-15-1 via steam jet.

Related Sites/ Structures: Structures associated with tank 221-T-5-9 include transfer lines, cell 5L equipment, and the other tanks and sumps in the 221-T tank system

Waste Type: Process Effluent

Waste Description: The unit receives liquid mixed waste from T Plant (221-T, 2706-T) decontamination operations.

Code: 221-T-6-1 **Classification:** Accepted
Names: 221-T-6-1; 221-T-TK-6-1; T Plant Complex;
Tank 6-1 221-T System **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1944
Status: Active **End Date:**

Description: Tank 221-T-6-1 is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank is over shaped and is partially enclosed

Location: The tank is located in cell 6L, in the northern third of the 221-T canyon.

Process Description: Tank 221-T-6-1 receives waste transferred from the 211-T collection sump. The tank overflows into containment sump 6-L (cell 6L) and gravity drains to tank 221-T-5-7 via the 221-T Building's common 610 millimeter (24 inch) liquid collection line

Related Sites/ Structures: Structures associated with tank 221-T-6-1 include transfer lines, cell 6L equipment, and the other tanks and sumps in the 221-T tank system.

Waste Type: Process Effluent
Waste Description: The unit receives liquid mixed waste from T Plant (221-T, 2706-T) decontamination operations.

Code: 221-T-11-R **Classification:** Accepted
Names: 221-T-11-R; 221-T-TK-11-R; T Plant Complex; Tank 11-R 221-T System **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1944
Status: Active **End Date:**

Description: Tank 221-T-11-R is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank is oval shaped with an open top and flat bottom.

Location: The tank is located in cell 11R, near the center of the long axis of the 221-T canyon.

Process Description: Tank 221-T-11-R receives waste from decontamination operations over cell 11R. The wastes are transferred from 221-T-11-R to 221-T-15-1 via steam jet

Related Sites/ Structures: Structures associated with tank 221-T-11-R include transfer lines, cell 11R equipment, and the other tanks and sumps in the 221-T tank system.

Waste Type: Process Effluent
Waste Description: The unit receives liquid mixed waste from T Plant decontamination operations.

Code: 221-T-15-1 **Classification:** Accepted
Names: 221-T-15-1; 221-T-TK-15-1; T Plant Complex; Tank 15-1 221-T System **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1957
Status: Active **End Date:**

Description: Tank 221-T-15-1 is a type 347 stainless steel tank with piping connecting the unit to other tanks in the 221-T tank system. The tank has an open top, a flat bottom, and is oval in shape.

Location: The unit is located in cell 15R, in the southern third of the 221-T canyon building.

Process Description: Tank 221-T-15-1 receives wastes transferred from Tanks 221-T-5-9 and 221-T-11-R, and liquid decontamination wastes generated on the cell 15R Decontamination Pad. This tank is the final

tank in the 221-T Tank system before the waste is off loaded to railroad tank cars in the 221-T Railroad Tunnel. Nitrate addition or pH adjustment may also take place in this tank.

Related Sites/ Structures: Structures associated with Tank 221-T-15-1 include the 241-TX-154 Diversion Box, associated transfer lines, cell 15 equipment, the other 221-T Tanks, and the double-shell tank system.

Waste Type: Process Effluent

Waste Description: The unit receives liquid mixed waste from T Plant (221-T, 2706-T) decontamination operations.

Code: 224-T

Classification: Accepted

Names: 224-T; 224-T Canyon; Plutonium Concentration Facility

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1944

Status: Inactive

End Date:

Description: Access to the building is restricted. The entrance portion of the building is enclosed in a locked, chain link fence. The east side of the building that coincides with the canyon cells has sealed doors marked A, B, C, D, E, and F. Each door is posted with Fissile Material, High Radiation, High Contamination and Airborne Contamination signs. Adjacent to the doors, Fixed Contamination signs are posted on painted portions of the concrete facility walls. Inside the building, the canyon portion of this building has been sealed off and is not accessible.

Location: This is a three story concrete building located southeast of 221-T and south of 222-T.

Release Description: In 1972, while modifications to the building were being made, plutonium contaminated soil was identified outside the building, presumably associated with a leaking process waste line (UPR-200-W-102).

Process Description: The building was originally constructed in 1943 as part of the T Plant bismuth-phosphate fuel processing complex. From 1944 to 1956 it functioned as the Plutonium Concentration Facility, concentrating the liquid output from the plutonium separations plant from 1,249 liters to 30 liters. The concentration took place in six radiologically contaminated process cells (Cells A, B, C, D, E, & F), located in the southeastern 1/3 of the 224-T building. The cells contained various tanks and piping. Cells A, B, D, and E contained a 40 inch centrifuge on a platform. Cell C is a pit that connects to the underground pipe tunnel from Sections 13 & 14 of 221-T. Cell F was "L" shaped and included an office and a glass enclosure where partial finished product was collected for transfer to 231-W. The contaminated process cell equipment was flushed when the process was terminated (1960's). The amount of radiological or regulated material remaining within the process cells and piping is unknown. The plutonium concentration process was identical to the concentration process done at 224-B in 200 East Area. A thorough radiological characterization was done of the 224-B Hot Cells in 1985. An inventory of radioactive material remaining in the 224-B hot cells, based on average measurements, estimated 1.1 curies of cesium-137, 22 curies of strontium-90, 3.7 curies of cobalt-60, 5 curies of americium-241, 31 curies of plutonium-239 and 2 curies of other plutonium isotopes. This characterization is assumed to be similar to what may remain in the 224-T hot cells. The building was used as a plutonium liquid and scrap plutonium storage facility from 1975 to 1985. In 1985 the building was modified to house the Transuranic Assay Facility (TRUSAF) equipment. The TRUSAF Part A Permit states the contaminated canyon portion was sealed off from the rest of the building in 1975. During the 1960's and 1970's, the 224-T building was used to store solid and liquid plutonium-bearing material. The storage area was located on the second floor, in the pipe gallery. The southwest end of the first floor of 224-T consisted of the former G-Cell (never used) and the F-10 Hood Room. This area and the

adjoining office was converted into an auxiliary measurement facility, equipped with instrumentation for measuring quantities of plutonium. There was also an enclosed equipment dismantling area that handled equipment for the recovery of plutonium residues. In 1985, a RCRA compliant storage unit Transuranic Waste Storage and Assay Facility was placed in 224-T and occupies 2/3 of the building and adjacent outdoor areas. This portion of the building is documented in WIDS Site code TRUSAF. This operation is currently on standby

Related Sites/ Structures: This portion of the 224-T building is associated with the Bismuth-Phosphate plutonium processing of nuclear fuel at 221-T from 1944 to 1956. The pipeline from 224-T to 216-T-3 reverse well is sitecode 200-W-226-PL.

Waste Type: Sludge

Waste Description: In the 1940's, plutonium solutions were concentrated in the six cells in 224-T. In the 1950's, the tanks were drained and rinsed. In 2001, Non-destructive Assay analysis of nineteen tanks found less than 2 grams of fissile material inside the tanks, except for one that contained 4 grams of fissile material.

Code: 241-T-302

Classification: Accepted

Names: 241-T-302; 241-T-302 Catch Tank

Reclassification: Rejected (9/18/2002)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: Although this tank has been listed in the Tri Party Agreement (appendix B), it has been verified that this tank does not exist.

Location: It has been verified this catch tank does not exist. Previous documents have described the tank location to be adjacent to the 241-T-152 Diversion Box, inside the 241-T Tank Farm fence. This has proved to be incorrect.

Code: 224-U CNT

Classification: Accepted

Names: 224-U CNT; 224-U Condensate Neutralization Tank; 224-U Process Condensate Neutralization Tank; 224-U-TK-C-5; Process Condensate Elementary Neutralization Unit; Tank TK-C-5

Reclassification: None

Type: Neutralization Tank

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1989

Description: The unit is part of a four tank system designed to neutralize UO₃ Plant process condensate prior to disposal in the 216-U-17 Crib.

Location: The unit lies along the north wall of cell C, inside the 224-U Building.

Process Description: The process condensate stream is currently inactive. The 224-U Condensate Neutralization Tank is presently in a standby mode with the Uranium Trioxide (UO₃) Facility. During active facility operations, a predetermined dose of phosphoric acid was pumped from TK-C-8 to TK-C-5 every time condensate was pumped from TK-X-37 to TK-C-5. The agitator in TK-C-5 worked in conjunction with a recirculating pump loop to agitate the mixture. Potassium hydroxide from TK-X-36 was added to the recirculating loop under pH feedback control. When pH was within the specified limits, the recirculating loop discharged from the system. Process condensate was discharged to Crib 216-U-17 until 1989. Afterwards it was discharged to storage tanks at the Uranium Trioxide (UO₃) Plant.

Related Sites/ Structures: Tank TK-X-36, Surge Tank TK-X-37, transfer lines, pumps, valves, instrumentation, and the 216-U-17 Crib.

Waste Type: Process Effluent

Waste Description: Under normal operating conditions, the process condensate is not designated as a dangerous waste. However, there is a potential for residual chemical or radiological contamination to be present in this neutralization system.

Code: 224-U HWSA

Classification: Accepted

Names: 224-U HWSA; 224-U Hazardous Waste Storage Area

Reclassification: Rejected (9/6/2000)

Type: Storage Pad (<90 day)

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1995

Description: The unit consisted of a paved pad surrounded by a paved parking area on the northwest side of the 224-U Building. There is (April 12, 2000) no longer any evidence of the 90 Day Storage Pad in the area.

Location: The site was located on the northwest side of the 224-U Building.

Process Description: The hazardous waste staging area was used to store (stage) Uranium Trioxide (UO₃) and PUREX Plant related hazardous wastes prior to transport.

Related Sites/ Structures: Structures associated with this unit included the 224-U Building and any containment units located at the pad.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Waste that was stored (staged) here included paints, solvents, and other hazardous wastes generated at the Uranium Trioxide (UO₃) Plant.

Code: 276-U

Classification: Accepted

Names: 276-U; 276-U Solvent Facility; 276-U Solvent Handling Facility; 276-U Solvent Recovery Facility

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1957

Description: The 276-U Solvent Recovery Facility is an aboveground concrete basin extending below grade. The unit is physically attached to the southern wall of the 221-U Canyon.

Location: The unit is directly attached to the southern wall of 221-U.

Process Description: The building is currently isolated. Prior to retirement the building was used for the makeup and treatment of the organic solutions used in the 221-U Building.

Related Sites/ Structures: Structures associated with the unit include the tanks and vacant tank pads, the 221-U Building, and the numerous access equipment and utilities related to the tanks.

Waste Type: Chemicals

Waste Description: Radiological contamination (fixed and smearable) is present on the structures and equipment. Residual chemical contamination may also be present.

hexane/benzene/butyl lithium/tetrahydrofuran 1 kg (2.2 lb); chromium metal powder 454 g (1.0 lb); toluene/ ether/benzene/ethylacetate 4 kg (8.8 lb); heptane/diethyl ether 4 kg (8.8 lb); ethyl ether/allyl magnesium bromide 1 kg (2.2 lb); benzene/ethyl acetate/ tetrahydrofuran/ether/toluene/ hydrogen sulfide/methanol 4 kg (8.8 lb); ethyl ether 29.7 kg (65.5 lb); picric acid 460 g (1.01 lb); isopropyl ether 1 kg (2.2 lb); butoxyethanol 946 g (2.1 lb); butyl cellosolve 89 g (0.2 lb); carbon trichloride 445 g (0.98 lb); butyl ethanol 9.46 kg (20.9 lb); phenylether 235 g (0.52 lb).

Closure Info: Soil samples were collected and analyzed to show the absence of chemicals in the soil.

Code: 200-W CSLA **Classification:** Accepted

Names: 200-W CSLA; Construction Surface Laydown Area; Non-Rad Burial Ground; 200-W Construction Surface Laydown Area **Reclassification:** Rejected (1/19/2000)

Type: Dumping Area **Start Date:** 1/1/1945

Status: Inactive **End Date:** 1/1/1950

Description: The site is an old construction laydown area. The laydown area is not marked. The 216-U-17 Crib is located at the northwest corner of this location. A 1997 site visit also noted the 200-UP-1 Groundwater Pump and Treat facility in the northwest portion of this location. There was evidence of scattered miscellaneous debris on the surface of the vacant area south and east of the 216-U-17 crib. In 1997, construction of the new Cross-Site Transfer Line was occurring nearby.

Location: The site is located near the southeast corner of the 16th street and Beloit Avenue intersection, inside 200 West Area.

Process Description: A copy of a historical photograph from an unidentified document was found that shows the construction laydown area being actively used. There is a large temporary hut and several smaller temporary structures and material located at the site. It is assumed to have been taken in the early 1950's, when U Plant was being renovated to begin the Uranium Metal Recovery mission. The U-Plant Technical Baseline Report states the area was a "pit" where trucks were driven to dump material. No drawings have been identified that identify a pit at this location, although an open trench is visible on a 1948 aerial photograph, east of where the 216-U-17 crib is currently located. The trench has been given WIDS sitecode 200-W-71. A meeting with HL Maxfield and RP Knight in 1987 prior to the construction of the 216-U-17 Crib confirmed the area had been used as a laydown area to support construction activities at U-Plant. That explained the large amount of surface debris in the area. The debris located over the new crib site was bladed off during construction.

Related Sites/ Structures: The area is associated with 200-W-71.

Waste Type: Misc. Trash and Debris

Waste Description: This site was used to dispose of unusable valves, piping, and other plumbing materials. Angle iron, crushed cans and drums, rusty wire and metal frames were noted on the surface in 1997.

Code: 200-W PAP **Classification:** Accepted

Names: 200-W PAP; 200-W Powerhouse Ash Pit **Reclassification:** Rejected (5/21/2008)

Type: Coal Ash Pit **Start Date:** 1/1/1943

Status: Inactive **End Date:** 1/1/1995

Description: The pit is a rectangular, open hole, approximately 7.6 meters (25 feet) deep. In February

2000, the site was empty and dry. As of April, 2000, the unit is a deep pit with steep sloped sides. It is surrounded with a light chain and posted with "Danger-Open Pit" signs. A layer of ash remains on the floor of the pit.

Location: The pit is located south of the 284-W Powerhouse, west of Beloit Ave. and north of 19th Street.

Process Description: When supporting the powerhouse operation, the pit was filled with an ash slurry that was sluiced through two underground pipes that emerge from the north side of the pit. Periodically, when the pit became too full, ash was dredged from the pit and moved to the Ash Disposal Basin located on the east side of Beloit Ave.

Related Sites/ Structures: The pit is associated with the 284-W Powerhouse and the 200-W Ash Disposal Basin.

Waste Type: Ash

Waste Description: A waste determination of the Hanford Site 200 Area steam plant ash was performed in the early 1990s. The waste stream was determined to be nondangerous. Samples were analyzed using the TCLP (Toxicity Characteristic Leaching Procedure), and all were below the regulatory limits. Eleven sample results were also reported for pH: the results ranged from 7.66 to 11.91, with an average of 9.27. The second and third highest pH results were 10.09 and 9.94.

The rate of ash generation was approximately 8,890 cubic yards per year. The pit held approximately 57,290 cubic yards of ash.

Code: 200-W PP	Classification: Accepted
Names: 200-W PP; 284-W-B; 200 West Powerhouse Ponds; 200-W Powerhouse Pond	Reclassification: Consolidated (4/20/2000)
Type: Pond	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1995
Description: The unit consists of two elongated basins. Drawing H-2-94251 identifies the north basin as a settling pond and the south basin as a seepage pond. The sides and bottom are covered with cobbles. The head wall and the spillway between the basins are made of concrete. The basins were placed on top of the original head end of the 216-U-14 ditch. This site has been consolidated with the 216-U-14 Ditch.	
Location: The unit is located inside 200 West Area, west of the 284-W Powerhouse.	
Process Description: Prior to the construction of the Powerhouse Pond, the head end of the 216-U-14 Ditch occupied this location. The Powerhouse Pond was constructed over a portion of the 216-U-14 Ditch when the ditch was deactivated and stabilized. The Powerhouse Pond received effluent from the 284-W Powerhouse, the 283-W Water Filter Plant and the 282-W Water Reservoir from August 1984 until June 1995. In June 1995, the 284-W Powerhouse was shut down and the effluent from the filter plant and reservoir was routed to the 200 Area Treated Effluent Disposal Facility.	
Related Sites/ Structures: The basins are associated with pipeline 200-W-102-PL, 216-U-14 ditch, 284-W Powerhouse, 283-W Water Filter Plant, and 282-W Water Reservoir.	
Waste Type: Water	
Waste Description: The unit received wastes from steam production and water treatment activities from the 284-W Powerhouse. The major components of the powerhouse effluent included quench water for the boiler, basin flush water, softener backflush from the filter systems, and boiler blowdown. Approximately 23.8 million liters per month (6.29 million gallons per month) of liquid waste	

was discharged to this unit.

The Site Was Consolidated With:**Code:** 216-U-14**Names:** 216-U-14; 216-U-14 Ditch; Laundry Ditch

Code: 200-W-4**Classification:** Accepted**Names:** 200-W-4; U-Farm Landfill**Reclassification:** Rejected (5/13/2008)**Type:** Burial Ground**Start Date:** 1/1/1992**Status:** Inactive**End Date:****Description:** The site was a small excavation containing a yellow paint-like substance. The area is not marked and is no longer visible from the surface.**Location:** The unit is located outside the south fence of 241-U Tank Farm, near the corner of 16th Street and Camden Avenue**Waste Type:** Chemicals**Waste Description:** The unit waste includes lead, chromium and cadmium. It was assumed to be dried, yellow paint.

Code: 200-W-5**Classification:** Accepted**Names:** 200-W-5; Burial Ground/Burning Pit; U Plant Burning Pit; UPR-200-W-8**Reclassification:** Consolidated (5/6/2004)**Type:** Burial Ground**Start Date:****Status:** Inactive**End Date:****Description:** DUPLICATE entry.**Location:** The unit is east of 221-U Building.**Waste Type:** Misc. Trash and Debris**Waste Description:** The waste includes contaminated coveralls and soil.**Description:****The Site Was Consolidated With:****Code:** UPR-200-W-8**Names:** UPR-200-W-8; 200-W-5; Old Burial/Burning Pit; UN-200-W-8; U-Plant Burning Pit/Burial Ground

Code: 200-W-10**Classification:** Accepted**Names:** 200-W-10; Grout Wall Test; Item 10 (RCRA General Inspection); Lysimeter Test Site**Reclassification:** Rejected (5/13/2008)**Type:** Depression/Pit (nonspecific)**Start Date:** 1/1/1976**Status:** Inactive**End Date:** 1/1/1977**Description:** The 1995 inspection team observed a pit covered at grade with wood planking. It was surrounded by orange plastic fencing on steel posts marked with two signs, one Danger Keep Away and the other stating Controlled Area. Adjacent to orange fenced area were 5 centimeters (2 inch) diameter metal pipes, protruding vertically above grade at heights ranging from 0.45 to 1.05 meters (18 inches to 3 1/2 feet). Debris (consisting of wire, metal and wood) was present.**Location:** The site is located inside 200 West Area, southeast of 221-U. It is north of 13th Street,

approximately 200 feet north of the 201-W building. The site is west of the dirt road.

Waste Type: Chemicals
Waste Description: The grout consisted of 11,578 L (3059 gal) sodium silicate, 2,467 L (652 gal) formamide, and 20.2 kg (44.5 lb) calcium chloride

Code: 200-W-17 **Classification:** Accepted
Names: 200-W-17; S Plant Project W-087 Aluminum Silicate Discovery **Reclassification:** Rejected (5/6/2004)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The pipe trench where white aluminum silicate was found has been back-filled to grade. A single, unmarked, steel post indicates the location of the excavation. No signs are attached to the post. There is no visual evidence of aluminum silicate on the surface.

Location: The site is located in the 200 West Area, southwest of REDOX. The site is 120 meters (394 feet) north of 10th Street, along the dirt road that runs outside the REDOX exclusion area fence line.

Release Description: On July 17, 1995, while digging a new pipeline (project 200 W-087), a band of white material was found in the trench excavation. A sample was collected and analyzed. The source of the aluminum silicate is likely to be the same as WIDS site 200-W-1 Mud Pit.

Related Sites/ Structures: Associated structures include 200-W-1 and the 200 W-087 pipe line project.

Waste Type: Chemical Release
Waste Description: The waste associated with this site was aluminum silicate. The aluminum silicate is probably from drilling mud.

Code: 200-W-18 **Classification:** Accepted
Names: 200-W-18; S Plant Project W-087 Aluminum Oxide Discovery **Reclassification:** Rejected (5/6/2004)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The pipe trench where the aluminum oxide was found has been backfilled with soil. A single, unmarked, steel post marks the location of the excavation. There is no visual evidence of aluminum oxide on the surface.

Location: The site is located west of 202-S (REDOX), on the west side of the dirt road running outside the REDOX exclusion area fence.

Release Description: On July 17, 1995, while digging a new pipe trench for Project 200 W-087, a layer of white material was seen in a pipeline excavation. It was found approximately 0.3 meters (one foot) below ground surface and was approximately 3 inches thick. The source of the aluminum oxide at this site is likely the 200-W-1 Mud Pit.

Related Sites/ Structures: The associated structures include 200-W-1 and the 200 W-087 pipe line.

Waste Type: Abandoned Chemicals
Waste Description: The sample results collected from this site showed the material was aluminum oxide and

Description: calcium. The aluminum oxide is probably from drilling mud

Code: 200-W-19 **Classification:** Not Accepted
Names: 200-W-19; Steam Line Asbestos Release **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1995
Status: Inactive **End Date:**

Description: The site is not marked or posted. It is under a lawn between the M0039 building and a sidewalk. The site is where asbestos covering a clean steam line was knocked to the ground and cleaned up by the next day.

Location: The release site is located approximately 37 meters (40 yards) west of the 2704S building.

Release Description: On August 30, 1995, a backhoe driver was driving under an aboveground steam line when his backhoe hydraulic arm struck the steam line. An area approximate 2 to 3 feet (0.6 to 0.9 m) in length, along the 10 inch (25 cm) line, was affected. This allowed a release of approximately 1180 cubic centimeters (72 cubic inches) of asbestos to the ground below.

Waste Type: Asbestos (friable)

Waste Description:

Code: 200-W-20 **Classification:** Accepted
Names: 200-W-20; T Plant Complex **Reclassification:** None
Type: Process Unit/Plant **Start Date:** 1/1/1944
Status: Active **End Date:**

Description: The T Plant Complex is enclosed within a 2.4 meter (8 foot) chain link fence. Facilities within the fence include the 221-T Canyon Building, the 2706-T Decontamination Facility, the 211-T Sump, the 214-T Storage Building, the 277-T Storage Building, the 2715-T Material Storage Building, the 291-T Ventilation Stack Complex and several small support buildings. The T Plant Complex is considered a RCRA Treatment and Storage Unit.

Location: The T Plant Complex is located inside the 200 West Area near the corner of Beloit Ave. and 23rd Street.

Release Description: Over time, several documented unplanned releases have occurred within the area now defined as the T Plant Complex. HAN-62372 DEL documents that a valving error released 2350 gallons of phosphoric acid to the ground in the 211-T area in November 1955.

Process Description: Currently, the T Plant Complex is a treatment and storage unit for dangerous and mixed waste. The primary mission of the facility is to decontaminate equipment and debris. Equipment is often decontaminated and repaired prior to being returned to service on the Hanford site. Additional activities include identification, verification, sampling, treatment and repackaging of dangerous and mixed waste and decontamination technology demonstrations. Within the T Plant complex, dangerous and/or mixed waste decontamination and treatment activities occur in the 221-T canyon, the 221-T railroad tunnel, the 2706-T building and support facilities incorporating various technologies to remove mixed waste contamination. Liquid waste generated from the decontamination process is collected and transferred to the 2706-T tank system or the 221-T tank system. From these tank systems, the waste is transferred to a treatment, storage/disposal unit capable of accepting this waste. Treatment of dry and liquid waste may include sorting, repackaging, neutralization, absorption and compaction. The 221-T

Related Sites/ Structures: The borrow pit is associated with the 216-S-10 Pond.

Code: 200-W-25	Classification: Not Accepted
Names: 200-W-25; 216-S-16 Borrow Pit	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1984
Status: Inactive	End Date:

Description: The site is a shallow, scraped area that forms a semi-circle around the north and west edges of the stabilized 216-S-16 Pond. The site is mostly revegetated with crested wheatgrass and large patches of native plants.

Location: The borrow pit is located southwest of 200 West Area, outside the perimeter fence.

Process Description: Clean backfill material was taken from this area to backfill and stabilize the 216-S-16 Pond. No waste has been placed in this area.

Related Sites/ Structures: This borrow pit is associated with the 216-S-16 Pond.

Code: 200-W-26	Classification: Not Accepted
Names: 200-W-26; 216-S-17 Borrow Pit	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1984
Status: Inactive	End Date:

Description: The site is an unmarked shallow scraped area located south of the stabilized 216-S-17 Pond. It is slowly revegetating.

Location: The borrow pit is located outside the south perimeter fence of the 200 West Area. It is south of the southern boundary of the stabilized 216-S-17 Pond.

Process Description: Clean backfill material was taken from this area to backfill and stabilize the 216-S-17 Pond. No waste was placed in this area.

Related Sites/ Structures: The borrow pit is associated with the 216-S-17 Pond.

Code: 200-W-27	Classification: Not Accepted
Names: 200-W-27; 216-S-19 Borrow Pit	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1984
Status: Inactive	End Date:

Description: The site is a shallow, scraped area south of the stabilized 216-S-19 Pond. The site has been revegetated with crested wheatgrass, and now resembles the stabilized pond (the area of the former pond is delineated with concrete posts).

Location: The site is located south of 10th Street, outside the south perimeter fence of the 200 West Area.

Process Description: Clean backfill material was taken from this site to backfill and stabilize the 216-S-19 Pond. No waste was deposited at this site.

Related Sites/ Structures: This borrow pit is associated with the 216-S-19 Pond.

Code: 200-W-28	Classification: Not Accepted
Names: 200-W-28; 216-U-10 Borrow Pit; U Pond Borrow Area	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1985
Status: Inactive	End Date:
Description: The 216-U-10 Borrow Pit is a large shallow, scarred sandy area adjacent to the north side of the backfilled 216-U-10 Pond. It is sparsely vegetated with crested wheatgrass.	
Location: The borrow area is located south of 16th Street, east of Dayton Avenue and north of the 216-U-10 Pond.	
Process Description: Backfill material was taken from this area in 1985 for 216-U-10 Pond stabilization activities. No waste has been placed in the borrow area.	

Related Sites/ Structures: This borrow pit provided fill for the 216-U-10 Pond.

Code: 200-W-29	Classification: Not Accepted
Names: 200-W-29; 216-U-11 Borrow Pit	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1985
Status: Inactive	End Date:
Description: The site is a large shallow, scraped area south of the stabilized 216-U-11 Ditches. The area has very little vegetation.	
Location: The site is located south of the 216-U-11 Ditches, outside the west perimeter fence of 200 West Area.	
Process Description: Clean backfill material was taken from this area in 1985 during the stabilization of the 216-U-10 Pond and the 216-U-11 Ditch. No waste has been placed in the borrow pit.	

Related Sites/ Structures: The borrow pit is associated with the 216-U-11 Ditch and 216-U-10 Pond.

Code: 200-W-30	Classification: Not Accepted
Names: 200-W-30; 218-W-1A Borrow Pit	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1983
Status: Inactive	End Date:
Description: The site is a shallow, scraped area adjacent to the east side of the area designated as the 218-W-6 Burial Ground. The area has been revegetated with grasses. The borrow pit is not marked or posted.	
Location: The site is located northeast of the 218-W-1A Burial Ground and adjacent to the east boundary of the 218-W-6 Burial Ground.	
Process Description: Clean backfill material was taken from the 200-W-30 Borrow Pit in 1983 to stabilize the surface	

Process Description: of the 218-W-1A Burial Ground. No waste was placed in the borrow pit.

Related Sites/ Structures: The borrow pit is associated with the surface stabilization of the 218-W-1A Burial Ground.

Code: 200-W-31 **Classification:** Not Accepted

Names: 200-W-31; 218-W-2A Borrow Pit **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1980

Status: Inactive **End Date:**

Description: The area that was used for backfill material for the 218-W-2A stabilization is currently underneath the southern portion of the 218-W-5 Burial Ground. The borrow pit is no longer visible.

Location: The site was located west of Dayton Avenue and north of 23rd Street, west of the the 218-W-3 Burial Ground.

Process Description: Clean backfill material was removed from this borrow pit in 1980 and used to stabilize the surface of the 218-W-2A Burial Ground.

Related Sites/ Structures: This borrow pit was associated with the 218-W-2A Burial Ground.

Code: 200-W-32 **Classification:** Not Accepted

Names: 200-W-32; 216-Z-19 Borrow Pit **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The soil disturbance is no longer visible

Location: The borrow pit was located north of 16th Street, west of the 216-Z-20 Crib. The soil was taken from an area in the eastern part of the 218-W-4C Burial Ground. The exact location cannot be defined.

Process Description: Clean backfill material was taken from this area and used to stabilize the surface of the 216-Z-19 Ditch. No waste was placed in the borrow pit.

Code: 200-W-34 **Classification:** Not Accepted

Names: 200-W-34; 2607-WL; 272-WA Septic System North of 213W; Duplicate of 2607-WL **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: This site is a duplicate of 2607-WL, which is also listed in WIDS as servicing the 272-WA Building and being north of that facility.

Related Sites/ Structures: The 2607-WL septic system services the 272-WA Building. The 200-W-34 septic system was entered into WIDS, but is a duplicate of 2607-WL septic system.

Waste Type: Sanitary Sewage

**Waste
Description:**

Code: 200-W-35 **Classification:** Accepted

Names: 200-W-35; 200-W-35-A Infiltration Test Site; 200-W-35-B Bentonite Slurry Test Site; 200-W-35-C Buried Garbage Can with Lid; Lysimeter Test Site; Various Sites North of 201-W **Reclassification:** Rejected (5/13/2008)

Type: Dumping Area **Start Date:** 1/1/1970

Status: Inactive **End Date:**

Description: During the late 1970's and early 1980's, the area north of 13th Street and west of Albany Ave. was used for testing various technology development studies. A 1995 Site Investigation visually identified a shallow excavated area, a pit covered with plywood, and a vertically buried garbage can with the lid at ground surface level. The sites are no longer visible because they were backfilled in 1997. They are not marked or posted.

Location: The sites are located inside the 200 West Area, in an empty field north of 13th Street and west of Albany Avenue. Access is via a dirt road north of the 201-W Fence.

Process Description: During the 1970's, the Atlantic Richfield (ARCO) and Rockwell Research Departments used this area for testing equipment and processes to support the waste management operations. This area was selected for testing because it was adjacent to the REDOX facility, where the Research Department offices were located, and because the area did not contain any contaminated facilities or vadose contamination.

Related Sites/ Structures: This site is associated with information contained in Subsite section of 200-W-35, 200-W-12 and 200-W-10.

Waste Type: Equipment

Waste Description: No hazardous or radiological material was used in any of the tests.

This Site has the Following SubSites:

Code: 200-W-35:1

Names: 200-W-35:1; 200-W-35-A Infiltration Test Site

Code: 200-W-35:2

Names: 200-W-35:2; 200-W-35-B; Bentonite Slurry Test Site

Code: 200-W-35:3

Names: 200-W-35:3; 200-W-35-C; Buried Garbage Can with Lid

Code: 200-W-35:1 **Classification:** Accepted

Names: 200-W-35:1; 200-W-35-A Infiltration Test Site **Reclassification:** Rejected (5/13/2008)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a shallow excavation located east of the dirt road north of 201-W. It is approximately 10 by 20 meters (30 by 60 feet). A site visit in 1995 identified some aluminum pipes laying around the area. W.H. Price states that the site was used as an Infiltration Test Site to determine the infiltration capacity of new cribs prior to their construction.

The SubSite is Part Of:**Code:** 200-W-35**Names:** 200-W-35; 200-W-35-A Infiltration Test Site; 200-W-35-B Bentonite Slurry Test Site; 200-W-35-C Buried Garbage Can with Lid; Lysimeter Test Site; Various Sites North of 201-W**Code:** 200-W-35:2**Classification:** Accepted**Names:** 200-W-35:2; 200-W-35-B; Bentonite Slurry Test Site**Reclassification:** Rejected (5/13/2008)**Type:** Dumping Area**Start Date:****Status:** Inactive**End Date:****Description:** The Bentonite Slurry Test Site is located on the east side of the dirt road north of 201-W about half way between 201-W and the end of the road. It is a pit covered with a plywood cover and a circular hole cut in the plywood. W.H. Price states the site was used to develop a tool to sample the 361-Z Tank. Three drums were welded together and filled with a thick bentonite slurry and food coloring to simulate the contents of the 361-Z Tank. The test principal investigator (C.T. Webster) stated that no hazardous or radioactive materials were used in the test. This pit was backfilled with clean dirt on June 20, 1997.**The SubSite is Part Of:****Code:** 200-W-35**Names:** 200-W-35; 200-W-35-A Infiltration Test Site; 200-W-35-B Bentonite Slurry Test Site; 200-W-35-C Buried Garbage Can with Lid; Lysimeter Test Site; Various Sites North of 201-W**Code:** 200-W-35:3**Classification:** Accepted**Names:** 200-W-35:3; 200-W-35-C; Buried Garbage Can with Lid**Reclassification:** Rejected (5/13/2008)**Type:** Dumping Area**Start Date:****Status:** Inactive**End Date:****Description:** The buried garbage can is located east of the dirt road north of 210-W and west of the Bentonite Slurry Test Pit. It was not marked or posted. Conversations with W.H. Price, Ray Giddings and Steve Phillips did not reveal any information about its use. The Garbage Can was backfilled with clean dirt on June 20, 1997.**The SubSite is Part Of:****Code:** 200-W-35**Names:** 200-W-35; 200-W-35-A Infiltration Test Site; 200-W-35-B Bentonite Slurry Test Site; 200-W-35-C Buried Garbage Can with Lid; Lysimeter Test Site; Various Sites North of 201-W**Code:** 200-W-36**Classification:** Accepted**Names:** 200-W-36; EP 211-143; TK-SQ-143**Reclassification:** None**Type:** Storage Tank**Start Date:****Status:** Inactive**End Date:** 1/1/1969**Description:** The site is a single aboveground, horizontal tank on three concrete saddles. The tank is surrounded by steel post and chain labeled with "DANGER-Hard Hat and Safety Glasses Required" and "Radioactive Material Area" signs.**Location:** The tank is in the 211-T tank farm area, which is between 221-T and 2706-T.**Process** Originally the tank was a product tank that stored solutions used in reactor fuel dissolving

Process

Description: process. After T Plant ceased operation as an active process facility, the tank was used as a storage tank to temporarily hold 2706-T liquid decontamination waste until it could be sampled. The waste was then transferred to tanks in 221-T Building or to another location. The tank has not actively managed wastes since 1969. At that time a pipeline from 211-T Sump to 221-T Building was installed. Ten to eighteen inches of solids remain in the tank.

Related Sites/ The site is related to 2706-T, 221-T, 211-T Tank Farm.

Structures:

Waste Type: Chemicals

Waste Description: A video inspection showed no free liquids and about 25.4 to 45.7 centimeters (10 to 18 inches) of solids in the tank bottom. Samples of the solids were taken April 21, 1994 and showed several hazardous constituents (lead and mercury) at concentrations greater than dangerous waste levels. The tank contains low level radioactive material from decontamination activities at 2706-T.

Code: 200-W-37

Classification: Accepted

Names: 200-W-37; Buried Tygon Tubing Near 241-S-101

Reclassification: Consolidated (6/13/2002)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is not separately marked or posted.

Location: The site is located just west of the 241-S-101 tank, inside 241-S Tank Farm.

Process Description: In Volume 2 of WHC-EP-0912, JD Anderson documented interviews with former Hanford workers. One of these interviews discusses flushing plugged transfer lines with hot water. The former employee states that in order to unplug one line in 241-S Tank Farm, a piece of heavy tygon tubing was attached to the pressure hose to allow the flush water to negotiate the turns of the transfer line.

Waste Type: Equipment

Waste Description: The equipment was radioactive tygon tubing.

Description:**The Site Was Consolidated With:**

Code: 200-W-96

Names: 200-W-96; Contaminated Soil at 241-S/SX/SY Tank Farm

Code: 200-W-40

Classification: Accepted

Names: 200-W-40; 292-T; Emission Control Lab; Stack Gas Sampling Building

Reclassification: None

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: The site is a grey concrete block building. Tie back side of the building is surrounded by post and chain labeled "Contamination Area". Sign on building reads "Emission Control Laboratory 292-T". Surrounding area is gravel and cobble.

Location: The building is located in northeast portion of 200 West Area, within T-Plant Complex. It is about south of 291-T stack, north of 222-T building, and east of 221-T building.

Process Description: The 200-T building originally housed the 201-T stack gas sampling system and supported the

Process Description: 221-T off gas monitoring operations. When T plant was built it was not known what material would escape during the reprocessing of the irradiated fuel. Accordingly the stack was equipped with state of the art monitoring equipment, including scrubbers containing 5% soda ash solutions that the stack effluent was passed through. The solution was dried using refrigeration, and then counted to determine Xenon-133 activity. Extensive reviews of documentation remaining from T Plant operations has not located any documents that quantify the amount of material that was placed in the tanks, but very little emphasis was placed on waste management at that time and it is doubtful that any documents were kept. In 1966, a building addition was added to the existing structure to house a fuel element testing facility, operated by Battelle Northwest. During the lab upgrade, the two underground storage tanks were relocated from southeast of the original 292-T building to their present position, southeast of the 292-T building addition. Fuel failure analysis of irradiated fuel rods was conducted in 292-T in the 1960's and early 1970's. Irradiated N Reactor fuel rods were heated in an induction furnace until rupture or failure occurred. After the rupture occurred, the fuel was transported to the 300 area for further analysis. The fragments that remained in the oven were removed, and any material that remained on the oven surface was dissolved with nitric acid. It is doubtful that much if any of the aluminum clad was dissolved, since aluminum will not dissolve in nitric acid without the use of a catalyst. The solution of trace amounts of irradiated fuel and nitric acid was taken to 200 West Area and poured into the 292-T-TK-1 and 2 tanks through the risers. The solution in the tanks was then neutralized with sodium hydroxide. Neutralization caused the dissolved metals to precipitate and deposit in the tank bottoms.

Related Sites/Structures: The site is associated with 291-T, 221-T, 216-T-8, 200-W-140-PL pipeline and the 200-W-16 underground tanks.

Waste Type: Equipment
Waste Description: Building , equipment, underground lines
 Reported Date: October 9, 1995

Code: 200-W-41 **Classification:** Accepted
Names: 200-W-41; Abandoned Drums; Drums Found East of T Plant **Reclassification:** Rejected (5/13/2008)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:** 1/1/1999
Description: In August 1996, the site was described as a single 190-liter (50-gallon) carbon tetrachloride drum and two 114-liter (30-gallon) Trysben (herbicide) drums. The drums showed no evidence of contaminating the surrounding soil. A hole was observed near the bottom of the carbon tetrachloride drum. A site investigation done in September 1996 found only two drums at this location. The 114-liter (30-gallon) Trysben weed killer drum was in good condition and was completely sealed. The drums were removed in September 1999.
Location: The site was located in 200 West Area approximately 200 to 300 meters (660 to 980 feet) east of T Plant, between Beloit and Albany Avenues and north of 23rd Street.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The waste consisted of empty drums, removed in 1997. There was no evidence of leakage from the drums, and no stained soil under them. .

Code: 200-W-43 **Classification:** Accepted
Names: 200-W-43; 291-S Stack Sand Filter **Reclassification:** None

Waste Type: Solid
Waste Description: Using information found in PNNL document "Radionuclide Releases to the Atmosphere from Hanford Operations, 1944-1972" (PNWD 222 HEDR), a standard decay equation estimates the curies of radionuclides in the T Plant Sand Filter to be : 29 curies of Strontium-90, 33 curies of Cesium-137 and 4.1 curies of Plutonium-239 (or 66 grams) as of October 1994.

Code: 200-W-46 **Classification:** Accepted

Names: 200-W-46; 222-S Laboratory Room 4-E 90-Day Waste Accumulation Area; Satellite Accumulation Area **Reclassification:** Rejected (9/14/2000)

Type: Satellite Accumulation Area **Start Date:**

Status: Active **End Date:**

Description: This site is not a 90 Day Storage Area but is a Satellite Accumulation Area for Room 4E of the 222-S Analytical Laboratory.

Location: This SAA is in Room 4E of the 222-S Building.

Process Description: Maintenance waste and expired reagents and chemicals are held here.

Related Sites/Structures: This site is part of the 222-S Analytical Laboratory.

Waste Type: Chemicals

Waste Description: Maintenance waste and expired reagents/chemicals are held here.

Code: 200-W-47 **Classification:** Accepted

Names: 200-W-47; 211-T Storage Pad 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/14/2000)

Type: Storage Pad (<90 day) **Start Date:**

Status: Inactive **End Date:**

Description: The 90 day storage area was removed when the T Plant Complex became a Treatment, Storage, and Disposal (TSD) facility. With the TSD Permit, mixed waste storage for the T Plant Complex was designated to be "a combination of paved and gravel surfaces and is surrounded by the fencing that encloses the 2706-T Building." An evaluation of the site in April 2000 showed no wastes stored in this area, but signs on the fence indicate that it is occasionally used for waste storage under the TSD Permit.

Location: The waste storage area is on the southwest side of the 2706-T Building.

Process Description: The T Plant Complex Part B Application lists the area surrounded by the fencing around 2607-T as a dangerous waste container storage area.

Related Sites/Structures: The site is part of the T Plant Complex TSD. Under the permit, mixed waste may be stored in both the 2607-TA Building (the former 200-W-50 site) and the area enclosed by the 2607-T fence (the former 200-W-47).

Code: 200-W-48 **Classification:** Accepted

Names: 200-W-48; 241-TX 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/6/2000)

Type: Storage Pad (<90 day) **Start Date:**

Status: Inactive **End Date:** 1/1/1993

Description: The 241-TX Tank Farm 90-Day Waste Accumulation Area has been inactive since October 1993, per the 90-day inspection records maintained by Environmental Waste Operations at the 209-E Building. The site was a self-contained conex box with a spill berm.

Location: The 90-day pad was located approximately 23 meters (75 feet) west of the 241-TX Tank Farm in a fenced area.

Code: 200-W-49 **Classification:** Accepted

Names: 200-W-49; 222-S Laboratory Room 2-D 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/14/2000)

Type: Storage Pad (<90 day) **Start Date:**

Status: Active **End Date:**

Description: The storage pad is located in Room 2D of the 222-S Analytical Laboratory, and holds solid and liquid mixed waste from laboratory sample analysis activities.

Location: The storage pad is in room 2D of the 222-S Laboratory.

Process Description: The pad holds solid and liquid mixed waste from laboratory sample analysis activities.

Related Sites/Structures: The storage pad is related to the 222-S Analytical Laboratory.

Waste Type: Chemicals

Waste Description: The pad holds solid and liquid mixed waste from laboratory sample analysis.

Code: 200-W-50 **Classification:** Accepted

Names: 200-W-50; 2706-T 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/14/2000)

Type: Storage Pad (<90 day) **Start Date:**

Status: Inactive **End Date:**

Description: The 90 day storage area was removed when the T Plant Complex became a Treatment, Storage, and Disposal (TSD) facility. With the TSD Permit, mixed waste storage for the T Plant Complex was designated to be "a combination of paved and gravel surfaces and is surrounded by the fencing that encloses the 2706-T Building." An evaluation of the site in April 2000 showed no wastes stored in this area, but signs on the fence indicate that it is occasionally used for waste storage under the TSD Permit.

Location: The waste storage area is adjacent to the west end of the 2706-T Building.

Process Description: The 2706-T Building is used to decontaminate railroad equipment, buses, trucks, automobiles, road building equipment, and process equipment.

Related Sites/Structures: The site is part of the T Plant Complex TSD. Under the permit, mixed waste may be stored in both the 2607-TA Building (the former 200-W-50 site) and the area enclosed by the 2607-T fence (the former 200-W-47).

Code: 200-W-56 **Classification:** Accepted
Names: 200-W-56; Debris North of 221-U **Reclassification:** Rejected (12/21/2004)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: An area of debris was identified during a 1997 RCRA Permit General Inspection tour. The site consists of a pile of dirt approximately 10 feet in diameter containing wire, fencing material, metal scrap, cable and grounding rods. The site is not marked or radiologically posted.
Location: The site is located approximately 150 yards north of 221-U.
Waste Type: Misc. Trash and Debris
Waste Description: Debris includes wire, fencing material, metal scrap, cable and grounding rods.

Code: 200-W-57 **Classification:** Not Accepted
Names: 200-W-57; Area West of 2714-U Fence; Excess Equipment Laydown Area Identified in RCRA General Inspection #200WFY97 Item #10 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site had been two excess equipment laydown areas, located outside the fenced 2714-U facility. One area was adjacent to the U Plant Chemical Spur railroad track. The second area was located adjacent to the western edge of the T Hopper storage area fence. A RCRA General Inspection identified the material as an area needing to be addressed. During the RCRA field inspection on October 8, 1997, the site was discussed with Bill Osborne and Dave Baker of ERC. The equipment was in the process of being salvaged and or recycled. The material has now been removed and is now an empty gravel area.
Location: The laydown area was located outside of the fenced T-Hopper Storage Area, on the west side of the 2714-U Building.
Related Sites/ Structures: The site was adjacent to the 2714-U storage facility building (sitecode 200-W-104).
Waste Type: Equipment
Waste Description: The equipment included electric motors, miscellaneous piping, heavy equipment parts, metal screen, wood, fiberglass vessels, an open steel tank, and scaffolding. There does not appear to be material that could be considered a dangerous waste in the area.

Code: 200-W-60 **Classification:** Accepted
Names: 200-W-60; 284-W Brine Pit; 284-W Salt Dissolving Pit and Brine Pump Pit **Reclassification:** Rejected (4/20/2000)
Type: Sump **Start Date:** 1/1/1942
Status: Inactive **End Date:** 1/1/1995
Description: The brine pit is no longer visible. It was demolished into itself and backfilled with gravel in 1999. It is not marked or posted. The two salt dissolving pits each had inner dimensions of 4.3 meters (14 feet) long by 2.4 meters (8 feet) wide by 2.8 meters (9.25 feet) tall. They had a design high water line 2.4 meters (7.75 feet) from the pit bottom. An overflow slot connecting the two dissolving pits was located 0.3 meters (1 foot) above the high water line. The bottom of

each pit was filled with a 12.7 centimeter (5 inch layer) of 1.3 to 2.6 centimeter (1/2 to 1 inch) gravel topped by a 17.8 centimeter (7 inch) layer of 0.3 to 0.6 centimeter (1/8 to 1/4 inch) gravel. The dissolving pits each had a 2.4 meter (8 foot) by 0.9 meter (3 feet) opening at the top for receiving salt. Each pit has a capacity of 23,600 kilograms (52,000 pounds) of salt. The brine pump pit was located adjacent to the two salt dissolving pits. The pit was 3.3 meters (10.67 feet) long by 2.2 meters (7.33 feet) wide by 2.1 meters (7 feet) deep. It held two pumps and associated piping (all brass) for the brine system. The floor of the pump pit sloped toward a 46 by 46 by 46 centimeter (18 by 18 by 18 inch) sump in a corner.

Location: The brine pit was located southwest of the 284-W Powerhouse.

Process Description: The salt dissolving pits and brine pump pit were part of a single below-grade concrete structure that provided brine for the 284-W Powerhouse. The brine was used to regenerate the ion exchange demineralizers that were part of the powerhouse water treatment system. The brine was created by adding water to the salt in the dissolving pit. As the water passed through the salt, the solution became saturated. The brine passed through the layers of gravel which filtered out salt crystals and other particles. The filtered brine was then drawn off by a pipe connecting to the adjacent brine pump pit. A float valve was used to maintain the water/brine level.

Related Sites/ Structures: The site is associated with the 284-W Powerhouse.

Waste Type: Demolition and Inert Waste

Waste Description: The concrete structure was cleaned out, demolished, and buried in place.

Code: 200-W-61

Classification: Accepted

Names: 200-W-61; 284 Powerhouse Coal Ramp Washdown Pit; Miscellaneous Stream #471; 200 West Powerhouse Coal Ramp Washdown Pit

Reclassification: Rejected (4/20/2000)

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date: 1/1/1995

Description: The pit is partially filled in with tumbleweeds and surrounded with metal fence posts and a light chain wire. It is adjacent to a concrete pad, which is next to the railroad track and coal off-loading chute.

Location: The washdown pit is west of the 200 West Powerhouse and coal ramp.

Process Description: The powerhouse coal ramp was washed down periodically. The washdown water was collected in three sumps. During the summer months, the sumps were pumped approximately two times per week, discharging the water into the washdown pit. During the winter months, the sumps were pumped two times per day.

Related Sites/ Structures: The pit is associated with the 284-W Powerhouse.

Waste Type: Water

Waste Description: The pit received water from the sumps that collected coal ramp washdown water.

Code: 200-W-62

Classification: Accepted

Names: 200-W-62; 200 West Powerhouse Coal Pile **Reclassification:** Rejected (6/18/2008)
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:** 1/1/1995

Description: The ground surface is covered with remnants of coal. Very little vegetation is growing, only small tumbleweeds. The north side is bordered by a concrete wall. Near the wall is a wooden structure, about 4 meters (12 feet) square and 15 centimeters (6 inches) high, covering the hole used to feed coal to the conveyor belt.

Location: The pile was located west of the powerhouse and south of the coal ramp conveyor belt.

Process Description: Large piles of coal had been stored in this area to fuel the 284-W Powerhouse. The powerhouse was shut down in 1995. Most of the coal pile has been removed.

Related Sites/ Structures: The site is associated with the 284-W Powerhouse.

Waste Type: Demolition and Inert Waste
Waste Description: A waste determination for Anthracite (Anthrafil) was performed in 1994. A waste determination for bituminous coal dust was performed in 1996. Both waste streams were determined to be nondangerous.

Code: 200-W-65 **Classification:** Not Accepted
Names: 200-W-65; Abandoned Water System Pump Vault; Concrete Vault Northwest of WRAP; Water Pumping Station Vault **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Inactive **End Date:**

Description: The structure is in the undeveloped land in the northwest corner of the 200 West Area. It is a concrete box measuring approximately 3 meters (10 feet) by 3 meters (10 feet) with a smaller concrete curbed structure rising from the center. There are two pipe penetrations and a drain in the floor of the box. A steel grate covers the top. There is an electrical conduit penetrating the wall of the structure and a concrete pump pad. It appears to be an old, abandoned water pumping station for irrigation or dust control.

Location: The site is located in the northwest corner of 200 West Area, approximately 0.46 kilometers (0.75 miles) northwest of the WRAP facility. It is adjacent to a gravel road (jeep trail).

Process Description: The structure appears to be part of a Pre-Hanford irrigation system or part of an early Hanford construction dust control system.

Waste Type: Misc. Trash and Debris
Waste Description: Concrete

Code: 200-W-66 **Classification:** Not Accepted
Names: 200-W-66; Oil Spill at JCI Annex Feeding 283-W/262-WC **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:** 1/1/1998

Description: The contaminated soil was removed and the site has been backfilled to grade level with crushed gravel on 12/29/98. No visual evidence of diesel stained soil and no diesel fumes were observed a few days later, during an inspection on 1/4/99.

Location: The site is located between the 283W and the 284W buildings, just north of 20th street. The 283BA boiler annex fuel tank is located just north of the site.

Release Description: Diesel fuel is delivered to JCI 200 east and west boiler annexes by RH Smith Distributing. While delivering fuel to the 283W annex a faulty cam-lock on the dispensing hose at the tank trailer caused fuel to spill on the ground. The RH Smith delivery driver initially estimated the spill to be 3-5 gallons. Notification was made to RH Smith's main office as well as JCI's Operations Supervisor, Mr. Tim Cook. With the initial estimate being less than the required reporting quantity of 10 gallons, no further notifications were made. JCI Operations Supervisor and RH Smith management instructed personnel to apply absorbent to collect and dispose of spilled fuel. This initial estimate of the amount of fuel spilled proved misleading due to the snow and ice present on the ground. Over the weekend of 12/26/1998, a warming trend resulted in the snow and ice to dissipate. On Monday 12/28/1998 a JCI Operator identified diesel fuel still being present. The JCI Operator contacted Mr. Cook who then re-appraised the situation. Through this re-evaluation it was determined that approximately 30 gallons of diesel fuel spilled onto the ground, from the base of the annex fuel tank approximately ten feet southward. The entire area of the spill is located on JCI leased property.

Related Sites/Structures: The spill is related to the 283W-BA boiler annex fuel tank. The tank is periodically filled via tanker truck.

Waste Type: Soil

Waste Description: The waste is diesel contaminated soil. The type of diesel spilled was 70% Low Sulfur Diesel Dyed number 2 and 30% Low Sulfur Strove Dyed number 1. The contaminated soil was excavated and backfilled with clean fill to grade level by R.H. Smith Distributing. R.H. Smith Distributing has contracted White Shield Environmental of Grandview, WA to remediate the contaminated soil. White Shield Environmental has recommended the Alpha bioremediation process to treat the contaminated soil that was removed on 12/29/98.

Code: 200-W-68 **Classification:** Not Accepted

Names: 200-W-68; Historic Disposal Site; RCRA General Inspection Report 200WFY99 Item #3 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a small area, measuring 4.6 by 3 meters (15 by 10 feet), that contains rusted electrical equipment. The material includes conduit, a light reflector, a space heater, a vent pipe, a little broken glass, and some pieces of charcoal. None of the equipment would have held liquids such as cooling oils or PCBs. One rock appears to have been fire cracked, but there is no discoloration of the soil. The vegetation at the site matches the surrounding area.

Location: The site is about 25 meters west of Albany Road and 130 meters north of 13th Avenue, and is visible from the road.

Waste Type: Misc. Trash and Debris

Waste Description: The wastes consist of pieces of rusted electrical equipment, with small amounts of broken glass and charcoal. None of the electrical pieces would have held liquids.

Code: 200-W-69 **Classification:** Accepted

Names: 200-W-69; 222-S Laboratory Complex**Reclassification:** None**Type:** Laboratory**Start Date:** 1/1/1951**Status:** Active**End Date:**

Description: The 222-S Laboratory Complex is made up of the following components, several of which have separate WIDS entries (such as the components of the Treatment, Storage, and Disposal (TSD) facility): - The 222-S Analytical Laboratory - The 222-S Dangerous and Mixed Waste Storage Area (DMWSA), a storage unit - The 219-S Waste Handling Facility, which contains the 219-S-101, 102, 103, and 104 storage tanks, - The 222-SA Standards Laboratory, - The 296-S-21 (active), 219-S-16 (active), 296-S-23 (active), and 296-S-13 (inactive) Stacks. The 222-S Complex buildings were constructed in 1950 and 1951 to provide analytical chemistry services for the Reduction-Oxidation (REDOX) Plant. Currently, the 222-S Complex supports a large array of facilities and programs on the Hanford Site with analytical chemistry services. The 222-S Laboratory is a two-story building in the southeast corner of the 200 West Area. The first floor is divided into three general areas. The west end holds the lunchroom, offices, and locker rooms, which are maintained free of radioactive and dangerous materials. The central section contains laboratories and service areas for work with radioactive and/or dangerous materials. Off the north side of the central section, on the outside of the building, is the 222-S Dangerous and Mixed Waste Storage Area. The east end, also called the multi-curie section, contains laboratories, hot cells, and service areas for work with radioactive samples. All first floor sinks, hood drains, drinking water fountains, equipment cooling water, and steam condensate from radioactive areas drain to the 207-SL Retention Basin. The basins are a non-radioactive, non-hazardous facility. Mixed waste effluents drain to the 219-S Waste Handling Facility. The second floor of the 222-S Laboratory contains the ventilation supply fans, supply and exhaust ductwork, ventilation system operation and control room, and storage areas. All floor drains, steam condensate overflow drains and the demineralized water system drains empty into the 207-SL Retention Basins. The 222-S basement contains service piping, vacuum pumps, the counting room areas, an instrument maintenance shop, and a scanning electron microscope. Effluents from the cold tunnel sumps are discharged to the 207-SL Retention Basins and effluents from the hot tunnel sumps discharge to the 219-S Waste Handling Facility. The supply water for the 222-S Laboratory consists of raw and sanitary water and steam. The raw water is primarily used in the first floor fire sprinkler system, and is less than 1 percent of the waste streams that discharge to the 207-SL Retention Basins. Sanitary water is used for all the other fire sprinkler systems, lab sinks, and hot cells. The sanitary water is estimated to contribute about 85 percent of the waste stream to the 207-SL Retention Basins, and steam condensate is the remaining approximately 15 percent. The 222-S Dangerous and Mixed Waste Storage Area is part of the 222-S Laboratory Complex TSD, number TS-2-I, and WIDS site code 222-SD. It is located on the north side of the 222-S Laboratory building. Also part of the TSD are Room 2B (site 200-W-76), Room 4E, and the 219-S Storage Tanks (WIDS codes 219-S-101, 219-S-102, and 219-S-103, which includes tank 104). The 219-S Waste Handling Facility, off the northeast side of the 222-S Laboratory Building, receives liquid mixed waste through hot disposal sinks in the 222-S Laboratory. The waste flows from sink and hot cell drains through all-welded, corrosion-resistant piping to corrosion-resistant tanks located in a below-ground concrete vault in the 219-S facility. The underground portions of the piping are double-encased stainless steel with leak detection to ensure containment and notification if a leak should occur. Pipe connections to the tanks are above maximum liquid levels to avoid potential leaks. The area above the vault is covered with a permanent enclosure and the operating gallery, located north of the vault, contains instrumentation and controls. Adjacent to the operating gallery is the sample gallery which contains a hood that is used for sample analysis during waste transfers. Wastes sent to tanks 101 and 104 are transferred to tank 102, which is a transfer point to the appropriate storage tank in the Double-Shell Tank System. After treatment in tank 102, the waste is transferred through a double encased fiberglass line to Tank Farms via the 244-S Double Contained Receiver Tank (DCRT). Overflows from tanks 101 and 102 are collected in sump 7; overflows from tank 104 are collected in sump 9; intrusion liquids

in Cell B are collected in sump 6; and leaks in the Operating Gallery are collected in sump 8. The 222-SA Standards Laboratory is a five-wide trailer southeast of the 222-S Laboratory. The 222-SA Standards Laboratory prepares non-radioactive standards for the 222-S Laboratory and other analytical laboratories and is also used for non-radioactive development work. Packaged waste generated from the 222-SA Standards Laboratory is non-radioactive, non-dangerous waste, and is accumulated in satellite areas before shipment to the Central Waste Complex. Laboratory sink drains in 222-SA are transferred to the 207-SL Retention Basins. The 296-S-21 and 296-S-16 Stacks handle both radioactive and non-radioactive emissions. The 296-S-21 Stack exhausts emissions from the 222-S Laboratory after passing through HEPA filtration. The 296-S-16 Stack exhausts emissions from tanks 101, 102, and 104 in the 219-S Waste Handling Facility after passing through a de-entrainment filter and HEPA filter. Both the 296-S-21 and 296-S-16 stacks are record sampled for periodic confirmatory measurements. The 296-S-23 stack exhausts emissions from the 219-S Sample Gallery Hood. It is operated intermittently during waste transfers and the periodic confirmatory measurement consists of a bi-annual non-destructive assay (NDA) of the HEPA filter.

Location: The 222-S Laboratory Complex is on the north side of 10th Street, west of Beloit Ave, in the 200 West Area. The laboratory complex is south of REDOX.

Process Description: The 222-S Laboratory was originally built to support the REDOX plutonium separation process operation in the 202-S facility. After the REDOX process shut down, the laboratory continued to support other Hanford project analyses.

Related Sites/ Structures: Associated Structures: WIDS site code 222-SD, the 222-S Laboratory Storage Pad, is currently listed as a separate site in WIDS. However, it is a part of the TSD site as described in the Part B Permit. Site codes 219-S-101, 219-S-102, and 219-S-103 (which includes tank 104), are stainless steel tanks in a below grade concrete vault at the 219-S Waste Handling Facility, and are also part of the 222-S Laboratory TSD. Room 2B of the TSD is WIDS site code 200-W-76. Site code 200-W-49 (222-S Laboratory Room 2-D 90-Day Waste Accumulation Area) is a rejected site in WIDS. Ninety-Day Waste Accumulation Areas are specifically exempt from classification as waste sites in TPA-MP-14. Site code 218-W-7, 222-S Vault, is a carbon steel burial vault southeast of the 222-S Building. It received dry, packaged laboratory and sampler waste from the 222-S Laboratory. Site code UPR-200-W-137 is a duplicate of 218-W-7. Site code 216-S-19, 222-S Lab Swamp, 216-SL-1, REDOX Lab Swamp, was open from 1952 to 1984, and received miscellaneous wastes from laboratory hoods and decontamination sinks in the 222-S Laboratory Building via the 207-SL Retention Basins.

Waste Type: Chemicals

Waste Description: The 219-S Waste Handling Facility receives low-level aqueous mixed waste generated by the 222-S Analytical Laboratory, and is either intermediate-or high-activity waste. The waste is designated as dangerous because of the characteristic of corrosivity. Liquid organic waste is not accepted in the 219-S Waste Handling Facility.

Chemicals from the 222-S Analytical Laboratory are outdated or off-specification and are both liquid and solid.

Nonradioactive dangerous waste includes chemicals from the 222-SA Standards Laboratory and nonradioactive off-specification chemicals from the 222-S Analytical Laboratory. This waste is regulated as dangerous waste because individual waste chemical characteristics can include: solid or liquid; reactive with water; ignitable; reactive to form toxic gases; oxidizer; cyanide or sulfide bearing; corrosive; and toxic.

Liquid organic waste contains both nonradioactive and radioactive organic components, and results from organic analyses of volatile, semivolatle, pesticide, and polychlorinated biphenyl compounds during daily laboratory operations.

Occasional waste includes mixed and nonradioactive dangerous waste generated during sample analysis such as rags, paper towels, and contaminated gloves; waste oil generated from equipment maintenance; and mercury-contaminated materials such as bulbs and thermometers.

Returned samples come from off-site laboratories. The unused portions of analyzed samples are returned to the generator (the Hanford Site)

Code:	200-W-70	Classification:	Accepted
Names:	200-W-70; 2731 Burning Pit; Old Burn Pit Southeast of Z Plant; 200 West Original Burn Pit	Reclassification:	Rejected (5/31/2001)
Type:	Burn Pit	Start Date:	1/1/1944
Status:	Inactive	End Date:	1/1/1949
Description:	The site is no longer visible, marked, or posted. It can be seen in an aerial photo from 1948, and Hanford drawing H-2-10011. Its is just outside the current Z Plant fenced area. The location is a flat, graveled parking area, containing the tile field for septic system 2607-WB.		
Location:	The burn pit was located southeast of the 231-Z Facility. It is just outside the Z Plant fenced area, east of 234-5Z. A portion of the 216-Z-1 Ditch is adjacent to this burn pit.		
Process Description:	The open pit was used by the construction forces for burning non-contaminated scrap lumber and miscellaneous debris.		
Waste Type:	Construction Debris		
Waste Description:	The pit received miscellaneous debris and scrap lumber during early 200 Area construction projects. In 2004, some transite material was identified. Transite is considered an asbestos-containing material. The asbestos is in a non-friable state.		

Code:	200-W-72	Classification:	Not Accepted
Names:	200-W-72; 200-ZP-1 Pump and Treat Unplanned Release	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/2000
Status:	Inactive	End Date:	
Description:	There is no visual evidence of the release.		
Location:	The 200-ZP-1 Pump and Treat system equipment is located northwest of the 231-Z Building in the 200 West Area.		
Release Description:	On April 13, 2000, a line break at the 200-ZP-1 Pump and Treat system facility caused approximately 87,400 liters (23,000 gallons) of contaminated water to spill inside the building. Most of the water was contained within the building, but some leaked into the electrical vaults. The water was recovered with pumps and transported to Modu-tanks. The CERCLA Reportable quantity for this contaminant is 10 pounds. Only 3.5 parts per million or 0.7 pounds of carbon tetrachloride was calculated to be in the 23,000 gallons of water. Therefore, this was a non-reportable incident.		
Process Description:	The 200-ZP-1 Pump and Treat system is used to pump groundwater that is contaminated with carbon tetrachloride and treat it before returning it to the ground.		
Waste Type:	Water		

Waste Description: The waste was groundwater containing a total of 0.7 pounds of carbon tetrachloride.

Code: 200-W-74 **Classification:** Not Accepted
Names: 200-W-74; 90 Day Storage Area East Side of 622 F **Reclassification:** None
Type: Storage Pad (<90 day) **Start Date:** 1/1/2000
Status: Inactive **End Date:** 1/1/2000
Description: This is a duplicate of site 600-267; the site number was used in error. The pad, inside a metal shed, has been closed.
Location: The site was located on the east side of the 622 F Building (Weather Station).
Related Sites/Structures: Site 600-267 is the correct side code for this closed 90 Day Accumulation Area.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description:

Code: 200-W-76 **Classification:** Accepted
Names: 200-W-76; Room 2B 222-S Laboratory TSD **Reclassification:** None
Type: Storage **Start Date:** 1/1/1951
Status: Active **End Date:**
Description: The north end of Room 2B in the 222-S Laboratory is partitioned off as a Treatment, Storage, and Disposal (TSD) area using a locked accordion style gate to prevent unauthorized access.
Location: The site is located inside the 222-S Laboratory facility.
Process Description: The Room 2B TSD provides container storage of solid and liquid mixed waste until the waste can be transferred to another TSD unit. Hood 16, within Room 2B, is the introduction point for transfer of liquid mixed waste from containers to the 219-S Waste Handling Facility. Mixed waste exceeding personnel protection radiological levels during transfer are introduced into the 219-S Waste Handling Facility via drains in hot cells instead of Hood 16.
Related Sites/Structures: Room 2B is part of the 222-S Laboratory TSD, which also includes the 219-S Tanks, which are WIDS sites 219-S-101, 219-S-102, and 219-S-103 (site 219-S-103 includes both tanks 103 and 104) and the 222-S Dangerous and Mixed Waste Storage Area, which is WIDS site 222-SD.
Waste Type: Chemicals
Waste Description:

Code: 200-W-91 **Classification:** Accepted
Names: 200-W-91; Underground Radioactive Material Area Adjacent to the North Side of 241-U Tank Farm **Reclassification:** Consolidated (6/13/2002)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**

Description: The site is a large, irregular shaped area. The area has been covered with clean gravel and posted with Underground Radioactive Material signs. The 2607-WUT sanitary tile field is located adjacent to the western edge of this stabilized zone. The area was surveyed with GPS in 2009. The size and shape of the posted area is larger than the area reported in 1995. The waste site was consolidated into 200-W-95.

Location: The site is located adjacent to the north fenceline of 241-U Tank Farm, west of Camden Avenue.

Release Description: The routine tank farm perimeter surveys were used to trace the radiological history of the contamination on the northeast corner of 241-U Tank Farm. Specks of contamination were documented on the May 1983 and May 1984 surveys, with contamination levels ranging from 500 to 20,000 counts per minute. In September 1986, the area was surrounded with radiation rope and posted with Surface Contamination Area signs. The Surface Contamination Area is documented on subsequent surveys through November 1994. On the May 1995 survey, the area is documented as an Underground Radioactive Material area.

Related Sites/ Structures: The site is associated with the 241-U Tank Farm and has been Consolidated with the 241-U Tank Farm contaminated soil sitecode 200-W-95.

Waste Type: Soil

Waste

Description:

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: 200-W-103

Classification: Not Accepted

Names: 200-W-103; 201-W Concrete Silo

Reclassification: None

Type: Experiment/Test Site

Start Date:

Status: Inactive

End Date:

Description: The structure is a concrete silo. The silo is marked with painted lines, dividing it into rows and sections. The rows are labeled A, B, C, D, and E. The sections are labeled 1 through 10. Electronic sensing devices are embedded into some of the concrete sections. A white, cylindrical liner is standing next to the silo.

Location: The site is located in 200 West Area, on the north side of 13th Street near Albany Ave. It is inside the 201-W facility fence.

Process Description: The silo was constructed as a feasibility test for aboveground, dry waste storage. No waste was ever stored at this site. The test was observing the durability of the concrete silo and the steel liner as it was exposed to the elements over time. The silo has been abandoned. The electronic sensors embedded into the concrete are no longer functioning.

Waste Type: Demolition and Inert Waste

Waste Description: This was a test facility that did not receive any waste.

Description:

Code: 200-W-104

Classification: Accepted

Names: 200-W-104; 2714-U Building; 2714-U Foundation; UO3 Storage Warehouse

Reclassification: None

Type: Foundation **Start Date:**

Status: Inactive **End Date:** 1/1/2005

Description: The site was a metal building. The building had been posted with Contamination Area, Radioactive Material Area signs. The 2714-U and 275-UR buildings were demolished in 2005. The 2714-U foundation is posted with Underground Radioactive Material signs. (see sitecode 200-W-87)

Location: The building was located northwest of the 221-U canyon facility.

Process Description: The 2714-U Storage Facility had been used to store material related to the Uranium Trioxide operations occurring in 224-U and some items for the Plutonium Finishing Plant. Before being demolished, the main incoming power lines were disconnected at the building. The doors were locked and bird netting was placed at the entrance's on both sides of the building for pest control.

Waste Type: Soil

Waste Description: After the building was demolished in 2005, the foundation was posted with Underground Radioactive Material signs.

Waste Type: Equipment

Waste Description: The building had been used to store contaminated equipment related to the Uranium Trioxide operation. Two water shield doors (water drained) were also being stored for the Plutonium Finishing Plant facility along with some miscellaneous metal piping.

Code: 200-W-112 **Classification:** Accepted

Names: 200-W-112; Miscellaneous Stream #52; Steam Condensate **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1995

Description: The site is a 0.9 meter (3 foot) diameter, below ground, cement drain structure. An overhead, insulated pipe enters the top of the drain structure. The drain is currently located within a posted radiological Contamination Area.

Location: The drain is located approximately 1.8 meters (6 feet) south of the southwest corner of the 224-U building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 224-U facility.

Waste Type: Steam Condensate

Waste Description: The drain received non-contaminated steam condensate from the 224-U facility. The steam source has been abandoned.

Code: 200-W-113 **Classification:** Accepted

Names: 200-W-113; Miscellaneous Stream #54; North Steam Pit **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1995

Description: The drain structure is covered with a yellow metal lid. The lid is labeled with "North Steam Pit" and "Confined Space" signs. The site is surrounded with metal posts and chain.

Location: The drain is located approximately 4.5 meters (15 feet) from the northwest corner of the 224-U building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 224-U building.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate. The steam source has been eliminated.

Code: 200-W-115 **Classification:** Accepted

Names: 200-W-115; Miscellaneous Stream #138; Steam Condensate MSS-003; 063 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 5.08 centimeter (2 inch) pipe and three 2.54 centimeter (1 inch) diameter pipes extending into a broken, 1.2 meter (4 foot) diameter cement french drain structure. The pipe is labeled as MSS-003.

Location: The drain is located northeast of the 221-U Building and is northeast of the 241-WR Vault.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. This was a seasonal discharge.

Waste Type: Steam Condensate

Waste Description: The drain received non-contaminated steam condensate.

Code: 200-W-116 **Classification:** Accepted

Names: 200-W-116; Miscellaneous Stream #139; Steam Condensate MSS-TRP-004 **Reclassification:** None

from the flange and has a 2.5 centimeter (1 inch) diameter pipe extending to a hole in the ground, approximately 2 feet north of the cement drain structure.

Location: The site is located inside the 224-U facility fence, in the southeast corner of the fenced area. It is approximately 1.8 meters (6 feet) north of 16th Street.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received non-contaminated steam condensate. The source has been abandoned.

Code: 200-W-120 **Classification:** Accepted

Names: 200-W-120; Miscellaneous Steam Trap 008; Miscellaneous Stream #143 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is a 1.8 meter (4 foot) diameter, cement drain structure. A 2.5 centimeter (1 inch) pipe extends from the flange of the overhead steam line to the drain structure. The site is labeled with a tag that identifies it as MSS-TRP-008.

Location: The site is a steam trap located outside the 224-U facility fence, on the south side of 16th Street.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The drain received non-contaminated steam condensate.

Description:

Code: 200-W-121 **Classification:** Accepted

Names: 200-W-121; Miscellaneous Steam Trap 009; Miscellaneous Stream #144 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 0.025 meter (one inch) diameter pipe extending diagonally into a 0.762 meter (30 inch) diameter cement french drain structure. The drain is filled with rock and dirt. The steam trap is labeled MSS-TRP-009.

Location: The site is located south of 16th Street, southwest of the 221-U building.

Process Steam was produced from sanitary water that had been sent through a water softener system to

Description: remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste The drain received non-contaminated steam condensate.

Description:

Code: 200-W-122

Classification: Accepted

Names: 200-W-122; Miscellaneous Steam Trap 014;
Miscellaneous Stream #145

Reclassification: None

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date: 1/1/1998

Description: An overhead steam line crosses the railroad track leading to the REDOX facility. It was constructed approximately 20 feet above the track. A scaffold has been constructed at the steam trap location. A tag identifies this location as MSS-TRP-014. A 0,76 meter (2.5 foot) diameter, vitrified clay pipe drain structure is located below the steam line. A 2.54 centimeter (one inch) diameter pipe extends from the overhead steam line to the vitrified clay pipe french drain structure.

Location: The site is located south of 16th Street, southwest of the 221-U building. It is located adjacent to the railroad track that leads to the REDOX facility.

Process
Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste The site received non-contaminated steam condensate.

Description:

Code: 200-W-123

Classification: Not Accepted

Names: 200-W-123; Gravel Pit 35

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:

Status: Active

End Date:

Description: The site is a large area of shallow excavations.

Location: The site is located south of 23rd Street and east of Dayton Ave. It is west of the 218-W-4A Burial Ground.

Process
Description: The site is used to provide clean backfill material for small excavations.

Waste Type: Soil

Waste The site is a source of clean backfill material. No waste is stored or deposited at this site.

Description:

Code: 200-W-124 **Classification:** Not Accepted (Proposed)**Names:** 200-W-124; PFP Stormwater Pond; Z-9 Pond **Reclassification:** None**Type:** Pond **Start Date:****Status:** Inactive **End Date:****Description:** The pond is no longer visible. The site is not marked or posted.**Location:** The pond was located at the end of a corrugated metal pipe, north and east of the 216-Z-9 crib.**Process Description:** Overflow effluent from the elevated water tank, inside the Z Plant fence, was connected to a 12 inch corrugated water line. Some stormwater drainage may have also contributed to the effluent. The pond developed at the terminus of the water line during the 1960's. The pond is visible in historical 200 West photographs dated 1963 and 1969. A drawing, dated 1971, states the 12 inch corrugated line is abandoned. The pond dried up after the line was blanked off. The effluent was originally rerouted to the 216-Z-11 ditch and later routed to the 216-Z-21 basin.**Waste Type:** Stormwater Runoff**Waste Description:** The pond area received stormwater and water tank overflow effluent.

Code: 200-W-133-PL **Classification:** Not Accepted**Names:** 200-W-133-PL; V682 Spare Line **Reclassification:** None**Type:** Direct Buried Tank Farm Pipeline **Start Date:** 1/1/1944**Status:** Inactive **End Date:****Description:** The site is a DUPLICATE of lines documented in 200-W-130-PL.**Location:** The pipeline is located inside the 241-T tank farm, but extends south of the 241-T fenceline.**Process Description:** The pipeline is considered a spare line. It is an 8.8 centimeter (3.5 inch) diameter, stainless steel pipeline that extends out of the 241-T-152 diversion box and is capped south of 241-T, beyond the tank farm fence.**Related Sites/ Structures:** The site is associated with 241-T-152 diversion box and 200-W-130-PL.

Code: 200-W-134-PL **Classification:** Not Accepted**Names:** 200-W-134-PL; V683 Spare Line **Reclassification:** None**Type:** Direct Buried Tank Farm Pipeline **Start Date:** 1/1/1944**Status:** Inactive **End Date:****Description:** The site is a DUPLICATE of lines documented in 200-W-130-PL.**Location:** The pipeline is located inside the 241-T tank farm, but extends south of the 241-T fenceline.**Process Description:** The pipeline is considered a spare line. It is an 8.8 centimeter (3.5 inch) diameter, stainless steel pipeline that extends out of the 241-T-152 diversion box and is capped south of 241-T, beyond the tank farm fence.

Related Sites/ Structures: The site is associated with 241-T-152 diversion box and 200-W-130-PL.

Code: 200-W-135-PL	Classification: Not Accepted
Names: 200-W-135-PL; Spare Line; V662	Reclassification: None
Type: Direct Buried Tank Farm Pipeline	Start Date: 1/1/1944
Status: Inactive	End Date:
Description: The site is a DUPLICATE of lines documented in 200-W-130-PL.	
Location: The pipeline is located inside and outside the 241-T Tank Farm fence.	
Process Description: Line V662 is a 7.6 centimeter (3 inch diameter), stainless steel spare pipeline. It is connected to the 241-T-151 Diversion Box. It was capped south of the diversion box, outside the tank farm fence.	

Related Sites/ Structures: Associated with 241-T-151 Diversion Box and 200-W-130-PL.

Code: 200-W-147-PL	Classification: Accepted
Names: 200-W-147-PL; Pipeline from 207-SL to 216-S-19 Pond	Reclassification: Rejected (10/19/2010)
Type: Radioactive Process Sewer	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1984
Description: Due to the restructuring of Operable Units, as described in the Tentative Agreement for Central Plateau Cleanup, this pipeline has been split into segments (see 200-W-147-PL-A and 200-W-147-PL-B). The site is an underground 20 centimeter (8 inch) diameter vitrified clay pipe, extending from the 207-SL retention basin to the 216-S-19 pond.	
Location: This portion of the pipeline extends from the 207-SL basin to the Outer Area boundary. The majority of the original pipeline site is located south of the 200 West Area fence.	
Process Description: The pipeline carried waste from the 222-S and 202-S facilities to the 216-S-19 Pond via the 207-SL Retention Basin.	

Related Sites/ Structures: The pipeline is associated with the 216-S-19 Pond, 200-W-147-PL-A and 200-W-147-PL-B.

Code: 200-W-155-PL	Classification: Accepted
Names: 200-W-155-PL; Pipeline from 2904-S-160 Control Structure to 216-S-16 Ditch	Reclassification: Rejected (10/19/2010)
Type: Radioactive Process Sewer	Start Date:
Status: Inactive	End Date:
Description: Due to the restructuring of Operable Units, as described in the Tentative Agreement for Central Plateau Cleanup, this pipeline has been split into segments (see 200-W-155-PL-A and 200-W-155-PL-B). The waste site is an underground 61 centimeter (24 inch) diameter vitrified clay pipe. It extends from the 2904-S-160 Control Structure to the head end of the 216-S-16 Ditch.	

Location: The pipeline is located outside the 200 West Area perimeter fence, southwest of the 207-S Retention Basin.

Process Description: In 1954, the original 61 centimeter (24 inch) process sewer line (sitecode 200-W-152-PL) was plugged and the flow to the 216-S-17 Pond was abandoned. The effluent was directed to the 216-S-6 crib and later to the 216-S-16 Pond via the 2904-S-160 Control Structure. Flow could be directed to 216-S-6 crib at Manhole 8 via pipeline 200-W-156-PL.

Related Sites/ Structures: The site is associated with the REDOX cooling water effluent stream, the 2904-S-160 Control Structure, the 216-S-16 Ditch and Pond and the 216-S-6 crib.

Code: 200-W-189-PL **Classification:** Accepted

Names: 200-W-189-PL; Lines SNL-5350 and SNL-5351; **Reclassification:** None
Transfer Lines from 219-S to 241-SY Tank Farm

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Active **End Date:**

Description: The waste site is two underground, 5 centimeter (2 inch) diameter fiberglass pipelines. Each line is double contained inside a 10 centimeter (4 inch) pipe.

Location: The pipeline extends between 219-S, located southeast of REDOX, and the 241-SY Tank Farm.

Related Sites/ Structures: The pipeline is associated with the 219-S building and tanks 241-SY-101 and 241-SY-103 in the 241-SY Tank Farm.

Code: 200-W-207-PL-B **Classification:** Accepted

Names: 200-W-207-PL-B; PFP Process Sewer Segements **Reclassification:** None
Connecting to TEDF System

Type: Radioactive Process Sewer **Start Date:**

Status: Active **End Date:**

Description: The waste site is multiple, active branches of underground vitrified clay pipe that originate at the 235-5Z, 232-Z, 242-Z, 236-Z and 291-Z buildings and the process sewer manholes.

Location: The process sewer extends south and east from the 234-5Z and supporting facilities. The active portion of the process sewer diverts to the Treated Effluent Disposal Facility (TEDF) pipeline near manhole Z8.

Process Description: The process sewer originally fed the 216-Z-1, 216-Z-11 and 216-Z-19 ditches. Later, it fed the 216-Z-20 ditch (see 200-W-207-PL-A). In 1981, the process sewer was reconfigured to accommodate the construction of the 232-Z building. Some of the original sections of process sewer piping were removed during the construction of the 232-Z building.

Many of the process sewer branches are active and were connected to the Treated Effluent Disposal Facility (TEDF) system in 1995. (see H-2-140332 and H-2-140336). Parts of the process sewer were lined before connecting to the TEDF system. Some branches of the sewer are not radiologically contaminated, but other portions are known to have carried radioactive waste.

The active process sewer was tied into the Treated Effluent Disposal Facility (TEDF) system in 1995 (see WIDS sitecode 600-291-PL) and by-passed the ditches. The effluent was redirected to the TEDF system at manhole Z8.

Related Sites/ This process sewer is associated with the TEDF pipeline (WIDS sitecode 600-291)

Structures:

Code: 200-W-211-PL **Classification:** Accepted

Names: 200-W-211-PL; 207-SL Retention Basin Sewer Pipelines; Pipelines from Boiler Annex and Pump Lift Station to 207-SL Basin; Retention Waste Sewer from 219-S and 222-S to 207-SL Basin **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Active **End Date:**

Description: The waste site is four underground effluent pipelines that feed the 207-SL Retention Basin (see subsites and site comment). The original feed line from 222-S laboratory to the 207-SL basin was a 20 centimeter (8 inch) vitrified clay pipeline and a 15 centimeter (6 inch) diameter vitrified clay line from 219-S. The VCP lines are encased in poured concrete. More recently, a 4 centimeter (1.5 inch) diameter carbon steel line from the boiler annex and a 5 centimeter (2 inch) diameter plastic pipe from a pump lift station were added and also feed the 207-SL basin.

Location: The 207-SL basin is located east of the 222-S laboratory. The three effluent lines enter the west side of the 207-SL basin.

Related Sites/ The pipelines are associated with the 222-S Laboratory, 219-S, the 222-S Boiler Annex and the **Structures:** 222-SA pump lift station.

This Site has the Following SubSites:

Code: 200-W-211-PL:1

Names: 200-W-211-PL:1; 8-Inch VCP and Plastic (Pipe-in-Pipe) Line from 222-S to 207-SL

Code: 200-W-211-PL:2

Names: 200-W-211-PL:2; 6-Inch VCP Line from 219-S to 207-SL Pipeline

Code: 200-W-211-PL:3

Names: 200-W-211-PL:3; 1.5-Inch Carbon Steel Line from 222S Boiler Annex to 207-SL

Code: 200-W-211-PL:4

Names: 200-W-211-PL:4; 2-Inch PVC Pipe from Pump Lift Station to 207-SL

Code: 200-W-211-PL:1 **Classification:** Accepted

Names: 200-W-211-PL:1; 8-Inch VCP and Plastic (Pipe-in-Pipe) Line from 222-S to 207-SL **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Active **End Date:**

The SubSite is Part Of:

Code: 200-W-211-PL

Names: 200-W-211-PL; 207-SL Retention Basin Sewer Pipelines; Pipelines from Boiler Annex and Pump Lift Station to 207-SL Basin; Retention Waste Sewer from 219-S and 222-S to 207-SL Basin

Code: 200-W-211-PL:2 **Classification:** Accepted

Names: 200-W-211-PL:2; 6-Inch VCP Line from 219-S to 207-SL Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**
Status: Active **End Date:**

The SubSite is Part Of:

Code: 200-W-211-PL
Names: 200-W-211-PL; 207-SL Retention Basin Sewer Pipelines; Pipelines from Boiler Annex and Pump Lift Station to 207-SL Basin; Retention Waste Sewer from 219-S and 222-S to 207-SL Basin

Code: 200-W-211-PL:3 **Classification:** Accepted
Names: 200-W-211-PL:3; 1.5-Inch Carbon Steel Line from 222S Boiler Annex to 207-SL **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Active **End Date:**

The SubSite is Part Of:

Code: 200-W-211-PL
Names: 200-W-211-PL; 207-SL Retention Basin Sewer Pipelines; Pipelines from Boiler Annex and Pump Lift Station to 207-SL Basin; Retention Waste Sewer from 219-S and 222-S to 207-SL Basin

Code: 200-W-211-PL:4 **Classification:** Accepted
Names: 200-W-211-PL:4; 2-Inch PVC Pipe from Pump Lift Station to 207-SL **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Active **End Date:**

The SubSite is Part Of:

Code: 200-W-211-PL
Names: 200-W-211-PL; 207-SL Retention Basin Sewer Pipelines; Pipelines from Boiler Annex and Pump Lift Station to 207-SL Basin; Retention Waste Sewer from 219-S and 222-S to 207-SL Basin

Code: 200-W-233 **Classification:** Accepted
Names: 200-W-233; Plutonium Finishing Plant (PFP) Treatment Unit **Reclassification:** Closed Out (2/8/2005)
Type: Process Unit/Plant **Start Date:** 1/1/1996
Status: Inactive **End Date:** 1/1/1996

Description: The Plutonium Finishing Plant (PFP) Treatment Unit is a glovebox HA-20MB, located in room 235B in the 234-5Z building.

Location: The 234-5Z building is located inside 200 West Area, near the intersection of 19th Street and Camden Ave.

Process Description: Glovebox HA-20MB supported the cementation process. Various forms of mixed waste were treated with the cementation process. Waste was mixed into standard cement material with water to form a slurry. The slurry was placed into 3 liter (0.8 gallon) billet cans and allowed to harden, creating a stable waste form.

Closure Info: In 2005, the glove box was cleaned out and verified to be Clean Closed. The part A Permit was closed on 2/8/2005.

Code: 213-W	Classification: Accepted
Names: 213-W; 213-W Compactor Facility	Reclassification: None
Type: Process Unit/Plant	Start Date: 1/1/1985
Status: Active	End Date:
Description: The 213-W is a pre-engineered, self-framing structure originally designed as the Dry Waste Compactor Facility. The building contains three rooms: an entry room, a package inspection room, and the computer room. The entry room opens into the compactor room through an airlock. Vehicle doors open from the compactor room to the inspection room, and from the inspection room to the building exterior.	
Location: The 213-W Facility is north of the 272-WA Building and west of the 2401-W Building.	
Process Description: The Waste Compactor system was used to compact uncompressed low-level waste to approximately 10% of its original volume. The waste was compacted directly into steel burial boxes. Beginning in 1985, this process operated sporadically. Compactor operations ceased about 1994. The facility was transferred to 200 West Tank Farms in 1995. The 213-W Building is now used for equipment storage and occasionally to repair contaminated instruments.	
Related Sites/ Structures: Structures associated with the facility include the 213-W-1 tank, the container Products Corporation Model B60 compactor, the facility exhaust and HEPA system, sample and monitoring systems, and the other facilities making up the central waste complex.	
Waste Type: Equipment	
Waste Description: The unit was used to compact low-level dry waste and occasion repairs of contaminated instruments. Residual contamination on the equipment is expected.	

Code: 213-W-1	Classification: Accepted
Names: 213-W-1; 213-W-TK-1; 213-W Compactor Facility Retention Tank	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1985
Status: Inactive	End Date: 1/1/1995
Description: The 213-W-TK-1 Retention Tank is a below grade steel tank. It was plumbed to the 213-W HVAC System, the 272-WA Service Garages, and the 213-W Compactor Room.	
Location: This tank is located east of the 213-W Compactor Facility, and north of the 272-WA Building.	
Process Description: The unit collected drainage from floor drains in the 213-W Compactor Room, and the 272-WA Service Garage. The tank also received heating ventilation and air conditioning condensate. Water was released from the tank if no radionuclides were found during analysis.	
Related Sites/ Structures: Structures associated with the tank include effluent drain lines, floor drains in the 272-WA Service Garages, the 213-W compactor room, and drains at the high-efficiency particulate air filter system.	
Waste Type: Water	
Waste Description: The unit was used to collect drainage water from 272-WA service garages, drainage from the compactor room floor, and condensate from the high-efficiency particulate air filter system. The unit had the possibility of containing radioactive wastes in the event that they were introduced into the process. The water was analyzed periodically for radioactive materials.	

After analysis, the water was released if no radioactive materials were present. The IMUST Checklist and Photo report, issued in April 1998, states the tank contains non-radioactive water.

Code: 218-W-4C ANNEX **Classification:** Not Accepted
Names: 218-W-4C ANNEX; Unused Portion of 218-W-4C Burial Ground **Reclassification:** None
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The annex area looks like a barren field. The area designated for additional waste trenches in the western portion of the 218-W-4C Burial ground was never used.
Location: The 218-W-4C annex section is located directly south of the 234-5 building, north of 16th Street.
Process Description: The 218-W-4C burial ground and annex were designed to contain up to 65 trenches. The main burial ground was designed to include forty-eight trenches, orientated east to west. The burial ground annex was designed to include seventeen trenches, running north to south. The burial ground annex area has never been used.
Related Sites/Structures: The 218-W-4C Annex is associated with WIDS sitecode 200-W-242, which documents a small amount of debris.

Code: 218-W-6 **Classification:** Accepted
Names: 218-W-6; 218-W-6 Burial Ground **Reclassification:** Closed Out (12/8/2011)
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The site had been delineated with light posts and chain. It is marked with signs that say "Danger - Keep Out - Authorized Personnel Only". The area had been designated as a RCRA burial ground, but never used for that purpose. It had been listed on the RCRA Part A Permit for the Low Level Burial Grounds. This waste site was administratively Closed Out in December 2011.
Location: The site is inside 200 West Area. The site extends south from 27th Street to north of the 218-W-1A Burial Ground and east to the 218-W-3AE Burial Ground.

Code: 2607-W2 **Classification:** Accepted
Names: 2607-W2 **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1980
Status: Inactive **End Date:** 1/1/1994
Description: The 2607-W2 Septic Tank is surrounded by posts with no radiation warning signs. This system was taken out of service and formally abandoned in 1994. The drainfield lines have been cut and the septic tank was filled with soil. The drainfield had a capacity of 785 gallons (2,970 liters) per day. A gravity tie-line was installed to connect this small system to a collection that

serves 2607-W1.

Location: This unit lies southwest of the main 200 West Area guard gate and southeast of the 2704-W Building.

Process Description: The 2607-W2 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 2709-W, the 2720-W and the 2701-WA Buildings.

Related Sites/ Structures: The 2607-W2 Septic Tank was associated with the 2709-W, the 2720-W and the 2701-WA Buildings.

Waste Type: Sanitary Sewage

Waste Description: The 2607-W2 septic system is currently inactive. This site was formally abandoned and filled with soil in 1994. Prior to 1994, this unit received sanitary sewer effluent at an estimated rate of 360 cubic feet (10.2 cubic meters) per day.

Code: 2607-W10 **Classification:** Accepted

Names: 2607-W10; MO-281 and MO-438; Septic Servicing 278-WA **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1993

Status: Active **End Date:**

Location: The 2607-W10 septic system is located west of Dayton Ave. and south of 19th Street.

Process Description: 2607-W10 septic services the 278-WA, MO-281 and MO-438 buildings.

Code: 2607-W11 **Classification:** Accepted

Names: 2607-W11; Septic Servicing MO-720 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1993

Status: Active **End Date:**

Location: The 2607-W11 septic system is located west of Dayton Ave. and south of 19th Street.

Process Description: The 2607-W11 septic system services MO-720.

Code: 2607-W12 **Classification:** Accepted

Names: 2607-W12; Septic Servicing MO-721 and MO-743 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1993

Status: Active **End Date:**

Location: The 2607-W12 septic system is located west of Dayton Ave. and south of 19th Street.

Process Description: The 2607-W12 septic system services MO-721 and MO-743.

Code: 2607-W14 **Classification:** Accepted

Names: 2607-W14; WRAP Facility Septic; 2336 Bldg. **Reclassification:** None

Description: underground lines from connecting the tanks and drain field to the mobile offices they serviced.

Location: The septic tanks are south of MO-016 (200 West - Z Plant Area). The drain field is south of MO-939.

Related Sites/ Structures: The septic system serviced mobile offices MO-016, MO-015, MO-017, MO-939, MO-032, MO-031. These trailers are outside of the Z-Plant fence line.

Waste Type: Sanitary Sewage

Waste Description: The system received sanitary waste from mobile offices outside of Z Plant.

Closure Info: The septic system was abandoned per the requirements of Washington Administrative Code 246-272-1851. All septage inside the tanks was removed and the empty tanks were filled to eliminate void spaces. Per an agreement with the Washington Department of Health, the septic system lids were left in place.

Code: 2607-WWA **Classification:** Not Accepted

Names: 2607-WWA; 2607-WWA Septic System **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1955

Status: Inactive **End Date:**

Description: This site does not exist as a separate site; it is likely an alias for 2607-WL.

Process Description: Septic Tank and drain fields are designed to accept and treat sanitary sewer effluent from associated structures.

Waste Type: Sanitary Sewage

Waste Description: The 2607-WWA Septic System was reported by Cramer (1987) to have received sanitary sewer effluent at estimated rate of 3.41 cubic meters (120.4 cubic feet) per day. However, this report is likely referring to 2607-WL.

Code: 2727-WA **Classification:** Accepted

Names: 2727-WA; 2727-WA SRE Sodium Storage Building **Reclassification:** Closed Out (2/22/1999)

Type: Storage **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1999

Description: The 2727-WA building was constructed to store sodium from the Sodium Reactor Experiment (SRE) reactor. The unit is a prefabricated Butler-type metal building with a concrete floor. All of the SRE sodium storage containers have been removed. The building's maximum process design capacity for container storage was 132,000 liters (35,000 gallons). When used for sodium storage, the containers were stored on noncombustible pallets and occupied approximately one quarter of the floor space in the building.

Location: The 2727-WA building is located in 200 West area, north of 16th Street and just east of the rail line.

Waste Type: Chemicals

Waste Description: The sodium had been used as primary coolant in an experimental reactor and was slightly contaminated. A regulatory analysis of the sodium concluded that it was not a dangerous or mixed waste. The sodium was held in 158, 208-liter (55-gallon) steel containers.

Closure Info: February, 1995, the 158 sodium-filled 208-liter (55-gallon) drums were overpacked into 322-

liter (85-gallon) drums and transferred to the South Alkali Metal (SAM) Storage Modules in the 200 West Central Waste Complex.

Code: 232-Z **Classification:** Accepted

Names: 232-Z; 232-Z Building Foundation; 232-Z Incineration Facility; 232-Z Incinerator; 232-Z Waste Incineration Facility **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1959

Status: Inactive **End Date:** 1/1/1976

Description: The 232-Z above grade structures were demolished to slab on grade in July 2006. All penetrations through the floor slab were plugged with grout or a fire block material (low density silicone elastomer) prior to building demolition. After building demolition, the floor slab was painted with Polymeric Barrier System (PBS) fixative and then covered with a minimum of 6 inches of gravel. The gravel covered slab is posted with Underground Radioactive Material signs. The underground ventilation ducting from the 232-Z Building to the 291-Z Building was filled with a controlled density fill (i.e., grout). The 232-Z incinerator building had been a concrete block structure with a slightly sloped roof. The building was divided into areas devoted to processing, storage, change rooms, chemical preparation, ventilation, and utility distribution. The building had two stories at the north end and a single story over the remaining portions.

Location: The building was located adjacent to the south side of 2736-ZB.

Process Description: The 232-Z Facility was built to remove plutonium from contaminated solid wastes by incineration and leaching in preparation for plutonium recovery.

Related Sites/Structures: Structures associated with the facility include internal glove boxes, incinerators, and leaching equipment. The building is related to other plutonium recovery and processing facilities at Z Plant.

Waste Type: Chemicals

Waste Description: There is stabilized contamination on the building surfaces, including low levels of alpha contamination.

This Site has the Following SubSites:

Code: 232-Z:1
Names: 232-Z:1; Building Foundation; 232-Z Facility Concrete Slab

Code: 232-Z:2
Names: 232-Z:2; 232-Z Underground Ventilation Duct

Code: 232-Z:3
Names: 232-Z:3; 232-Z Underground Drain Line to 241-Z

Code: 232-Z:1 **Classification:** Accepted

Names: 232-Z:1; Building Foundation; 232-Z Facility Concrete Slab **Reclassification:** None

Type: Process Unit/Plant **Start Date:**

Status: Inactive **End Date:**

Description: The 232-Z above grade structures were demolished to slab on grade in July 2006. All penetrations through the floor slab were plugged with grout or a fire block material (low density

silicone elastomer) prior to building demolition. The slab was painted with Polymeric Barrier System fixative, covered with gravel and posted with Underground Radioactive Material signs.

The SubSite is Part Of:

Code: 232-Z

Names: 232-Z; 232-Z Building Foundation; 232-Z Incineration Facility; 232-Z Incinerator; 232-Z Waste Incineration Facility

Code: 232-Z:2

Classification: Accepted

Names: 232-Z:2; 232-Z Underground Ventilation Duct

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: In 2006, the 60 and 91 centimeter (24 and 36 inch) diameter underground ventilation ducting from the 232-Z Building to the 291-Z Building was filled with a controlled density fill (i.e., grout).

The SubSite is Part Of:

Code: 232-Z

Names: 232-Z; 232-Z Building Foundation; 232-Z Incineration Facility; 232-Z Incinerator; 232-Z Waste Incineration Facility

Code: 232-Z:3

Classification: Accepted

Names: 232-Z:3; 232-Z Underground Drain Line to 241-Z

Reclassification: None

Type: Process Unit/Plant

Start Date:

Status: Inactive

End Date:

Description: The 7.6 centimeter (3 inch) diameter underground pipeline drained to the 241-Z facility tank D-6. Water that was removed from the buried three inch drain line was sampled. The water was generally measured at less than 10-3 Ci/mL alpha (M2300-06-010, 232-Z Building Final Slab-On-Grade Characterization Report).

The SubSite is Part Of:

Code: 232-Z

Names: 232-Z; 232-Z Building Foundation; 232-Z Incineration Facility; 232-Z Incinerator; 232-Z Waste Incineration Facility

Code: 234-5Z HWSA

Classification: Accepted

Names: 234-5Z HWSA; 234-5Z Hazardous Waste Storage Area

Reclassification: Rejected (9/14/2000)

Type: Storage Pad (<90 day)

Start Date: 1/1/1985

Status: Active

End Date:

Description: The unit consists of a portable steel building, similar to a conex box, with no windows and three doors that open to three internal bays. The conex box is located on an asphalt pad.

Location: The unit is located east of 234-5Z, along the inner security fence line, 15 meters (50 feet) east of the northeast corner of the 234-5Z Building (Z Plant).

Process Description: This unit provides a temporary staging area for hazardous wastes generated in the Plutonium Finishing Plant Complex.

Related Sites/ Structures: Structures related to this unit include the 234-5Z Facility and other facilities in the Plutonium Finishing Plant Complex that stage waste at the pad.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The unit stores containerized hazardous waste. Examples of waste previously stored at the facility include: halogenated solvents, thinners, paints, laboratory and process chemicals, flammable liquids, polychlorinated biphenyls, and refrigerants.

Code: 2607-Z8

Classification: Accepted

Names: 2607-Z8

Reclassification: Rejected (5/31/2001)

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Description: WIDS site 2607-Z8 was described in Cramer (1987) as a septic tank and associated drain field. However, it likely does not exist.

Location: This septic system has been described as being located along the fence southeast of the 234-5Z Building.

Waste Type: Sanitary Sewage

Waste Description: According to the Hanford Site Waste Management Units Report (Cramer, 1987), this unit received sanitary sewer effluent at an estimated rate of 0.75 cubic meters (26 cubic feet) per day in 1987.

Code: 300 IFBD

Classification: Accepted

Names: 300 IFBD; 300 Area Interim Filter Backwash Disposal

Reclassification: Rejected (1/27/1999)

Type: Depression/Pit (nonspecific)

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Description: This site was a temporary disposal area for filter backwash from the 300 Area Filter Water Plant. There is a large, depressed area on the east side of the Gravel Pit 6 property that forms a natural basin. There is a moderate amount of rabbit brush and grasses growing on it. There are no definite, visible signs that the area was used for backwash disposal. However, there are some truck tire tracks and evidence of some grayish, silty sand on the surface in some areas of the natural basin.

Location: The disposal area is located inside the Gravel Pit 6 property boundaries, south of the 300 Area Vitrification Test Site and west of the 300 Area. It is on the west side of Route 4 South. The depressed area believed to be the disposal site is on the east side of the property.

Process Description: The area was used to dispose of filter backwash material for four months (January through April) in 1987. Filter backwash effluent was trucked to this area.

Waste Type: Water

Waste Description: The unit received approximately 2,460,000 liters (650,000 gallons) of effluent from backwashing filters at the 300 Area Filter Water Plant (315 Building). The backwash was 90% river water. The sediment in the backwash contained alum which is used as a coagulating agent prior to filtration. Analysis of the backwash has shown it to be nonhazardous.

Code: 300 PHWSA

Classification: Accepted

Names:	300 PHWSA; 300 Area Powerhouse Hazardous Waste Storage Area; 300 Area Powerhouse HWSA	Reclassification:	Rejected (1/27/1999)
Type:	Satellite Accumulation Area	Start Date:	1/1/1991
Status:	Inactive	End Date:	1/1/1995
Description:	The site was a hazardous waste storage area used to store nonradioactive solid waste. Currently, the site is an empty chain link fenced area.		
Location:	The unit is located near the southwest corner of the 384 Building adjacent to roll up door 3.		
Process Description:	The unit was used to stage nonregulated and hazardous material. Some of the material stored here included waste oil, lubricating oil, oil soaked rags and aerosol cans.		
Related Sites/ Structures:	The site was associated with the operation of the 384 Powerhouse.		
Waste Type:	Barrels/Drums/Buckets/Cans		
Waste Description:	When active, the unit staged nonregulated waste oil and water treatment chemicals. Other small quantities of hazardous waste were also stored.		

Code:	300 SE	Classification:	Accepted
Names:	300 SE; Solvent Evaporator; 300 Area Solvent Evaporator; 300 ASE	Reclassification:	Closed Out (6/27/1995)
Type:	Evaporator	Start Date:	1/1/1975
Status:	Inactive	End Date:	1/1/1985
Description:	The site was a treatment unit for radioactively contaminated spent solvents generated in the fuel fabrication process at the 300 Area. The waste solvents were treated by evaporation in a Brooks Load Lugger (i.e., tank, dumpster). The 300 Solvent Evaporator (300 ASE) lugger (Type A82; Series 3F) was 244 centimeters (96 inches) long, 165 centimeters (65 inches) wide at the top, 127 centimeters (50 inches) wide at the bottom, and 89 centimeters (35 inches) deep. The 300 ASE was constructed of carbon steel with a hinged aluminum sheet metal canopy over the top. The canopy (added in 1978) prevented entry of precipitation while allowing airflow across the top of the solvent. The canopy was hinged so that one end could be lifted for pouring the contents of solvent barrels into the cutout side of the evaporator.		
Location:	The site was located on a concrete pad and an adjacent graveled equipment area behind the 333 Building and next to the east end of the 334 Building.		
Release Description:	Although no formal spill report is known to exist, one spill is known to have occurred when a small hole developed in a fitting of the steam line (BHI-00012). Steam condensate collected in the evaporator until it overflowed. It was likely that the overflow spilled from the cutout side onto the northern edge of the evaporator area. It is estimated that very little, if any, solvent was released during this spill, as the bulk of the solvent being treated had a density greater than water and thus remained inside the evaporator.		
Process Description:	The 300 ASE was installed in the spring of 1976 and was a treatment tank (evaporator) that received barrels of accumulated solvent waste from degreasing operations associated with the N Reactor fuel manufacturing facility. Degreaser solvent barrels were routinely stored (up to 1 year) within about 6.1 meters (20 feet) of the evaporator until poured into the 300 ASE with the barrel lift/dumper. Small quantities of solvent (from the paint shop) and uranium-ethyl acetate-bromine solutions were poured by hand directly into the evaporator. Typical 300 ASE waste		

was composed of perchloroethylene, trichloroethylene, chloroform, ethyl acetate/bromine solution, paint shop solvents, and possibly used oil. Small amounts of uranium and alloys of copper, zirconium, and possibly zirconium/beryllium were present in the degreaser solvents as machining particulates. In 1985, the 300 ASE was phased out. The Brooks load lugger was dismantled between 1985 and 1986.

Waste Type: Chemicals

Waste Description: The unit received approximately 2,300 liters per year (600 gallons per year) of solvents and steam condensate. The solvents consisted mainly of spent trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, and an ethyl acetate/bromine solution. Paint shop solvents that were potentially treated include methyl ethyl ketone, methylene chloride, and petroleum naphtha.

Closure Info: Sample results can be found in the field work section. The 300 ASE closure area consisted of two sub-areas located at the south side of the 333 East Concrete Pad. (1) a concrete sub-area about 15.2 meters (50 feet) long on the south portion of the original 333 East Concrete Pad that extends about 9.8 meters (32 feet) to the north and then tapers towards the original 10.2 centimeter (4 inch) diameter pad drain, and (2) an adjacent gravel/soil sub-area along the south edge of the concrete pad approximately 3.1 meters (10 feet) wide by 15.2 meters (50 feet) long.

Concrete core samples were collected and analyzed for the concrete pad sub-area. Since there are no known performance standards with which to evaluate concrete, soil cleanup levels were used per Ecology guidance. All detectable analytes were below the soil cleanup levels.

For soil samples collected and analyzed, cadmium, copper and lead were found in concentrations above the Hanford Site Background levels. The results for copper in the soil ranged from 26.8 to 109 milligrams per kilogram, well below the Model Toxics Control Act (MTCA) Method B cleanup level of 3,000 milligrams per kilogram. The MTCA Method A cleanup level was used for lead because data for the Method B cleanup level calculation were not available. The soil results for lead ranged from 9.4 to 101 milligrams per kilogram, well below the MTCA Method A cleanup level of 250 milligrams per kilogram. The one cadmium result of 1.0 milligram per kilogram, was below the MTCA Method A cleanup level of 2.0 milligrams per kilogram.

There are no post closure monitoring requirements for this site.

Code: 300 SSS	Classification: Not Accepted
Names: 300 SSS; 3607; 3707; 300 Area Sanitary Sewer System	Reclassification: None
Type: Sanitary Sewer	Start Date: 1/1/1944
Status: Active	End Date:
Description: The sewer system is comprised of underground sewer lines inside the 300 Area that connect to the City of Richland sewer system. Prior to 1996, the sewer was connected to septic tanks and sanitary leaching trenches located northeast of the 300 Area. The 300 Area Sanitary Sewer utilized gravity and pressure collection lines, septic tanks and leaching trenches. The original sewer system was constructed of concrete and clay pipes and was designated as the 3907 system. The system was connected to a tile field that was replaced, in 1951, by a septic tank and two leaching trenches. Additional septic tanks were added in 1975. The 300 Area Sanitary Trenches (WIDS Site 300-52) site includes two septic tanks and unlined trenches that were connected to the 300 Area Sanitary Sewer System. The 300 Area Sanitary Trenches (WIDS Site 300-52) is a "no action" site in the 300-FF-1 Operable Unit. On October 1, 1996 the 300 Area Sanitary Sewer System began to discharge to the City of Richland's sewage system. The pipeline to the 300 Area Sanitary Trenches was permanently isolated by welding a plate in place	

and filling manhole #6 with concrete.

Location: The system is located underneath the 300 Area. The sewer sampling station is located on the George Washington Way extension, south of the 300 Area. There are two lift stations. One is located northeast of the 337 Building and the other is northeast of the 306-E Building.

Process Description: The site receives sanitary waste from throughout the 300 Area. The 300 Area Sanitary Sewer utilizes gravity flow and lift stations to send sanitary waste to the City of Richland.

Related Sites/ Structures: Site associated with 300-276.

Waste Type: Sanitary Sewage

Waste Description: The sanitary sewer receives sanitary wastes from throughout the 300 Area.

Code: 300-12 **Classification:** Not Accepted

Names: 300-12; 325 Laboratory Diesel Fuel Tank **Reclassification:** None

Type: Storage Tank **Start Date:**

Status: Inactive **End Date:** 1/1/1992

Description: The unit is located at the northwest corner of the 325 Building. There was a single underground diesel fuel storage tank. It was taken out of service and removed (including accessible piping) in October, 1992. Sampling was performed at the time of tank removal (See Cleanup Activities Section). The site currently appears as a paved area between the building and air conditioning equipment. It can be distinguished from surrounding pavement by its newer appearance.

Related Sites/ Structures: This unit was associated with the 325 Building.

Waste Type: Storage Tank

Waste Description: The tank was used to store diesel fuel for an emergency generator located beside the 325 building. There are no known leaks or spills associated with this tank.

Code: 300-13 **Classification:** Not Accepted

Names: 300-13; 350 Building Release to Sanitary Sewer System **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is an unplanned release to the 300 Area Sanitary Sewer System. The site was discovered during routine surveillance and maintenance of the 350 Building Sanitary Sewer Lift Station. The lift station is a below grade sewage pump station accessible through a raised manhole, painted white and located in the grassy strip of land on the west side of the 350 Building between the security fence and the roadway. A gray electrical panel is located adjacent to and on the east side of the manhole. The panel houses the controls for the sewer lift pumps.

Location: The site is located northwest of the 350 Building and just south of the access roadway to the storage yard on the north side of the 350 Building. It can be identified by the electrical panel adjacent to and on the east side of the access cover for the station.

Process Description: The lift station is used to pump sanitary wastes into the 300 Area Sanitary Sewer System.

Description: Sewage is collected from 350 Building, 350A Building, 350B Building and pumped to a sewer tie-in just north of the lift station.

Related Sites/ Structures: The site is associated with the 300 Area Sanitary Sewer System, 350 Building, 350A Building, and 350B Building.

Waste Type: Sanitary Sewage

Waste Description: The site was sanitary sewage contaminated by latex paint.

Code: 300-14

Classification: Accepted

Names: 300-14; 331 Building Animal Waste Tanks Pit

Reclassification: Rejected (9/22/1998)

Type: Depression/Pit (nonspecific)

Start Date: 1/1/1974

Status: Inactive

End Date: 1/1/1977

Description: This site includes the unlined pit east of the building, a backwash storage tank, and six diversion chambers that are located north of the pit. Originally, the animal waste collection tanks were located in a pit just east of the 331-D Animal Waste Treatment Building. The pit is 28.0 meters (92 feet) by 22.3 meters (73 feet) and approximately 7.6 meters (25 feet) deep. The sides of the pit slope about 30 degrees. The tanks have been removed. Eight concrete tank pedestals remain at the bottom of the pit. A stairway leads to the bottom of the pit. A backwash storage tank remains between the 331-D building and the pit. Water was observed at the bottom of the pit. Six diversion chambers for the sewer system are located northwest of the pit.

Location: Using the Cypress Street entrance to the 300 Area, the site is located on the right side of the street within the 331 Complex.

Process Description: The 331-D Animal Waste Treatment Facility consists of a semi-high bay, prefabricated, metal Butler building erected on a concrete slab. It contained a 94,625 liters (25,000 gallon) per day capacity waste treatment plant that operated to chemically treat, mechanically flocculate and settle, and then gravity filter animal wastes. A sludge dryer also was installed to heat and dry 54.4 kilograms (120 pounds) per hour of sewage sludge product from the treatment facility and to produce a 65 to 100% waste material that could be buried in the 100 and 200 Area trenches. The animal waste collection tanks located in a pit just east of the 331-D building were associated with this process. This treatment facility was needed because hog hairs, sawdust, and undigested animal feed frequently plugged the unlined animal waste pit located along the Columbia River.

Related Sites/ Structures: The site is related to the Animal Waste Sewer and 331-D Complex.

Waste Type: Animal Waste

Waste Description: Animal waste from the 331 Complex were routed through the animal waste sewer to the 331-D animal waste treatment facility.

Code: 300-17

Classification: Not Accepted

Names: 300-17; 331 Building Trench; 331-D Ditch; Outfall A

Reclassification: None

Type: Ditch

Start Date:

Status: Active

End Date:

Description: The site is a ditch that runs from the southeast corner of the 331-D Building to the top of the

west bank of the Columbia River. The ditch is fed by an underground pipe which drains stormwater from the roadway between the north side of Building 331-C and the south side of Building 331. The open trench is piped to a culvert passing beneath a gravel roadway and the perimeter fence. The discharge is approximately 46 meters (150 feet) from the river. The bank is moderately sloped with natural vegetation. This outfall results from non-industrial sources. The site has a natural berm at the fence line. No erosion is evident on the sloping bank.

Location: The ditch is located in the 300 Area, in the southeast corner of the 331 Complex, between the 331-D and 331-E Buildings.

Process Description: The site collects sediment and runoff from storage yards and loading docks.

Waste Type: Stormwater Runoff

Waste Description: The waste is stormwater runoff from the roadway between the 331 and 331-C Buildings.

Code: 300-19

Classification: Accepted

Names: 300-19; 324 Building Sodium Removal Pilot Plant; 324 Sodium Removal Pilot Plant

Reclassification: Closed Out (6/9/1997)

Type: Process Unit/Plant

Start Date: 1/1/1979

Status: Inactive

End Date: 1/1/1987

Description: The Sodium Removal Pilot Plant consisted of a reaction vessel, a nitrogen gas supply, a steam supply, and equipment for decontamination studies. The reaction vessel was decommissioned and removed in 1991.

Location: The unit was located within room 146 of the 324 Building, Chemical Materials Engineering Laboratory.

Process Description: The unit has been inactive since 1987. From 1983 to 1987 the unit was used to clean and decontaminate test equipment, reactor components, and other sodium contaminated parts. Before 1983 the system was used to treat small amounts of alkali metals for research and development and to perform equipment decontamination.

Related Sites/Structures: Structures associated with the unit include the 324 Highbay, the highbay crane, plumbing, and pressure vessels.

Waste Type: Chemicals

Waste Description: Decontamination and research and development activities generated liquid effluents that contained radionuclides and sodium hydroxide. The sodium hydroxide was neutralized prior to discharging the solution to a crib.

Code: 300-21

Classification: Not Accepted

Names: 300-21; 333 Building Underground Limestone Tank

Reclassification: None

Type: Neutralization Tank

Start Date:

Status: Inactive

End Date: 1/1/1973

Description: The site was an underground storage tank that held limestone used to neutralize acid wastes. The Waste Acid Treatment System (WATS) Limestone Neutralization Tank leaked in 1973 and was removed.

Location: The tank was located east of the 333 Building and north of the 334 Tank Farm. The 334A

Building was built where the tank had been located. The site is within the 618-1 Burial Ground (WIDS Site 618-1).

Release Description: The release to the soil is described in the Releases Section. The release site (WIDS Site UPR-300-13) is a separate waste site.

Process Description: Prior to mid-1971, the majority of the concentrated chemical wastes from the 333 Building chemical tanks were transferred via polyvinyl chloride (PVC) drain lines in the pipe trench to this 14,380 liter (3800 gallon) plastic-lined, steel tank full of limestone. The waste etch acid solutions were sprayed over the top of the limestone and the neutralized acid waste drained from the bottom of the tank into the process sewer. Limestone was added to the top of the tank during the week as needed. The acid-limestone contact time was increased in 1971 by batch transfers to the tank to maintain at least a 12 hour holdup prior to draining to the process sewer. From late 1971 to August 1973, in an effort to further reduce chemical waste disposal within the 300 Area, the underground limestone neutralization tank was converted to a catch tank to collect and pump batches of waste etch acid to Tank 4 in the 334 Tank Farm. Tank 4 (WIDS Site 334 TFWAST), a 22,710 liter (6000 gallon) elevated tank, was used to store the waste acid solution and to transfer batches of the waste acid solutions to a neutralization tank (WIDS Site 313-TK-2) in the 313 Uranium Recovery Room. The 334-A Facility was built to replace the failed tank. The collection of batches of waste etch acids in the 334-A Facility catch tanks (WIDS Sites 334-A-TK-B and 334-A-TK-C) started in January 1975. The process for neutralization of the waste etch acids in the 333 waste acid neutralization tank continued from January 1975 until the 333 N Fuels Fabrication processes were shutdown in about 1988.

Related Sites/ Structures: The site is associated with the 333 Building process etch facilities and the associated drain lines (WIDS Site 300-219), Tank 4 in the 334 Tank Farm (WIDS Site 334 TFWAST), the 334-A Facility, and the process sewer. The site is also associated with UPR-300-13, a release to the soil of waste etch acid solution.

Waste Type: Equipment

Waste Description: The waste was a tank containing limestone used to neutralize acid waste. The tank was removed in 1973.

Code: 300-23	Classification: Accepted
Names: 300-23; 309-1 UST; PRTR Diesel Storage Tank	Reclassification: Closed Out (10/24/1996)
Type: Storage Tank	Start Date: 1/1/1959
Status: Inactive	End Date: 1/1/1969

Description: This site no longer exists as a waste site. The tank has been removed and the trench backfilled. Previously, this site was a tank that held diesel fuel used to power the Plutonium Recycle Test Reactor (PRTR) emergency generator located inside the 309 Building.

Location: The tank was located approximately 6.1 meters (20 feet) south of the 309 building and next to the main entrance of the 309 building.

Related Sites/ Structures: The associated structure was the Plutonium Recycle Test Reactor (PRTR), 309 Building.

Waste Type: Storage Tank

Waste Description: The waste was the abandoned underground storage tank (UST). Residual diesel fuel and water remained in the tank.

Closure Info: A site assessment was conducted following the guidance from the Washington State Department of Ecology, Guidance for Site Checks and Site Assessments for Underground

Storage Tanks. The assessment is described in Site Assessment Report for the 309-1 Underground Storage Tank (UST), correspondence control number 036527. The tank was excavated and examined for potential leaks. No discolored soil was observed. There was no groundwater in the tank excavation. Samples (Sampling Authorization Form - B96-145) were taken as follows: BOJ080, spoils pile east of excavation; BOJ081, spoils pile west of excavation; BOJ082, spoils pile west of excavation; BOJ083, bottom of excavation at elbow of supply line to building; BOJ084, south wall of tank, one foot below imprint in soil; BOJ085, bottom of tank, one foot below imprint in soil, BOJ086, bottom of tank, one foot below imprint in soil (duplicate); BOJ087, north wall of tank, one foot below imprint in soil; BOJ088, bottom of excavation at supply line penetration into building; BOJ089, bottom of excavation at return line penetration into building; BOJ090, sample blank. The full sample results can be found in the Hanford Environmental Information System (HEIS). The results of the site assessment indicated that a confirmed release of a regulated substance did not occur.

Code: 300-25 **Classification:** Accepted

Names: 300-25; 324 Building **Reclassification:** None

Type: Laboratory **Start Date:** 1/1/1966

Status: Inactive **End Date:**

Description: The 324 Building is a substantial concrete and steel structure. Portions of the Building are covered under a RCRA Closure Plan with on-going closure activities in progress. The 324 Building is divided into four integrated-but-separate primary work areas: the Engineering Development Laboratory-102 (non radioactive) or EDL-102, the Engineering Development Laboratory-146 (radioactive) or EDL-146, the radiochemical engineering cells (REC), and the Shielded Materials Facility (SMF). Additional facilities in the 324 Building include development laboratories, maintenance shops, and service areas. Within the 324 Building are controlled experimentation areas referred to as 'hot cells' with radiation shielding provided by thick concrete walls. To protect against releases of radioactive material from the hot cells to the environment, integral metal liners with sumps (i.e., without drains) were installed in the cells and tank vaults. Confinement of radioactive particulate matter within the shielded cells is provided by a directed air flow through high-efficiency particulate air (HEPA) filter ventilation system. The RCRA Closure Plan covers the REC portion of the building, including the hot cells, low level and high level vault tanks, the airlock and pipe trench. See DOE/RL-96-73, Rev. 1 (3-98) for additional details. In July of 1999, the Washington State Department of Ecology identified the following as areas of interest for this facility: - 324 Shielded Material Facility (SMF) South Cell - 324 Shielded Material Facility (SMF) East Cell - B-Cell (Hot Cell) - A-Cell (Hot Cell) - C-Cell (Hot Cell) - D-Cell (Hot Cell) - Hot Cell Airlock (Hot Cell) - High-Level Vault (4 tanks) - Low-Level Vault (4 tanks) - 324 Process Sewer System (WIDS site 300-15) - 324 Retention Process Sewer System (WIDS site 300-214) - EDL-102 (PNNL Vitrification Pilot) - High Bay (2 tanks with heels) - Room 146 (Fume hood - melter) - Room 3B, 3F (Laboratory and Rad Flume Hood), and Storage Vault - Waste Water Diverter System, Catch Tank and Ion Exchange Tank - HNO₃ Bulk Chemical Tank - West Side of Facility. The areas listed above that are within the boundaries of the TSD facility are: - B-Cell (Hot Cell) - A-Cell (Hot Cell) - C-Cell (Hot Cell) - D-Cell (Hot Cell) - Hot Cell Airlock (Hot Cell) - High-Level Vault (4 tanks) - Low-Level Vault (4 tanks).

Location: The 324 building is in the central part of the 300 Area, northeast of the 309 Building and immediately east of the 308 Building.

Release Description: On 11/16/10, a cone penetrometer (an enclosed pipe pushed into the soil by a hydraulic ram) was used to identify the presence of radioactive material in the soil approximately 3.5 feet beneath the 324 Building near the B-cell. A maximum radiation readings of 6,700 R/hr. was identified. The 324 Building is a Nuclear Category 2 facility, currently undergoing deactivation and decommissioning. The 324 Building was constructed in the 1960s to support materials and

chemical process research and development activities, and ceased research operations in 1996. The primary operational system remaining in the building is ventilation. In preparation for removal of B-cell, historical research and on-site investigation identified evidence of a potentially breached liner in the sump floor. A leak may have occurred at some point in the operational past of the cell. The 300 Area is posted as an Underground Radioactive Material (URM) Area. This event is being reported as a Management Concern due to the unexpected very high levels of radiation. (See sitecode 300-296)

Process Description: The 324 Building was designed and constructed to allow for a high degree of versatility in completing complex and varied experimentation on highly radioactive wastes developing approaches for waste treatment and storage activities. The building was designed as a single integrated facility for orderly progression of nonradioactive and radioactive development studies from laboratory or bench-scale to full engineering-scale pilot plant demonstrations. The facility houses radiochemical and radiometallurgical hot cells and laboratories. The facility supported several DOE/RL related initiatives for highly radioactive chemical processing and metallurgical engineering studies. As a result of residues and internal facility spills during the conduct of these activities, the facility contains areas with significant fixed and dispersible mixed waste contamination.

Related Sites/Structures: The 324 Building has been isolated from the RLWS by installing a blank in the diverter valve. The pipes going from Tanks 102 and 177 to the 324 RLWS were cut and capped. The main 324 pipe that connected with the 340 Facility pipe has been cut and capped. The 324 building is associated with Unplanned Release 300-296.

Waste Type: Equipment
Waste Description: Currently, the facility is undergoing deactivation to address radiological and chemical contamination remaining in the facility. The waste is contaminated equipment that is being removed from the facility, packaged, and transported to the 200 Area for burial.

Code: 300-26	Classification: Accepted
Names: 300-26; 384 Powerhouse #6 Fuel Oil Spill; Delivery Truck Spillage on Roads; Powerhouse Fuel Oil Spill	Reclassification: Rejected (1/27/1999)
Type: Unplanned Release	Start Date: 1/1/1991
Status: Inactive	End Date: 1/1/1991

Description: The site was an unplanned release. The area of the release was previously used as a coal pile for the 384 Powerhouse. The soil is stained dark from coal dust. There is no visible evidence of the #6 fuel oil spill in the area. On the south side of the site adjacent to Apple Street there is an Underground Radioactive Material sign, and a buried gas pipeline.

Location: The site is located on the east side of the 384 Powerhouse, just south of the 366 Fuel Oil Bunker, at the refueling area.

Release Description: After refueling of the 366 Fuel Oil Bunkers, an offsite vendor's fuel oil truck spilled #6 fuel oil during departure onto the gravel and paved road. The driver stated that he had left a siphon tube valve cracked open which released the fuel oil to the ground. The date of the spill was December 31, 1991.

Related Sites/Structures: The site is associated with the 384 Powerhouse and 366/366A Fuel Oil Bunkers (WIDS Site 300-6).

Waste Type: Oil
Waste Description: The waste is #6 fuel oil contaminated soil and gravel. The release occurred on December 31,

Description: 1991. The occurrence report does not contain an estimate of the volume. There is no information on the extent of the spill. The leak was not discovered until after the truck left the job site.

Code: 300-27 **Classification:** Accepted
Names: 300-27; Soil Contamination at 329 Biophysics Laboratory **Reclassification:** Rejected (2/12/1999)
Type: Unplanned Release **Start Date:** 1/1/1991
Status: Inactive **End Date:** 1/1/1991

Description: Radioactive contamination was found at the site during a routine survey on August 14, 1991. The site is an area of crushed rock gravel with no vegetation located near the outside wall of the 329 Building. There are no hazard postings at this location. There is no visible evidence of radioactive contamination that was removed from this site. A cement pad with a liquid argon tank has been constructed adjacent to the site.

Location: The contamination was found in soil just west of Door 12 on the northeast section of the 329 Building.

Release Description: During a routine radiation survey outside of the building on August 14, 1991, a Radiation Protection Technologist (RPT) found radioactive contamination levels of approximately 40,000 disintegrations per minute (dpm) beta-gamma in a one square foot area of soil. Pacific Northwest Laboratory (PNL) was unable to identify the source of the contamination. The contamination was not found during a prior survey in 1990. This site was found within several feet of the outer wall of the 329 Biophysics Laboratory. The source of the contamination is unknown.

Waste Type: Soil

Waste Description: The waste was contaminated soil that was later cleaned up.

Code: 300-30 **Classification:** Accepted
Names: 300-30; 3705 Photography Building **Reclassification:** Rejected (1/27/1999)
Type: Process Unit/Plant **Start Date:** 1/1/1963
Status: Active **End Date:**

Description: The 3705 Building is a rectangular, one-story concrete block building erected on concrete footings and a slab-on-grade concrete floor. A corrugated metal sided mechanical room penthouse has been erected on the building roof. The roof itself is flat and is covered with built-up tar and gravel. The building contains no windows. Interior partitions are either gypsum wall board on stud frames or movable metal. Utilities serving the building include sanitary water and sewer, compressed air, process water, and electricity. The building was connected to the process sewer, but all connections were capped when the building was remodeled, probably between 1988 and 1990. The capped process sewer connection for the silver reclamation process is located behind a sheet rock wall that has been marked with an identification sticker.

Location: The 3705 Photography Building is inside the 300 Area, just north of the Apple Street Gate. It is on the west side of Alaska Street.

Process Description: From 1963 through the early 1970's, the building was used to process personnel dosimetry badges and meters. Various radioactive sources were kept and used at the facility. In 1968, a 1.96 microcurie americium-241 source was found to be ruptured and the contamination was subsequently cleaned up (See Releases Section). Since the early 1970's, the facility has

provided photographic services, including still camera assignments, color slides work, contract printing, and black and white or color enlargements. Within the facility is the silver reclamation unit that is used to treat the spent photoprocessing chemicals to recover silver for recycling. During the silver reclamation process, liquids from film processing are run through a chemical recovery column (CRC) that precipitates out silver. The building use to be connected to the process sewer and the sanitary sewer. All process sewer connections were capped when the building was remodeled, probably between 1988 and 1990. The silver depleted liquid effluent produced from the silver reclamation process is a nonregulated, nonhazardous waste that is no longer discharged to the sanitary sewer. It is collected in 114 liter (30 gallon) drums and then sent offsite for disposal. The silver enriched CRC's are treated as recyclable material and periodically sent to a refiner for processing. Washwater and overflow from the developers is sent to the City of Richland sanitary sewer. Prior to 1998, this waste stream went to the 300 Area Sanitary Sewer Trenches (WIDS Site 300 SSS).

Related Sites/ Structures: The site is associated with the 300 Area Sanitary and Process Sewers (WIDS Sites 300 SSS and 300-15) and the 3746-D Silver Reclamation Process Facility (WIDS Site 3746-D SR).

Waste Type: Chemicals

Waste Description: The waste is spent photoprocessing chemicals. Prior to silver reclamation, the chemicals designate as a hazardous waste. After the silver reclamation, the solutions are nonregulated and nonhazardous. The treated solutions are disposed of offsite. The recovered silver is shipped offsite for recycling.

Additional waste is nondangerous/nonhazardous washwater and overflow from the film developers that goes to the City of Richland sanitary sewer system.

Code: 300-35	Classification: Accepted
Names: 300-35; 3706A Fuel Storage Tank	Reclassification: Closed Out (2/12/1999)
Type: Storage Tank	Start Date:
Status: Inactive	End Date:

Description: The site is an abandoned underground fuel storage tank. A 0.51 meter by 0.51 meter (1.7 feet by 1.7 feet) concrete block and sign (at the tank fill connection location) marks the location of the underground tank. The sign reads "EMPTY 300 GALLON UNDERGROUND DIESEL FUEL TANK LOCATED HERE. CONTACT MAINTENANCE Environmental Services South (376-7210) for information".

Location: The tank marker is located 1 meter (3.3 feet) from the south wall of the 3706-A Building and 6.1 meters (20 feet) west of the southeast corner of the building.

Release Description: A review of the facility operating history did not reveal any reported instances of diesel spills. It is anticipated that the normal trace amounts of diesel near the filler connection may be present.

Process Description: The underground diesel fuel storage tank was used to support emergency generator operations for heating, ventilation, and air conditioning (HVAC).

Related Sites/ Structures: The site is associated with the emergency generator.

Waste Type: Storage Tank

Waste Description: The waste is an abandoned underground fuel storage tank that was pumped out and closed in place.

Closure Info: The tank was pumped and closed in place. A message on 2/10/1995 from Ted Wooley of the Washington State Department of Ecology says "It appears that the information provided would allow exemption (e.g., abandonment or closure prior to December 22, 1988) under WAC 173-360." A second cc:mail on 3/15/1995 says that "After re-evaluating the data, Ecology agrees that the appropriate disposal steps were taken with the waste water collected. Moreover, closure of the tank in place can serve as final closure of the tank."

Code: 300-36 **Classification:** Not Accepted

Names: 300-36; 384 Powerhouse Oil Release to French Drain **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1995

Status: Inactive **End Date:** 1/1/1995

Description: The site was an unplanned release to a french drain. The french drain received condensate return from the steam heating system that went to the fuel oil bunkers. The french drain is a 0.65 meter (2.13 feet) diameter drain with a rust colored lid. Although gravel around the drain is slightly stained, it is most likely caused from normal steam condensate activity.

Location: The oil release was observed in a french drain located north of the 366 Pumphouse, just east of the railroad tracks.

Release Description: On August 2, 1995, a french drain north of the 366 Building was observed by operations personnel to be overflowing. When the employee lifted the drain lid, oil was noted floating on top of the water. Since the source of the water in the drain was condensate return from the oil bunker steam heating system, the oil indicated a tube bundle failure. Response included isolating the steam to the underground fuel oil bunkers and removing the oil contaminated rocks and soil. Oil in the french drain was also removed. Clean dirt was used to backfill the area where material was removed.

Process Description: The oil bunkers were heated with steam to keep the oil viscous enough to be pumped.

Related Sites/Structures: The release is associated with the french drain known as WIDS Site 300-123 (Miscellaneous Stream #342) and the 366/366A Fuel Oil Bunkers (WIDS Site 300-6).

Code: 300-39 **Classification:** Accepted

Names: 300-39; 309 Building Ex-Vessel Irradiated Fuel Storage Basin; 309 Building Irradiated Fuel Storage Basin; 309 Fuel Storage Basin **Reclassification:** None

Type: Storage **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1974

Description: The Fuel Storage Basin is empty. All fuel handling and storage equipment has been removed. Gates, stoplogs and fixtures have been removed and all that remains are studs where the equipment was located. The basin has been covered with a plywood, sheet metal and metal grating cover supported by channel iron. This cover made it impossible to check the basin overflow drain system to see if they have been plugged. The Fuel Storage Basin is "L" shaped and may be described as having two sections. The largest section is the Fuel Storage Basin which runs north/south and was the first pit built; the pit is 40ft (12.2 m) long, 20 ft (6.1 m) wide and 34ft (10.4 m) below grade. The other section is the Loadout Facility which has two sections that run east/west and are smaller than the original basin and were built as the first basin reached capacity; one basin is 26 ft (7.9 m) long, 5 ft (1.5 m) wide, and 26 ft (7.9 m)

300 Area sanitary sewer, and WIDS Site 300-258, Abandoned Pipe Trench Between 334 Tank Farm and 306E. Contamination beneath this facility is documented as WIDS Site 300-256. Contamination beneath the adjacent 306W Metal Fabrication Development Building is documented as WIDS Site Code 300-33.

Code: 300-47 **Classification:** Not Accepted

Names: 300-47; Residual Hazardous Substances Northwest of 3708 Building **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/1989

Description: During the demolition of the 3708 facility the 300-47 WIDS site location was removed. No visual evidence was found of potential contamination at the 300-47 site during removal of the 3708 building foundation concrete slab. The site was identified as two locations of potential contamination near the 3708 Building that resulted from tank leakage. The area around the 3708 Building is not currently posted for contamination and there is no evidence of underground tanks. The area is partially paved with asphalt, and otherwise surfaced in crushed gravel. There are no markers where the chemical tank and the oil tank were located.

Location: The site is located in 300 Area just off the northwest corner of the 3708 Building.

Release Description: No releases have been identified.

Process Description: The tanks were chemical holding tanks containing waste from floor, shower, and sink drains in the 3708 Building, and an underground oil storage tank.

Related Sites/ Structures: The two areas of potential contamination are associated with the 3708 Building.

Code: 300-55 **Classification:** Accepted

Names: 300-55; 307-D; 309 Rupture Loop Holding Tank; RLT-2; Rupture Loop Hold-Up Tank **Reclassification:** Rejected (2/24/1999)

Type: Storage Tank **Start Date:** 1/1/1960

Status: Inactive **End Date:**

Description: The tank was an underground storage tank, 12.2 meters (40 feet) in diameter and 3.05 meters (10 feet) tall with a sloping top.

Location: The Rupture Loop Holding Tank was located approximately 61 meters (200 feet) northeast of the 309 Facility and southwest of the 324 building.

Process Description: Liquid waste routed to this tank was sampled. If it was contaminated it was sent to the 340 Complex through a 7.6 centimeter (3 inch) underground pipeline. If the waste was not contaminated, it was diverted to the Columbia River via a 1 meter (3 foot) diameter outfall line.

Related Sites/ Structures: The site was related to the 309 Building, Rupture Loop Annex (Room 20), valve pit and piping. There were two piping runs that were connected to the tank. For contaminated material, a 7.6 centimeter (3 inch) pipe ran to the 340 Complex, and for uncontaminated material, a pipe ran to the Columbia River (See WIDS Site 300-257).

Waste Type: Equipment

Waste Description: The waste was a tank.

Description:

Code: 300-56 **Classification:** Accepted
Names: 300-56; 306-E 90-Day Waste Accumulation Area **Reclassification:** Rejected (1/27/1999)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:**
Description: The site is a steel storage container designed to contain hazardous materials or waste. The site was previously used as a 90 day waste storage area. The site is currently in use as a hazardous material storage area. Materials currently stored include laboratory chemicals, a 208 liter (55 gallon) drum for waste oil recycling, and 320 kilograms (700 pounds) of peanut butter (sludge simulant).
Location: The site is located approximately 20 meters (65 feet) north of the northeast corner of the 306E Building in the 300 area.
Release Description: The material was/is contained within a storage cabinet. No information has been provided related to any potential spills at the site.
Related Sites/ Structures: The site stores hazardous materials or waste from the 306E building.
Waste Type: Misc. Trash and Debris
Waste Description: The site received waste from the 306E building.

Code: 300-57 **Classification:** Accepted
Names: 300-57; 335 Building 90-Day Waste Accumulation Area **Reclassification:** Closed Out (12/15/1998)
Type: Storage Pad (<90 day) **Start Date:** 1/1/1994
Status: Inactive **End Date:** 1/1/1998
Description: The site is a small cinder block room addition on the west side of the 335 Building. The exterior door is locked and labeled "90 Day Storage Accumulation" and "Danger".
Location: The site is located in the southeast portion of 300 Area, east of the 324 Building.
Related Sites/ Structures: The site was related to the Fast Flux Test Facility (FFTF).
Waste Type: Equipment
Waste Description: The 90 Day Waste Storage Accumulation Area was used to store sodium contaminated piping and components after dismantling, prior to shipment for disposal.
Closure Info: The facility contact stated that the room was emptied on 9-30-98. There are no future plans to store waste in this area.

Code: 300-58 **Classification:** Accepted
Names: 300-58; 305B Steam Condensate Injection Well; Miscellaneous Stream #449 **Reclassification:** Rejected (9/2/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is a french drain, identified as miscellaneous stream #449. The unit is a concrete pipe that is flush with the ground surface, and filled with cobbles and sand. No pipes to the drain are visible. The "Inventory of Miscellaneous Streams", Revision 3 says the site is inactive, source abandoned. The french drain could also drain stormwater from nearby asphalt roads in very heavy rain. The original purpose of the site was likely to have been used for steam condensate. The soil and rocks are rust stained showing evidence of its use as a steam condensate drain. In addition, a steam line is located over the site. Although stormwater may enter the site, it is not necessarily conveyed to it.

Location: The site is located 3.01 meters (10 feet) from the southwest corner of 305B Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description:

Code: 300-59	Classification: Accepted
Names: 300-59; 305 Building Steam Condensate; Miscellaneous Stream #417	Reclassification: Rejected (12/15/1998)
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1998

Description: The site was an injection well covered by a 1.29 meter (4.23 foot) metal lid. The lid was labeled "Confined Space." The lid was flush with the ground surface and is surrounded by soil and rocks. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: This site is located between the 305 Building and 305-BA.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: This site is associated with the 305 Building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-60	Classification: Accepted
Names: 300-60; 303A Building Steam Condensate; F.D. #26; Miscellaneous Stream #339	Reclassification: Rejected (2/12/1999)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is described as an injection well that receives steam condensate. This stream site is on the east side of the 303A Building, near the northeast corner. A condensate return pipe extends from the building at this point. The area next to the building was dug up when an electrical system was installed, which would explain why there is no evidence of the site at this point. The "Inventory of Miscellaneous Streams," Revision 3, describes the site as active. However, the overhead steam line terminates and is capped at the north edge of the 3717B Building. 303A is posted "Radiation Area and Radioactive Material Area" and "Caution, Fissile Materials." The roof of 303A is posted "Contamination Area." 304 is posted "Fixed Contamination Area."

Location: The site is located east of the 303A Building and near the northwest corner.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the main 300 Area steam line.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-61

Classification: Accepted

Names: 300-61; 303B Building Steam Condensate; Injection Well #12; Miscellaneous Stream #444

Reclassification: Rejected (1/19/1999)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site has been described as an injection well. No engineered structure is evident at the location described for this site. Two steam lines labeled HPD-TRP-011 and HPD-TRP-12 were found; both are described in the "Inventory of Miscellaneous Streams," Revision 3. These two lines descend from the overhead line and disappear into the ground. A third line from the overhead steam line is found just east of HPD-TRP-011 and -012. This third line is unlabeled and terminates open-ended approximately 10 centimeters (3.9 inches) above the base of the wooden pole that supports it. The ground surface in this area is covered by gravel. According to the "Inventory of Miscellaneous Stream," Revision 3, this site is inactive, source abandoned.

Location: The site is north/northeast of the northeast corner of 303B and northwest of the northwest corner of 3732.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to the 300 Area main steam line. The "Inventory of Miscellaneous Streams,"

Structures: Revision 3, relates this discharge to the 303B Building, but that relation appear to be based only on proximity since 303B never received steam.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-62

Classification: Accepted

Names: 300-62; 303C Building - Steam Condensate; Miscellaneous Stream #495

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is two, 2.5 centimeter (1 inch) metal pipes from steam drain lines entering the ground at the base of the steam support structure. No engineered drain structure is visible. The miscellaneous streams report (Revision 3) says the stream has been eliminated because the source has been shut off. The site received steam condensate from the main header, HRD-TRP-007, -008.

Location: The drain is located in the northeast corner of the fenced area around 303C Building, at the southwest corner of Ginko and Wisconsin streets. The site is 8.3 meters (27 feet) from the north side of the 303C Building, at the base of steam line support poles.

Process Description: The site received steam condensate from steam lines passing by the 303C Building. Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control erosion.

Waste Type: Steam Condensate

Waste Description:

Code: 300-63

Classification: Not Accepted

Names: 300-63; 305B Building Stormwater Runoff; Miscellaneous Stream #458

Reclassification: None

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is a 0.6 meter (2 foot) diameter concrete french drain, 0.5 meters (1.5 feet) deep, with a perforated steel plate cover, flush with the alley road. About 0.3 meters (1 foot) from the top is a 6 centimeter (3 inch) diameter drain pipe that goes toward the west. Construction drawings H-3-52655 and H-3-304714 sheet 2 show that the open bottom catch basin/french drain location is connected directly to the (300-15) process sewer pipeline.

Location: The french drain was on the south side of the 305B Building, at the edge of a gravel slope and the paved alley. The site is 6.2 meters (20.5 feet) south-southeast of the corner of 305B and the downspout for the roof stormwater runoff.

Process Description: The site appears to be just stormwater runoff.

Waste Type: Stormwater Runoff

**Waste
Description:**

Code: 300-64 **Classification:** Accepted

Names: 300-64; 303F Building Steam Condensate;
Miscellaneous Stream #352 **Reclassification:** Rejected (1/19/1999)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is an HVAC steam condensate return to the WATS Pipe Trench (WIDS Site 300-224). The discharge goes into a rectangular concrete base covered by a 0.90 meter (2.95 foot) by 2.45 meter (8.04 foot) metal lid. Some of the concrete base appears to be rusty. The site is also surrounded by concrete. The lid is posted "Confined Space." There are three openings cut in the metal lid to allow pipes to pass through. An approximately 2.5 centimeter (1 inch) diameter metal pipe enters the middle opening. This pipe is labeled "P198" and appears to be electrical in nature. A second approximately 2.5 centimeter (1 inch) diameter metal pipe enters the south opening. There is a label on the wall next to this pipe that reads "NP-303F-01." This second pipe extends approximately 2 meters (6.6 feet) above the lid, makes a 90 degree turn away from 303F and terminates open-ended over one of the steam lines that enters the west wall of 303F. An approximately 10 centimeter (4 inch) diameter steam pipe and an approximately 2.5 centimeter (1 inch) diameter metal pipe enter the north opening. These two pipes extend down from the building's roof. According to John Remaize, the lines from the roof of 303F are HVAC and cooling lines. The lid does not fit tightly; there are openings between the lid and the concrete base. These openings could allow stormwater runoff from the 303F Building to enter. These opening also allow a limited view of the interior of the structure. Although it is difficult to see inside, the floor of the interior appeared to be dry during the October 29, 1998, walkdown. However, there also appeared to be more pipes inside than could be accounted for by those entering through the lid. Drawing H-3-304714, Sheet 2, shows the WATS and U-Bearing Pipe Trench (WIDS Site 300-224) enters/leaves WIDS Site 300-64 and connects to the 313 Building. The site is on the east end of a row of removable panels labeled "Radioactive Material, Internally Contaminated." 303F is posted "Fixed Contamination Area" and the 303F roof is posted "Contamination Area." According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located on the west side of the 303F Building, just south of the door.

**Process
Description:** Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

**Related Sites/
Structures:** The site is associated with the 303F Building.

Waste Type: Steam Condensate

**Waste
Description:** The site has been listed as inactive in all earlier versions of the Miscellaneous Streams. Comments in earlier versions indicate the site has not been active for some time. No flow rate or date for eliminating the source has been provided in any version of the Miscellaneous Streams document.

Code: 300-65 **Classification:** Accepted

Names: 300-65; 303J Building - Steam Condensate Mud Leg (Part of 300 Main Supply); Miscellaneous Stream #266 **Reclassification:** Rejected (9/2/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 0.35 meter (14 inch) diameter steel pipe in the ground, about 0.8 meters (2.5 feet) deep. The drain is covered with a steel plate with notches and holes for vents and two steam condensate pipes to enter. According to the miscellaneous streams report (Revision 3), the stream has been eliminated because the steam source has been shut off. Signs on the 303J Building say that it is a closed facility, and no material is stored inside.

Location: The french drain is located in the center of the south side of the 303J Building, about 5 centimeters (2 inches) from the wall.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description:

Code: 300-66 **Classification:** Accepted

Names: 300-66; 303J Building HVAC Condensate; Miscellaneous Stream #267 **Reclassification:** Rejected (9/2/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site was an open concrete french drain. Two pipes exited from about the ceiling level of the 303J Building and discharge to the drain. The concrete drain was filled with sand and small rocks and it does not appear to have been used recently. The "Inventory of Miscellaneous Streams", Revision 3 lists the site as a steam condensate site. The responsible contractor believes the site to be an HVAC condensate drain (as it was listed in the previous "Inventory of Miscellaneous Streams", Revision 2).

Location: The site is immediately adjacent to the 303J Building, in the center of the north side.

Process Description: The Heating, Ventilation, and Air Conditioning (HVAC) system generates condensate on the coils from the air. The condensate is collected by the HVAC unit and it is drained to the french drain.

Related Sites/ Structures: The 303J Building has been closed and is vacant.

Waste Type: Water
Waste Description:

Code: 300-67 **Classification:** Accepted

Names: 300-67; Miscellaneous Stream #414; Steam Condensate from 300 Area Main Steam Header **Reclassification:** Rejected (12/15/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site was an injection well that received steam condensate. Two metal lids and the metal lid frame were visible. The lid frame measured 1.90 meters (6.23 feet) by 0.82 meters (2.69 feet) and is flush with the ground surface. The site is just east of an access manhole for the process sewers, which is labeled "Radioactive Material, Internally Contaminated." The "Inventory of Miscellaneous Streams," Revision 2, states when this injection well was in service, it overflowed to the process sewer. The 303B Building is posted "Fissile Materials," "Radiation Area and Radioactive Material Area," and "Fixed Contamination Area." The roof of the 303B Building is posted "Contamination Area." The 304 Building is posted "Fixed Contamination Area." This site is slightly down slope of the road to the north. There are small openings in the lid where stormwater runoff from the road may be able to enter the injection well. It does not appear as though runoff from the two buildings would be inclined to flow towards the site; the area between the buildings and the site is fairly level. The site is surrounded by gravel. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located northwest of 303B and northeast of the 304 Building, just south of the overhead steam line.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 300 Area main steam header.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-68 **Classification:** Accepted

Names: 300-68; 305 Building - Steam Condensate; Miscellaneous Stream #451; Pit U23 **Reclassification:** Rejected (12/15/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is an injection well. The base of the injection well is constructed of corrugated metal and is covered by a 1.91 meter (6.27 foot) metal lid. The lid is approximately 30 centimeters (11.8 inches) above grade and is labeled "U-23" and "Confined Space." Two pipes enter the lid from the overhead steam lines. One of these pipes is approximately 20 centimeters (7.9 inches) in diameter and the other is approximately 6 centimeters (2.4 inches) in diameter. The site is surrounded by soil and gravel. The "Inventory of Miscellaneous Streams," Revision 3, says the site is inactive, source abandoned.

Location: The site is on the south side of the 305 building. It is just south and east of the entry door;

between the entry door and the metal stairwell.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 305 building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-69	Classification: Accepted
Names: 300-69; 305 Building Steam Condensate; Miscellaneous Stream #415	Reclassification: Rejected (12/15/1998)
Type: Injection/Reverse Well	Start Date:
Status: Inactive	End Date: 1/1/1998

Description: The site was an injection well covered by a 0.74 meter (2.43 foot) metal lid. The lid is flush with the ground surface and is surrounded by metal grating resting on top of the soil and gravel. A small diameter, less than 2.5 centimeters (1 inch), metal pipe elbow extends approximately 20 centimeters (8 inches) from the building approximately 5 centimeters (2 inches) above the ground surface. The other end of the pipe disappears into the ground. This pipe is in line with the injection well's lid. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located just north of the northeast corner of the easternmost extent of the 305 Building. It is also just south of the fence surrounding the electrical substation.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: This site is associated with the 305 Building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-70	Classification: Accepted
Names: 300-70; 305 Building Steam Condensate; Miscellaneous Stream #416	Reclassification: Rejected (12/15/1998)
Type: Injection/Reverse Well	Start Date:

Waste Type: Water
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of HVAC condensate only.

Code: 300-72 **Classification:** Not Accepted
Names: 300-72; 308 Building Stormwater Runoff; Miscellaneous Stream #404 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Active **End Date:**

Description: The site is an injection well that receives stormwater runoff from the surrounding area. The site is covered by a 0.66 meter (2.17 foot) metal lid with perforations. The lid is flush with the surrounding concrete. During the November 8, 1998, walkdown, water could be seen through the perforations in the lid. It had rained three days prior to the walkdown. Sand has washed down the truck ramp and has partially covered the lid. The "Inventory of Miscellaneous Streams," Revision 3, states "Disposal site within 300 feet of an active/inactive crib, ditch or trench." The site is within 91 meters (300 feet) of 316-3 Trench.

Location: The site is located in the southernmost of two truck ramps at the northeast corner of the 308 Building. It is located in the ramp with a roll-up door labeled "48."

Related Sites/Structures: The site is associated with the 308 Building.

Waste Type: Stormwater Runoff
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.01 gallons per minute.

Code: 300-73 **Classification:** Not Accepted
Names: 300-73; 308 Building Stormwater Runoff; Miscellaneous Stream #405 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Active **End Date:**

Description: The site is an injection well that received stormwater runoff from the surrounding area. The site is covered by a 0.18 meter (0.59 foot) metal grate. At the time of the November 8, 1998, walkdown, the site was surrounded by approximately 7 centimeters (2.8 inches) of sand and debris. The drain itself was also filled with sand and debris. It had rained three days prior to the walkdown. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The document also states "Disposal site within 300 feet of an active/inactive crib, ditch or trench." The site is within 91 meters (300 feet) of 316-3 Trench.

Location: The site is located in the northernmost of two truck ramps at the northeast corner of the 308 Building. The site is in the truck ramp with the roll-up door labeled "46." It is set into a notch in the ramp's concrete.

Related Sites/Structures: The site is associated with the 308 Building.

Waste Type: Stormwater Runoff
Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of stormwater only.

Code: 300-74 **Classification:** Not Accepted
Names: 300-74; 308 Building Stormwater Runoff; Miscellaneous Stream #406 **Reclassification:** None
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: The site is an injection well that received stormwater runoff. The site has a concrete base and is covered by a 0.64 meter (2.10 foot) by 0.64 meter (2.10 foot) metal grate. A sign on the grate reads "Drains to R.P.S." Sand and gravel cover part of the concrete surrounding the grate. The top of the concrete is flush with the ground surface on its south and west sides. The north side is approximately 1 to 5 centimeters (0.4 to 2 inches) above the ground surface. The east side of the concrete rises above the asphalt surface of the truck ramp. At the time of the November 8, 1998, walkdown, the site was filled with water and water had pooled in the adjacent truck ramp. It had rained three day's prior to the walkdown. According to the "Inventory of Miscellaneous Streams," Revision 3, the site has been grouted. It is inactive and listed as, "Disposal Site Permanently Abandoned." The document also states "Disposal site within 300 feet of an active/inactive crib, ditch or trench." The site is within 91 meters (300 feet) of 316-3 Trench.

Location: The site is next to a truck ramp on the north side of the 308 Building, near the northwest corner of the building. It is located at the bottom of a short staircase from the truck ramp to the loading dock.

Related Sites/ Structures: The site is associated with the 308 Building. The 308 Building is inactive.

Waste Type: Stormwater Runoff
Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of stormwater only.

Code: 300-75 **Classification:** Accepted
Names: 300-75; 309 Building Stormwater Runoff and Chiller Water; Injection Well #20; Miscellaneous Stream #445 **Reclassification:** Rejected (1/19/1999)
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: The site is an injection well that received stormwater runoff and water from a chiller. The well is a concrete pipe covered by a 1.11 meter (3.64 foot) diameter metal lid. The top of the pipe is approximately 2.5 centimeters (1 inch) above grade. The lid is labeled "Confined Space." The site is surrounded by yellow safety posts and asphalt. John Remaize stated that the chiller has been removed. According to the "Inventory of Miscellaneous Streams," Revision 3, the drain has been permanently plugged and the stream has been routed to a process sewer. The document lists the site as inactive, "Source Permanently Abandoned."

Location: The site is located west of Door #11, which is the southernmost door on the west side of the south wing of the 309 Building.

Process Description: The chiller generated condensate on the coils from the air. The condensate was collected by the chiller unit and was drained to the injection well.

Related Sites/ Structures: The site is associated with the 309 Building.

Waste Type: Water
Waste Description: The waste was stormwater runoff and chiller water. When the site was active, the flow rate was less than 0.038 liters (0.01 gallons per minute).

Code: 300-76 **Classification:** Accepted
Names: 300-76; 306W Building Steam Condensate; Miscellaneous Stream #418 **Reclassification:** Rejected (9/2/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is a french drain that is a concrete pipe almost flush with the ground surface. A 2.54 centimeter (1 inch) metal pipe drops from an overhead steam line and drains to the unit. Adjacent steam drain lines may also enter the unit, but any connecting pipes are below the rocks that come to within about 15.2 centimeters (6 inches) of the top of the drain. The drain is covered with a round steel plate with four vent holes and a notch for the metal pipe. The rocks appear to be discolored from rust. The "Inventory of Miscellaneous Streams", Revision 3, says the site is inactive, source abandoned. The site does not appear to be active, but discharge pipe(s) is (are) still present (assuming adjacent pipes also discharge to the unit)

Location: The site is on the west side of the 306W Building, about 5.5 meters (18 feet) west of the west wall and about 21.3 meters (70 feet) north of the southwest corner.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description:

Code: 300-77 **Classification:** Not Accepted
Names: 300-77; 309 Building Stormwater Runoff; Miscellaneous Stream #450 **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The site is a 10.16 cm (4 in) storm drain that empties into the process sewer 300-15 (H-3-13532).

Location: The site is located at the bottom of the stairwell on the north side of the west wing of the 309 Building. The stairwell is below door #8.

Related Sites/Structures: The site is associated with the 309 Building.

Waste Type: Stormwater Runoff
Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of stormwater only.

Code: 300-78 **Classification:** Accepted

Names: 300-78; Miscellaneous Stream #331; 300 Area Main Header Steam Trap (Southwest Corner of 313 Building) **Reclassification:** Rejected (2/12/1999)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The effluent source to this structure was removed when the 313 building was demolished in 2004. The waste site is a rectangular shaped below grade concrete box that is covered with two steel plates. Seven pipes of various sizes entered the site from the 313 building. Standing water was observed in the bottom of the site. A concrete lined 6.7 meters long by 0.356 meters wide by 0.330 deep (22 feet long by 14 inches wide by 13 inches deep) trench extended from the site to the south. An opening at the south end of the trench was observed and may lead to the process sewer. This trench may be an overflow in the event the concrete box fills with water. Steel grating covers the top of the trench. A concrete pad surrounding the site is painted gray and posted as fixed radiological contamination.

Location: The waste site was located adjacent to the west side of the 313 building near the southwest corner.

Process Description: According to John Remaize (Point of Contact), the site drained HVAC condensate into the process sewer. It is not a french drain as previously suspected. The site is covered with rectangular steel hatch covers and is posted as a confined space.

Steam was produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only ("Inventory of Miscellaneous Streams"). This information differs from that provided by John Remaize (Point of Contact). According to Mr. Remaize the site received HVAC condensate.

Code: 300-79 **Classification:** Not Accepted

Names: 300-79; 313 Building Stormwater Runoff; Miscellaneous Stream #457 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The 313 building was demolished in 2004. The site is a 1.14 meter (44 inch) diameter drywell that received stormwater from six catch basins located to the south and the surrounding 313 Building Parking Lot area. The surrounding area is paved with asphalt and there is no known contamination within the drainage area. The drywell is 1.4 meters (55 inches) deep and is constructed of corrugated steel pipe. Water was observed at the bottom of the site.

Location: The site is located north of the 313 building.

Waste Type: Stormwater Runoff

Waste Description: The "Inventory of Miscellaneous Streams", Revision 3, states that the flow rate is less than 1.9

Description: liters per minute (0.5 gallons per minute) of stormwater runoff only.

Code: 300-81 **Classification:** Accepted
Names: 300-81; 321 Building Steam Condensate; **Reclassification:** Consolidated (2/12/1999)
Miscellaneous Stream #370
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: The drain is a 1.03 meter (3.3 foot) diameter concrete structure with a metal cover. The building source pipe is connected to the drain through the cover.

Location: The site is located on the northwest side of the 321 Building adjacent to Door #07.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to 321 Building. The 321 Building, also known as the Separation Building and Engineering Development Laboratory, provided facilities for hydraulic and mechanical research and development of reactor components. In the past, the building was used as a chemical pilot plant and also did research and development work for the REDOX Plant. A series of cells and tanks ran the entire length of the 321 Building in the south half and at a depth of 3.6 meters (12 feet) below grade. About 37 meters (120 feet) to the south of the building lay 4 underground tanks, each 14.8 meters (48.5 feet) long by 3.1 meters (10 feet) in diameter that were used to hold radioactive wastes. These tanks were located under the 323 Building. The facility is known to have had a number of releases associated with it. WIDS Site UPR-300-4 is an unplanned release associated with the 321 Building that is known to have contaminated the soil around the facility.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: UPR-300-4
Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Code: 300-82 **Classification:** Accepted
Names: 300-82; 321 Building Steam Condensate; **Reclassification:** Consolidated (1/19/1999)
Miscellaneous Stream #371
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**

Description: The site is a 1.04 meter (3.3 foot) diameter french drain with a metal cover. The drain is flush with the ground. An overhead steam line runs north to south above the drain. The source piping has been removed. The soil just north of the french drain is discolored with a rusty stain.

Location: The site is located on the west side of the 321 Building, between the 321 Building and the 352-

D Building.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to 321 Building. The 321 Building, also known as the Separation Building and Engineering Development Laboratory, provided facilities for hydraulic and mechanical research and development of reactor components. In the past, the building was used as a chemical pilot plant and also did research and development work for the REDOX Plant. A series of cells and tanks ran the entire length of the 321 Building in the south half and at a depth of 3.6 meters (12 feet) below grade. About 37 meters (120 feet) to the south of the building lay 4 underground tanks, each 14.8 meters (48.5 feet) long by 3.1 meters (10 feet) in diameter that were used to hold radioactive wastes. These tanks were located under the 323 Building. The facility is known to have had a number of releases associated with it. WIDS Site UPR-300-4 is an unplanned release associated with the 321 Building that is known to have contaminated the soil around the facility.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: UPR-300-4

Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Code: 300-83

Classification: Accepted

Names: 300-83; 321 Building Steam Condensate; Miscellaneous Stream #372

Reclassification: Consolidated (1/19/1999)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is a square concrete structure with a metal cover and labeled, F. D. #35. The concrete structure is raised 12.7 centimeters (5 inches) from the surrounding ground level. Inside the cover is a pipe with a 12.7 centimeter (5 inch) diameter screen cover. The inside of the structure is dry and the pipe appears to be inactive. The concrete structure is 3.6 meters (12 feet) west of the stormwater drain (site code 300-92) in front of the roll-up door.

Location: The site is located on the south side of the 321 Building, outside door #12, and at the bottom of the truck ramp. It is located against the building where two walls form a corner.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to 321 Building. The 321 Building, also known as the Separation Building and Engineering Development Laboratory, provided facilities for hydraulic and mechanical research and development of reactor components. In the past, the building was used as a chemical pilot plant and also did research and development work for the REDOX Plant. A series of cells and tanks ran the entire length of the 321 Building in the south half and at a depth of 3.6 meters (12 feet) below grade. About 37 meters (120 feet) to the south of the building lay 4 underground tanks, each 14.8 meters (48.5 feet) long by 3.1 meters (10 feet) in diameter that were used to hold radioactive wastes. These tanks were located under the 323 Building. The facility is known to have had a number of releases associated with it. WIDS Site UPR-300-4 is an unplanned release associated with the 321 Building that is known to have contaminated the soil around the facility.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: UPR-300-4

Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Code: 300-84

Classification: Accepted

Names: 300-84; 321 Building Vent Valve on Water Line; Miscellaneous Stream #348

Reclassification: Consolidated (1/19/1999)

Type: Valve Pit

Start Date:

Status: Inactive

End Date:

Description: The site is a 2.4 meter (8 foot) diameter, semicircular, steel caisson. It has a hatch opening marked "Confined Space". There are two valves at the bottom. The caisson is 2.2 meters (7.5 feet) deep. The site is marked "W-25" on the side of the caisson. One valve appears to be a main water shut off valve to the 321 building and the other is a drain valve. The 321 Building is unoccupied.

Location: The site is located adjacent to the west wall of the 321 Building.

Release Description: There were no known hazardous or radioactive releases from this water discharge.

Related Sites/ Structures: The site is related to 321 Building. The 321 Building, also known as the Separation Building and Engineering Development Laboratory, provided facilities for hydraulic and mechanical research and development of reactor components. In the past, the building was used as a chemical pilot plant and also did research and development work for the REDOX Plant. A series of cells and tanks ran the entire length of the 321 Building in the south half and at a depth of 3.6 meters (12 feet) below grade. About 37 meters (120 feet) to the south of the building lay 4 underground tanks, each 14.8 meters (48.5 feet) long by 3.1 meters (10 feet) in diameter that were used to hold radioactive wastes. These tanks were located under the 323 Building. The facility is known to have had a number of releases associated with it. WIDS Site UPR-300-4 is an unplanned release associated with the 321 Building that is known to have contaminated the soil around the facility.

Waste Type: Water

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: UPR-300-4

Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Code: 300-85

Classification: Accepted

Names: 300-85; 323 Building Steam Valve Pit;
Miscellaneous Stream #453

Reclassification: Rejected (9/2/1998)

Type: Valve Pit

Start Date:

Status: Inactive

End Date:

Description: The site is a 150 centimeter (60 inch) diameter vertical steel caisson with a sloping steel lid. An access door is located on the lid. The interior of the caisson contains several pipes and valves. The site appears to be a valve pit. The site is posted as a confined space.

Location: The site is located on the south end of the 323 Building near the southwest corner.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Water

Waste

Description:

Code: 300-86

Classification: Accepted

Names: 300-86; Miscellaneous Stream #524; 300 Area
South Parking Lot Stormwater Runoff

Reclassification: Rejected (12/15/1998)

Type: Depression/Pit (nonspecific)

Start Date:

Status: Active

End Date:

Description: The site is a basin approximately 2 meters (6.6 feet) deep that collects stormwater from the main 300 area south parking lot. A lawn has been planted within the basin, and two inlet pipes are visible at the northeast corner and the southeast corner of the site.

Location: The site is located in the southwestern portion of the 300 Area, northeast of the Cypress Street Gate and north of the 320 building.

Process Description: The site collects stormwater from the adjacent parking lot and discharges it to ground. The grass serves to filter and biodegrade potential pollutants prior to infiltration to the soil.

Related Sites/Structures: The site is associated with the 300 Area south parking lot. Drainage from sitecodes 300-103 and 300-104 was diverted to this parking lot drainage system in 2009 (per H-3-315180, sheet 1).

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 18.75 liters per minute (5 gallons per minute).

Code: 300-87

Classification: Not Accepted

Names: 300-87; 309 Building Stormwater Runoff; Miscellaneous Stream #679
Reclassification: None

Type: Process Sewer
Start Date:

Status: Inactive
End Date:

Description: The site is a 10.16 cm (4 in) storm drain that empties into the radioactive process sewer 300 RLWS (H-3-11204, Sheets 1 and 2).

Location: The site is located at the bottom of the stairwell on the west side of the south wing of the 309 Building. The stairwell is below door #10.

Related Sites/ Structures: The site is associated with the 309 Building.

Waste Type: Stormwater Runoff
Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of stormwater only.

Code: 300-88
Classification: Accepted

Names: 300-88; 320 Building Irrigation Line Effluent; Miscellaneous Stream #626
Reclassification: Rejected (9/2/1998)

Type: French Drain
Start Date:

Status: Inactive
End Date:

Description: The site is a french drain that is constructed of concrete and covered with a steel lid.

Location: The site is located in the 300 Area, south of Cypress Street and northwest of the 320 Building.

Process Description: The site receives water from the evacuation of irrigation lines when the lines are drained in the fall.

Waste Type: Water
Waste Description: The site receives irrigation water.

Code: 300-89
Classification: Accepted

Names: 300-89; 320 Building Irrigation Line Effluent; Miscellaneous Stream #627
Reclassification: Rejected (9/2/1998)

Type: French Drain
Start Date:

Status: Inactive
End Date:

Description: The site is a french drain that is constructed of concrete and covered with a steel lid.

Location: The site is located in the 300 Area, south of Cypress Street and north of the 320 Building. WCH corrected the location of 300-89, to be at N 115529.7 m, E 593814.2 m

Process Description: The site receives water from the evacuation of irrigation lines around the 320 Building when the lines are drained in the fall.

Waste Type: Water
Waste Description: The site receives irrigation water.

Code: 300-90 **Classification:** Accepted
Names: 300-90; 320 Building Irrigation Line Effluent; Miscellaneous Stream #628 **Reclassification:** Rejected (9/2/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The french drain is constructed of concrete and covered with a steel lid.
Location: The site is located in the 300 Area, south of Cypress Street, west of Nebraska Street and east of the 320 Building. WCH corrected the location of 300-90, to be at N 115517.4 m, E 593858.5 m.

Process Description: The site receives water from irrigation lines when lines are drained in the fall.

Waste Type: Water
Waste Description: The site receives irrigation water.

Code: 300-91 **Classification:** Accepted
Names: 300-91; 320 Building; Miscellaneous Stream #350 **Reclassification:** Rejected (9/2/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The french drain is constructed of concrete and covered with a steel lid.
Location: The site is located southwest of the 320 building under a tree.
Process Description: The site received water from irrigation lines when lines are drained in the fall.

Waste Type: Water
Waste Description: The site received irrigation water.

Code: 300-92 **Classification:** Accepted
Names: 300-92; 321 Building Stormwater Runoff; Miscellaneous Stream #680 **Reclassification:** Consolidated (1/19/1999)
Type: Injection/Reverse Well **Start Date:**
Status: Active **End Date:**

Description: The drain is a small, steel grate, measuring 0.38 meters by 0.38 meters (1.25 foot by 1.25 foot).

The drain is plugged with dirt.

Location: The drain is located on the south side of the 321 Building, at the bottom of a sloping truck ramp, in front of a roll-up door.

Process Description: The site is designed to receive stormwater runoff from 321 building.

Related Sites/ Structures: The site is associated with the 321 Building.

Waste Type: Stormwater Runoff

Waste Description: The "Inventory of Miscellaneous Streams", Revision 3, states that the flow rate is less than 0.038 liters per minute (0.01 gallons per minute) of stormwater runoff only.

The Site Was Consolidated With:

Code: UPR-300-4

Names: UPR-300-4; Contaminated Soil Beneath the 321 Building; UN-300-4

Code: 300-93

Classification: Not Accepted

Names: 300-93; 324 Building Stormwater Runoff; Miscellaneous Stream #354

Reclassification: None

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site consists of the 324 building storm water drainage system as depicted on construction drawings H-3-56533 and H-3-302821. The site includes 3 catch basins and 1 drywell with all connecting piping features and cleanouts. The site includes the below grade pipe segments for collection of the northwest portion of the 324 building down spouts and one irrigation valve box and associated connecting piping to the catch basin. The site does not include the northeast side storm water collection system as depicted on H-3-307101 and described by WIDS site 300-94.

The site is a 0.65 meter by 0.47 meter (2.1 foot by 1.5 foot) grate in the asphalt parking area on the south side of the 324 Building. It is 3 meters (10 feet) south of the lawn.

Location: The drain is located 9 meters (30 feet) south of the 324 Building.

Related Sites/ Structures: The site was associated with the 324 Building.

Waste Type: Stormwater Runoff

Waste Description: When the site was active, the flow rate was less than 0.19 liters per minute (0.05 gallons per minute) of stormwater runoff only.

Code: 300-94

Classification: Not Accepted

Names: 300-94; 324 Building Stormwater Runoff; Miscellaneous Stream #711; 300-234

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a network of a drywell and a catch basin network installed to eliminate flooding on the east side of the 324 building. The drain and the catch basin are subsurface structures and are not visible. A 0.63 by 0.53 meter grate is visible in the gravel near the northeast corner of

the 324 Building. The building escort for the 10-26-98 site visit pointed out that there is an identical grate at the southeast corner of the building, with a concrete trough leading to it to help direct water flow. The second grate is approximately 9 meters (30 feet) south of the one on the northeast corner. The two grates are in line with each other, parallel to the east side of the building. A PVC inlet and outlet pipe is visible through the grates. The two grates appear to be connected and are assumed to be stormwater collection points for the drainage system.

Location: The drain is located approximately 21.3 meters (70 feet) north of the northeast corner of the 324 building. A surface grate is located 1.2 meters (4 feet) east of the 324 Building, adjacent to the exhaust ventilation fans.

Waste Type: Stormwater Runoff

Waste Description: The "Inventory of Miscellaneous Streams", Revision 3, states that the flow rate is less than 0.79 liters per minute (0.20 gallons per minute) of stormwater only.

Code: 300-95

Classification: Accepted

Names: 300-95; 324/336 Buildings Stormwater Runoff and Steam Condensate; Miscellaneous Stream #425

Reclassification: Rejected (1/19/1999)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a french drain that receives stormwater runoff and steam condensate. All that can be seen of the site is an inset, 1.37 meter (4.49 foot) diameter, thin metal cover or lid. This cover is inset in a round concrete pad and appears to be bolted onto an underlying grate. The site is labeled "Confined Space." The site and concrete pad are higher in elevation than the surrounding gravel. No incoming or nearby pipes were visible during the November 20, 1998, walkdown.

Location: The site is due north of the west wing of the 337 Building, 24 meters (78.7 feet) southwest of the southwest corner of the 338 Building, 35 meters (114.8 feet) southeast of the southeast corner of the 336 Building and 130 meters (426.5 feet) east/southeast of the 324 Building.

Release Description: There were no known hazardous or radioactive releases from the steam condensate discharge.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 324 and 336 Buildings.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow for stormwater runoff and steam condensate is less than 0.05 gallons per minute.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow for stormwater runoff and steam condensate is less than 0.05 gallons per minute.

Code: 300-96 **Classification:** Accepted
Names: 300-96; 325 Building Steam Condensate; Miscellaneous Stream #707 **Reclassification:** Rejected (9/2/1998)
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: The site is a 132.1 centimeter (52 inch) diameter french drain constructed of concrete and covered with a steel lid. A 3.8 centimeter (1.5 inch) diameter pipe extends from the west wall of the 325 building to the french drain.
Location: The site is located on the west side of the 325 building.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description:

Code: 300-97 **Classification:** Not Accepted
Names: 300-97; 325 Building Stormwater Runoff and Fire System Testing Water; Miscellaneous Stream #706 **Reclassification:** None
Type: French Drain **Start Date:**
Status: Active **End Date:**
Description: The site is a drain that is covered by a rusted perforated steel plate, 0.46 meters (1.5 feet) square. The site drains a small asphalt pad and a pipe coming out of bottom of the fire system shed. The drain cover plate appears to be sealed to the asphalt. Therefore, it was not possible to determine the depth of the site.
Location: The site is located on the southeast side of the 325 Building, 3.96 meters (13 feet) from the building, and adjacent to the fire system shed that is attached to the 325 Building.
Related Sites/Structures: Approximately, 12.2 meters (40 feet) south of the drain, a pipe exits out of a concrete wall onto the roadway. Another stormwater drain is at the bottom of the roadway. It was not possible to determine if 300-97 is attached to the pipe.

Waste Type: Stormwater Runoff
Waste Description:

Code: 300-98 **Classification:** Not Accepted
Names: 300-98; 325 Building South Stairwell Drain; Miscellaneous Stream #264; 300-229 **Reclassification:** None
Type: French Drain **Start Date:**
Status: Active **End Date:**

Description: stormwater from a leaky roof.

Location: The site is located inside the 325 Building south stairwell.

Waste Type: Stormwater Runoff

Waste Description: The site receives less than 0.038 liters (0.01 gallons) per minute of stormwater runoff.

Code: 300-99 **Classification:** Accepted

Names: 300-99; 325 Building Nitrogen Tank Blowdown Miscellaneous Stream #265; Injection Well #399-3 **Reclassification:** Rejected (9/2/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:**

Description: The site is not visible without entering the confined space under the compressed gas storage loading dock. The loading dock has skirting around it, and therefore, the site is not visible. A limited field walkdown was performed for this site. No access could be gained to the site.

Location: The site is located on the northeast corner of the 325 Building, under an elevated gas storage dock.

Waste Type: Water

Waste Description: The site received condensate blowdown from a liquid nitrogen tank. The tank has been removed.

Code: 300-100 **Classification:** Not Accepted

Names: 300-100; 325 Building Stormwater Runoff; Miscellaneous Stream #408 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site drains stormwater from the chiller pad to the ground. The drain is covered with a 68.6 centimeter by 61 centimeter (27 inch by 24 inch) steel grate. The site is 22.9 centimeters - 25.4 centimeters (9 inches - 10 inches) deep and contains water just below the grating.

Location: The site is located on the east side of the 325 building on the chiller pad.

Waste Type: Stormwater Runoff

Waste Description:

Code: 300-101 **Classification:** Accepted

Names: 300-101; 326 Building Stormwater Runoff and Steam Condensate; Miscellaneous Stream #409 **Reclassification:** Rejected (9/2/1998)

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Active **End Date:**

Description: The site is a roadway drain, with a 0.4 meter by 0.5 meter (1.3 foot by 1.7 foot) rectangular perforated steel cover. The cover is visible, but the structure is full of sand and gravel. The site drains stormwater from a loading dock and a large area of asphalt parking space. A steel pipe 3.7 meters (12 feet) away, on the side of the building, appears to be the steam condensate drain.

Next to this pipe is a lock box that is marked with a "Radioactively controlled area" sign. The steam condensate component for this site has been routed to the sanitary sewer. According to the "Inventory of Miscellaneous Streams", Revision 3, the site is active for stormwater only. The disposal structure is a non-engineered structure.

Location: The site is on the east side of the 326 Building, below the loading dock, 1.3 meters (4.5 feet) from the dock. It is 3.7 meters (12 feet) northeast of the probable steam condensate drain line.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Stormwater Runoff

Waste Description: Waste is also reported to be steam condensate. Lock box next to possible steam condensate line is marked with a warning sign: "Radioactively controlled area." The materials loaded at the loading dock are unknown, but no spills or unplanned releases are known.

Code: 300-102 **Classification:** Accepted

Names: 300-102; 328 Building Steam Condensate; Miscellaneous Stream #353 **Reclassification:** Rejected (12/15/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is an injection well that received steam condensate. The injection well is a 96 centimeter (38 inch) diameter structure with a heavy metal cover that has four holes in it. It is flush with the gravel surface surrounding it. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located on the north side of the 328 Building, just east of a roll up door entrance. The site is between a shed and the roll up door.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 328 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-103 **Classification:** Not Accepted

Names: 300-103; 329 Building Stormwater Runoff; Miscellaneous Stream #422 **Reclassification:** None

Type: Sump **Start Date:**

Status: Inactive

End Date:

Description: The site is a storm drain covered with a 63.5 centimeter by 45.7 centimeter (25 inch by 18 inch) steel grating that drains stormwater from the surrounding area. There are no contamination postings near the site.

Location: The site is located near the southeast corner of the 329 building just off the loading dock.

Process Description: Additional research found that this location is actually a Catch Basin that was connected to the 300 Area Sanitary Sewer (300 SSS). Construction drawing H-3-304716 note 3C references the catch basin design type. The specifications for the WSDOT M21-01 Standard Plan B-1B Type 1P Parking Lot Catch Basin require that the catch basin be water tight. The stream was later re-routed to the Retention Process Sewer. Per drawing H-3-315180, sheet 1, the storm water was re-routed again in 2009 to the 300 Area South Parking Lot Stormwater Runoff (see sitecode 300-86).

Related Sites/ Structures: The stormwater run off is now associated with 300-86 drainage system.

Waste Type: Stormwater Runoff

Waste Description:

Code: 300-104

Classification: Not Accepted

Names: 300-104; 329 Building Stormwater Runoff; Miscellaneous Stream #546

Reclassification: None

Type: Sump

Start Date:

Status: Inactive

End Date:

Description: The site is a storm drain (catch basin) covered with a 63.5 centimeter by 45.7 centimeter (25 inch by 18 inch) steel grating that drains stormwater from the surrounding area. There are no contamination postings near the site.

Location: The site is located on the east side of the 329 building just off the loading dock.

Process Description: Additional research found that this location is actually a Catch Basin that was connected to the 300 Area Sanitary Sewer (300 SSS). Construction drawing H-3-304716 note 3C references the catch basin design type. The specifications for the WSDOT M21-01 Standard Plan B-1B Type 1P Parking Lot Catch Basin require that the catch basin be water tight. The stream was later re-routed to the Retention Process Sewer. Per drawing H-3-315180, sheet 1, the storm water was re-routed again in 2009 to the 300 Area South Parking Lot Stormwater Runoff (see sitecode 300-86).

Related Sites/ Structures: The stormwater run off is now associated with 300-86 drainage system.

Waste Type: Stormwater Runoff

Waste Description:

Code: 300-105

Classification: Accepted

Names: 300-105; 331 Building Steam Condensate; Miscellaneous Stream #513; Pit U1

Reclassification: Rejected (9/2/1998)

Status: Active

End Date:

Description: The site is a french drain constructed of concrete and covered with a steel lid. The drain has two 10.2 centimeter (4 inch) diameter pipes entering the drain at the bottom. Presumably, the site drains stormwater from drains located near two nearby entrances to the 331 building.

Location: The site is located on the west side of the 331 building near the kennels.

Waste Type: Stormwater Runoff

Waste

Description:

Code: 300-108

Classification: Not Accepted

Names: 300-108; 331 Building Stormwater Runoff;
Injection Well #37; Miscellaneous Stream #448

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a stormwater french drain that drains the surrounding paved area and roof drains from the 331 building at a low point. There is no known contamination within the drainage area.

Location: The site is located on the west side of the 331 building, and 12.5 meters (41 feet) south of the northwest corner of the building.

Waste Type: Stormwater Runoff

Waste

Description:

Code: 300-111

Classification: Not Accepted

Names: 300-111; 337 Building Stormwater Runoff;
Miscellaneous Stream #516

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain; a round concrete pipe 0.7 meters (2.25 feet) in diameter, at least 1.2 meters (4 feet) deep. Water covers the bottom, so the total depth was not determined. The site drains stormwater from the asphalt alley way used to access the trash and recycled cardboard pickup containers, and provide pedestrian access to the 337 Building. The miscellaneous streams report says this site is a "non-engineered structure" and "deleted" but it does not appear to be either case.

Location: The site is on the east side of the 337 Building, north of the cafeteria, in an open alley way. The drain is 7 meters (23 feet) from the east door into the 337 Building.

Process The site received only stormwater runoff.

Description:

Waste Type: Stormwater Runoff

Waste

Description: Site receives only stormwater runoff.

Code: 300-112

Classification: Accepted

Names: 300-112; 340 P-3 Pump Pit; Miscellaneous

Reclassification: Rejected (1/15/1999)

Stream #428; Retention Process Sewer Pump Pit
#3 French Drain

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The Pump Pit is an engineered structure with an entry hatch labeled "Non-Permit Confined Space". The drain is at the bottom of the pit. It has a perforated, circular cover that measures approximately 0.61 meters (2 feet) in diameter. The pumps and piping have been removed.

Location: The drain is located at the bottom of the Retention Process Sewer Pump Pit (P-3 Pump Pit). The pump pit is located at the southeast corner of the 307 Retention Basins.

Process Description: The drain received leakage and drainage from the pump. The pump was flushed with clean service water during routine freeze protection maintenance.

Waste Type: Water

Waste Description: When the site was active, it received flush water drainage and pump leakage. The source of the water was uncontaminated potable water. The flow rate was less than 0.038 liters (0.01 gallons) per minute.

Code: 300-113 **Classification:** Accepted

Names: 300-113; 340 Building Steam Condensate/ Water Heater Overflow; Miscellaneous Stream #341 **Reclassification:** Rejected (1/15/1999)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The drain is a 0.46 meter (18 inch) diameter metal pipe that extends slightly above grade. A 1.3 centimeter (0.5 inch) diameter pipe exits the building wall and terminates over the drain. The pipe is connected to a water heater overflow valve, that is inside the 340 Building. Before the steam utility was removed from the building, the drain received steam condensate.

Location: The drain is located at the southwest corner of the 340 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The site received steam condensate before the steam was shut off in the building. When the site was active (steam condensate), the flow rate was less than 0.038 liters (0.01 gallons) per minute. Currently, the site is set up to receive overflow from the water heater located inside the 340 Building. The flow rate for this activity is unknown. The effluent from the water heater is nondangerous/nonradioactive potable water.

Code: 300-114 **Classification:** Accepted

Names: 300-114; 340A Building Steam Condensate; Miscellaneous Stream #427 **Reclassification:** Rejected (1/15/1999)

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: Currently, there are no visual surface features. The drain area was backfilled with clean gravel when the steam system was removed from the building. The gravel over the drain is slightly darker than the other gravel in the area.

Location: The site is located east of the 340A building, adjacent to the chain link fence.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 340A Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters (0.01 gallons) per minute of steam condensate.

Code: 300-115 **Classification:** Not Accepted

Names: 300-115; 340B Building Backflow Preventer Emergency Drain; Miscellaneous Stream #426 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: Currently, there are no visible surface features. The drain was covered with clean gravel when the source was abandoned in 1996. The gravel over the drain is slightly darker than the other gravel in the area. At least some component of the structure has been removed. The gravel would not cover the height of the exposed part of the structure. It may be that the lip of the structure was knocked into the drain or the entire drain may have been removed.

Location: The drain is located near the southeast corner of the 340B building.

Related Sites/ Structures: The site was related to the 340B Building and the service water backflow preventer.

Waste Type: Water

Waste Description: The drain would have received nondangerous/nonradioactive (potable) water in the event of a failure of the service water backflow preventer. There has been no known failure of the backflow preventer. Thus, this site would not have received any discharge.

Code: 300-116 **Classification:** Accepted

Names: 300-116; 3506A Building Steam Condensate; Miscellaneous Stream #381 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is covered by a 0.48 meter (1.57 foot) by 0.48 meter (1.57 foot) square metal lid. This french drain appears to be constructed of concrete. The top is slightly depressed relative to the surrounding gravel. A pipe from the overhead steam line enters the

ground nearby. The pipe is labeled "HPD-TRP-057." According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located approximately 3.5 meters (11.5 feet) east of the north entry door of the 3506A Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3506A Building and steam trap, HPD-TRP-057.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-117

Classification: Accepted

Names: 300-117; 3506A Building Steam Condensate; Miscellaneous Stream #382

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1998

Description: The site is a french drain that is constructed of concrete. The top of the drain is flush with the ground surface and is covered by two metal lids. Both lids are labeled "Confined Space." The west lid has a label saying "U-58." The east lid had "U58" written on it. A metal pipe, 0.1 meters (0.3 feet) in diameter and 0.24 meters (0.79 feet) in length, extends vertically from the west lid. This metal pipe appears to be a vent. It does not appear to extend into the cavity of the french drain. Two pipes from the overhead steam line enter the ground nearby. This site is surrounded by gravel and a metal safety barricade. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is just west of the northeast corner of the 3506A Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3506A Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-118

Classification: Accepted

Names: 300-118; 3621D Building Steam Condensate; Miscellaneous Stream #700; Pit U-7 **Reclassification:** Rejected (12/15/1998)

Type: Valve Pit **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is a valve pit with a dirt floor. Steam condensate was discharged onto the floor of the pit. The pit has a square concrete base. It is at the bottom of a slope so the top of the concrete base ranges from 21 to 35 centimeters (8.3 to 13.8 inches) above the ground surface. The valve pit is covered by an inset, square metal lid that is 0.81 meters (2.66 feet) by 0.81 meters (2.66 feet). The lid is labeled "Confined Space" and "U-7." Three valves are visible nearby (MSS-V-337, MSS-V-030 and HPD-V-3041A). Two pipes approximately 3.5 centimeters (1.4 inches) in diameter extend from the concrete base, one on the south side and one on the west side. These two pipes then make a 90 degree turn and enter the ground. During the site walkdown, a ladder, pipes and valves were visible inside the drain. Condensation was visible on the bottom of the lid and moisture was visible on the pipes and valves inside the pit and closest to the lid. At least three valves and five pipes were observed inside the structure. Also visible was an underground area that opens up to the east of the inlet. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is southwest of the northwest corner of the 3621D Building. It is outside the fence that surrounds the building. The 3621D building is located southeast of the intersection of Locust Street and George Washington Way.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to the 300 Area Condensate Return System.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.38 liters per minute (0.1 gallons per minute) of steam condensate only.

Code: 300-119 **Classification:** Accepted

Names: 300-119; 3621D Air/Condensate Blowdown Drain; 3621D HVAC Condensate; Miscellaneous Stream #401 **Reclassification:** Rejected (12/15/1998)

Type: Injection/Reverse Well **Start Date:**

Status: Active **End Date:**

Description: The drain had been an open corrugated metal pipe filled with rocks. The source pipe exited the building wall and with a 90 degree elbow to connect the pipe to the french drain. The building wall and the french drain rocks were stained with rust. The drain structure was removed when the 3621-D building was demolished.

Location: The drain is located adjacent to the east wall of the 3621-D building inside the fenced area. The 3621D building is located southeast of the intersection of Locust Street and the George Washington Way extension.

Related Sites/ Structures: The site is related to 3621D Building.

Structures:**Waste Type:** Water**Waste Description:** According to the "Inventory of Miscellaneous Streams", Revision 3, the site has potentially received hydrocarbons. The report documented the flow rate as less than 0.038 liters per minute (0.01 gallons per minute).**Code:** 300-120**Classification:** Accepted**Names:** 300-120; 3621D Air Driven Starter Motor Discharge Drain; 3621D Building Diesel Generator Cooling System Condensate; Miscellaneous Stream #402**Reclassification:** Rejected (12/15/1998)**Type:** Injection/Reverse Well**Start Date:****Status:** Active**End Date:****Description:** The site was a 0.9 meter (2.9 feet) diameter concrete structure with a metal grate cover. The unit was filled with rocks. Four pipes, one for each air starter motor, exited the west wall of the 3621D building near the foundation. The pipes teed into a larger aboveground line that runs south, parallel to the building wall. The line elbowed to the west and then down where it is attached to the grate. The grate and the rocks were stained with a black, oily substance. The drain structure was removed when the 3621-D building was demolished.**Location:** The drain is located approximately 1.2 meters (4 feet) from the west wall of the 3621D building. The 3621D building is located southeast of the intersection of Locust Street and the George Washington Way extension.**Waste Type:** Water**Waste Description:** The site receives air and small amounts of condensate from the air starter motors in the 3621D Building. The air and condensate may contain small quantities of oil.**Code:** 300-122**Classification:** Accepted**Names:** 300-122; 366 Building Fuel Oil Bunker Loading Station Steam Condensate; Miscellaneous Stream #344**Reclassification:** Rejected (12/15/1998)**Type:** French Drain**Start Date:****Status:** Inactive**End Date:** 1/1/1998**Description:** The site is a french drain that received steam condensate from the 366 Building fuel oil bunker loading station. Only a small portion of the french drain's pipe is exposed. It could not be ascertained whether the pipe was composed of clay or discolored concrete. The drain is covered with a 0.65 meter (2.13 foot) rusted metal cover and the soil and gravel surrounding the site appears to be discolored by rust. The top of the lid is 5 to 8 centimeters (2 to 3.1 inches) above ground surface. There are also granular ash deposits on the ground in the general area east/northeast of the 384 powerhouse. The ground surface surrounding the site is slightly depressed which could allow the pooling of stormwater. The site is less than a meter (3.3 feet) south of a line of posts labeled "Radiologically Controlled Area" that appears to surround the 3715 and 303E buildings. LPD-TRP-053, -057 and -058 are on a concrete pad at the northwest corner of the 366 Building. There is a black, tar-like residue on this pad. According to the "Inventory of Miscellaneous Streams," Revision 3, there was a potential for fuel oil to contaminate the discharge. The document also states the site is inactive, source abandoned.**Location:** The site is located southwest of the southwest corner of the 3715 Building and north of the northwest corner of the 366 Building.**Description:** Steam was produced from a water system that had been sent through a water softening system to

Process Description: remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: This site is associated with the 366 Building fuel oil bunker loading station.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the site has the potential to be contaminated with fuel oil. When this site was active, the flow rate was less than 0.38 liters per minute (0.1 gallons per minute).

DynCorp has reviewed the site and stated the following. The dark stains in the photo appear to correlate to coal powder left over from the powerhouse. There were small piles of this material throughout the area. There was a potential for runoff of fuel oil because of the proximity of the fuel bunkers. However, no fuel oil stained soil was observed near the drain and there is no evidence of discharges to this site.

Code: 300-124	Classification: Accepted
Names: 300-124; 366 Building Fuel Oil Bunker Steam Condensate; Miscellaneous Stream #653	Reclassification: Rejected (12/15/1998)
Type: French Drain	Start Date:
Status: Inactive	End Date: 1/1/1998

Description: The site is a french drain that received steam condensate from steam lines on top of the 366 Building fuel oil bunker. The french drain's metal cover is the only part of the site that is visible; it is 0.33 meters (1.08 foot) in diameter. The top of the cover is approximately 5 centimeters (2 inches) above the ground surface. There is a slight depression on the southwest side of the site where stormwater could collect. The gravel and soil surrounding the site appears to be discolored by rust. LPD-TRP-054 is on a concrete pad by the southwest corner of 366 Building. There is a black, tar-like residue on this pad. According to the "Inventory of Miscellaneous Streams," Revision 3, there was a potential for fuel oil to contaminate the steam condensate. The document also states the site is inactive, source abandoned.

Location: The site is located off the southwest corner of the 366 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 366 Building fuel oil bunker.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, there is a potential for fuel oil to contaminate the steam condensate. When this site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

DynCorp has reviewed the site and stated the following. The dark stains in the photo appear to correlate to coal powder left over from the powerhouse. There were small piles of this material throughout the area. There was a potential for runoff of fuel oil because of the proximity of the fuel bunkers. However, no fuel oil stained soil was observed near the drain and there is no evidence of discharges to this site.

Code: 300-125 **Classification:** Accepted

Names: 300-125; 3702 Building Steam Condensate; Miscellaneous Stream #346 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site was a french drain that collected steam condensate. The previous location for the 3702 Building is currently a cobble-covered field. No evidence of the site remains. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: According to the "Inventory of Miscellaneous Steams," Revision 3, the site was located west of the stairs on the north side of the former 3702 building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3702 Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-126 **Classification:** Accepted

Names: 300-126; 3703 Building Steam Condensate; Miscellaneous Stream #431 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site was a french drain that collected steam condensate. The previous location of the 3703 Building is currently a cobble and gravel covered field. No evidence of a french drain was visible during the site walkdown. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source permanently abandoned.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site was located at the south center of the 3703 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3703 Building, which has been demolished.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-127 **Classification:** Not Accepted

Names: 300-127; 3705 Building Stormwater Runoff; Miscellaneous Stream #410 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain located in a soil and gravel covered area. Nearby, a roof drain pipe can be seen extending down the outer wall of the 3705 Building into the ground. According to the "Inventory of Miscellaneous Streams," Revision 3, this french drain does not have surface access. No drain was visible during the site walkdown.

Location: The "Inventory of Miscellaneous Streams," Revision 3, states the site is located at the northeast corner of the 3705 Building.

Related Sites/ Structures: The site is associated with the 3705 Building.

Waste Type: Stormwater Runoff
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-128 **Classification:** Not Accepted

Names: 300-128; 3705 Building Stormwater Runoff; Miscellaneous Stream #411 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a french drain that collected stormwater runoff. According to the "Inventory of Miscellaneous Streams," Revision 3, the stream is "Not Active" and the "Disposal Site Permanently Abandoned." A roof drain was visible nearby which appeared to enter the 3705 Building; however, no french drain was visible during the site walkdown that could be associated with this roof drain.

Location: The "Inventory of Miscellaneous Streams," Revision 3, states the site was located at the northwest corner of the 3705 Building.

Related Sites/ Structures: The site is associated with the 3705 Building.

Waste Type: Stormwater Runoff
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of stormwater runoff.

Code: 300-129 **Classification:** Not Accepted

Names: 300-129; 3705 Building Stormwater Runoff; Miscellaneous Stream #412 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain located in a cobble-covered area. A roof drain is visible nearby. According to the "Inventory of Miscellaneous Streams," Revision 3, this french drain does not have surface access. No drain was visible during the site walkdown.

Location: The "Inventory of Miscellaneous Streams," Revision 3, states the site is at the southeast corner of the 3705 Building.

Related Sites/ Structures: The site is associated with the 3705 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-130 **Classification:** Not Accepted

Names: 300-130; 3705 Building Stormwater Runoff; Miscellaneous Stream #413 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that collects stormwater runoff. A roof drain is visible nearby. According to the "Inventory of Miscellaneous Streams," Revision 3, the french drain does not have surface access. No drain was visible during the site walkdown.

Location: The "Inventory of Miscellaneous Streams," Revision 3, states the site is at the southwest corner of the 3705 Building.

Related Sites/ Structures: The site is associated with the 3705 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-131 **Classification:** Accepted

Names: 300-131; 3706 Fire Sprinkler System Water; Miscellaneous Stream #515 **Reclassification:** Consolidated (1/19/1999)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is the discharge point for fire sprinkler system water. The drain is a clay pipe with the outer diameter of 0.42 meters (1.38 feet) and is not covered by a lid. The top of the clay pipe is above grade except where moss is encroaching. The pipe appears to be filled with cobbles and rocks to within 0.3 meters (0.98 feet) of its top. The rocks and cobbles inside the drain appear rusty. Above the site are two capped metal ports labeled "Fire Department Connection." Below these ports, two metal pipes extend from the building and terminate with open ends above the drain. One of these pipes is approximately 5 centimeters (2 inches) in diameter and the other is approximately 2 centimeters (0.8 inches) in diameter.

During the October 26, 1998, walkdown, an opening in the side of the building for a third pipe was observed; this opening has not been plugged. The site is surrounded by sand, gravel and moss. The south side of the drain abuts the 3706 Building, which is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located on the north side of the 3706 Building. It is approximately 5.5 meters (18 feet) east of door #06.

Release Description: There were no known hazardous or radioactive releases from this water discharge.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Water

Waste Description: The site receives drainage from the fire sprinkler system at a rate of less than 3.8 liters per minute (1 gallon per minute). Fire sprinkler water is exempt from permitting. However, based on past practice activities at the 3706 Building and potential releases to the soil column, the disposal structure and soil should be surveyed to determine if radioactive contamination is present. The disposal structure is immediately adjacent to the 3706 Building.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-132

Classification: Accepted

Names: 300-132; 3706 Building Steam Condensate; Miscellaneous Stream #368

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site has been described as a french drain that received steam condensate. During the November 18, 1998, walkdown, there did not appear to be an engineered structure at the site's location. The site appears to be a rock and cobble filled depression next to the 3706 Building. The depression is surrounded by soil-covered asphalt. The rocks and cobbles in the depression as well as the side of the 3706 Building appear to be rust stained. On the south side of Door #02, an approximately 10 centimeter (4 inch) diameter metal pipe exits the east side of the 3706 Building, turns and enters the ground. Forty centimeters (1.3 feet) to the east of this pipe is a concrete structure with a 0.66 meter (2.17 feet) by 0.66 meter (2.17 feet) metal cover. In addition to steam condensate, the site also appears to have received fire sprinkler system water. Four metal pipes terminate over the depression. Three of these four pipes exit the east side of the 3706 Building near a Fire Department Connection. An approximately 2 centimeter (0.8 inch) diameter metal pipe extends from the building 0.95 meters (3.1 feet) above the ground surface; an approximately 6 centimeter (2.4 inch) diameter metal pipe extends from the building 0.90 meters (3 feet) above the ground surface and an approximately 4 centimeter (1.6 inch) metal pipe extends from the building 0.8 meters (2.6 feet) above the ground surface. These three pipes terminate open-ended over the depression. The fourth pipe is approximately 8 centimeters (3.1 inches) in diameter and exits the building 3 to 4 meters (9.8 to 13.1 feet) above the ground surface. It could not be ascertained whether this pipe is still open or whether it had been plugged. There is a U-shaped section of 8 centimeter (3.1 inches) pipe attached to the east wall of the 3706 Building just below the Fire Department Connection; this section of pipe has open ends. According to John Remaize, the steam and fire water for the building are still active. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source

abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is on the east side of the 3706 Building, just north of door #02.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-133

Classification: Accepted

Names: 300-133; 3706 Building Steam Condensate; Injection Well #27; Miscellaneous Stream #367

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that used to receive steam condensate. The drain has a square concrete base with a 0.66 meter (2.17 foot) by 0.66 meter (2.17 foot) metal lid. What appear to be rust stains are on the lid and surrounding concrete. The remains of "FD 27" written in paint can be seen on the side of the building next to the site. There is also writing on the metal lid but it is illegible due to age. Two metal pipes, both approximately 3.5 centimeters (1.4 inches) in diameter, extend from the east side of the 3706 Building and enter the lid. A metal pipe elbow extends from the ground between the site and 3706. This pipe is approximately 5 centimeters (2 inches) in diameter and terminates open ended. A third steam pipe extends from the east side of the 3706 Building approximately 2.5 meters (8.2 feet) north of the site. This pipe terminates approximately 0.5 meters (1.6 feet) above the ground surface and appears to have been plugged. The site is surrounded by concrete and sand. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: Located north of the former Health Service Center on the east side of 3706.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to

produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-134

Classification: Accepted

Names: 300-134; 3706 Building Steam Condensate; Miscellaneous Stream #362

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The drain has a concrete base and is covered by a 0.66 meter (2.17 foot) by 0.66 meter (2.17 foot) metal lid. The site is surrounded by gravel and weeds. An approximately 2.5 centimeter (1 inch) diameter metal pipe extends from the east wall of the courtyard, makes a 90 degree turn and enters the ground approximately 0.5 meters (1.6 feet) from the site. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located in the eastern courtyard of the 3706 Building. It is located along the east wall, almost 5 meters (16.4 feet) from the northeast corner.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-136 **Classification:** Accepted

Names: 300-136; 3706 Building Steam Condensate; Miscellaneous Stream #366 **Reclassification:** Consolidated (1/19/1999)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that received steam condensate. The drain is a clay pipe with an outer diameter of 0.85 meters (2.79 feet). The drain is covered by a metal lid with some perforations. The site is surrounded by sand and gravel, some of which partially covers the lid. The upper lip of the clay pipe is breaking up. The top of the pipe is flush with the ground surface for approximately half of its circumference; the rest is 1 to 2 centimeters (0.4 - 0.8 inches) above the ground surface. Two roof drains are visible nearby; some stormwater runoff may be able to enter the drain. Two metal pipes extend from the 3706 Building approximately 3 meters (9.8 feet) west of the site and enter the ground. One pipe is approximately 5 centimeters (2 inches) in diameter and the other is approximately 12 centimeters (4.7 inches) in diameter. The "Inventory of Miscellaneous Streams," Revision 3, lists the site as inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is approximately 10 meters (32.8 feet) east of the westernmost entrance on the north side of the 3706 Building, and just west of Door #07.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-137 **Classification:** Accepted

Names: 300-137; 3706 Building Steam Condensate; Miscellaneous Stream #440 **Reclassification:** Consolidated (1/19/1999)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site has been described as a french drain that received steam condensate. During the November 20, 1998, walkdown, an engineered structure could not be discerned. It could not be ascertained whether or not the condensate stream was active or not, but the overhead steam line

from 3706-BA, which is on the opposite side of Apple Street, to the 3706 Building did appear to be active - water was dripping from a valve labeled MSS-V-3706. The overhead steam line splits in two outside the 3706 Building. One of the lines enters the north side of the building and the other disappears into the sand. The latter is approximately 9 centimeters (3.6 inches) in diameter. There are pipes extending from the 3706 Building on either side of this site. John Remaize believes this site is actually located just west of the third window west of Door #06. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is on the north side of the 3706 Building, just west of Door #06.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-138

Classification: Accepted

Names: 300-138; 3706 Building Steam Condensate; Miscellaneous Stream #360

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The drain has a concrete base and is covered by a 0.66 meter (2.17 feet) by 0.66 meter (2.17 feet) metal lid. The site is surrounded by gravel. An approximately 2.5 centimeter (1 inch) diameter metal pipe extends from the north wall of the courtyard, makes a 90 degree turn and enters the ground approximately 0.5 meters (1.6 feet) from the site. This pipe has had a section removed from it. The area between the site and the north wall of the courtyard appears to be discolored by rust. The "Inventory of Miscellaneous Streams," Revision 3, lists the site as inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located in the eastern courtyard of the 3706 Building. It is located along the north wall of the courtyard, approximately 13 meters (42.7 feet) west of the northeast corner.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-139

Classification: Accepted

Names: 300-139; 3706 Building Steam Condensate; Miscellaneous Stream #357

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The drain is a clay pipe covered by a 0.77 meter (2.53 foot) diameter metal lid. The lid has perforations in it. The top of the clay pipe ranges from approximately 1 to 5 centimeters (0.4 to 2 inches) above grade. Inside, a metal pipe enters the north side of the drain and another enters the west side of the drain. There also appear to be unattached segments of pipe resting on the floor of the drain. What appears to be a green garden hose enters the drain through a break in the clay pipe. This hose is not connected to any source. There is not any discoloration on the outside of the drain or the surrounding area, but the interior of the drain and the pipes found there appear to be discolored by rust. During the November 11, 1998, walkdown, the interior of the drain appeared to be dry. The site is surrounded by gravel. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located in the middle courtyard of the 3706 Building. It is approximately 3 meters (9.8 feet) from the northeast corner of the courtyard.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Structures.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.19 liters per minute (0.05 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-140

Classification: Accepted

Names: 300-140; 3706 Building Steam Condensate; Miscellaneous Stream #356

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The drain is a concrete structure with the inner dimensions of 0.82 meters (2.69 feet) by 0.60 meters (1.97 feet) and is covered by a metal grate. The drain abuts the north wall of the 3706 Building. A second concrete structure abuts the drain to the north. This second structure is covered by a 0.66 meter (2.17 feet) by 0.66 meter (2.17 feet) metal lid. An approximately 10 centimeter (4 inch) diameter opening is visible on the north side of the drain, almost 0.6 meters (2 feet) from its top. Access to the process sewer is approximately 3.5 meters (11.5 feet) to the northeast of the site. It appears as though the drain received fire sprinkler system water in addition to steam condensate. Four metal pipes terminate open-ended over the drain's grate. An approximately 6 centimeter (2.4 inch) pipe extends from the north side of the 3706 Building 0.95 meters (3.1 feet) above the ground surface; an approximately 4 centimeter (1.6 inch) pipe extends from the building 0.6 meters (2 feet) above the ground surface; an approximately 2 centimeter (0.8 inch) pipe extends from the building 0.52 meters (1.7 feet) above the ground surface, and an approximately 3 centimeter (1.2 inch) pipe extends from the building 0.15 meters (0.5 feet) above the ground surface. All four pipes exit the building near a Fire Department Connection. The pipes entering the drain and the grate covering the drain appear to be discolored by rust. Approximately a meter to the east of the site, what appears to be an approximately 15 centimeter (5.9 inch) diameter steam pipe enters the ground. The lower 1.2 meters (3.9 feet) of this pipe appear to be of newer construction than the upper section; the upper section has rust marks from the wires that encircle it while the lower section doesn't. During the November 18, 1998, walkdown, there was standing water in the drain. The surface of the water was approximately 0.6 meters (2 feet) from the top of the drain. There had not been any rainfall for almost 2 weeks at that time. According to John Remaize, the steam and fire water for the building are still active. There is a 30 centimeter (11.8 inches) diameter clay pipe 4.3 meters (14.1 feet) east of the site. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain is within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located on the north side of the 3706 Building, near the northeast corner. The site is just east of Door #05.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added

to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.19 liters per minute (0.05 gallons per minute).

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-141

Classification: Accepted

Names: 300-141; 3706 Building Steam Condensate; Injection Well #29; Miscellaneous Stream #439

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The french drain has been excavated and removed. The waste site was a french drain that received steam condensate. The drain appeared to be a concrete pipe with a 0.91 meter (3 foot) metal lid at grade level; however, the site is well obscured by sand and gravel. During the October 26, 1998, walkdown, the metal lid appeared to be ajar. There are two steam pipes entering the ground approximately 3 meters (9.8 feet) west of the site. One of these pipes is approximately 7 centimeters (2.8 inches) in diameter and the other is approximately 8 centimeters (3.1 inches) in diameter. There is also a metal pipe extending from the south side of the building next to the site. This pipe terminates approximately 1.8 meters (5.9 feet) above the ground surface and has been plugged. This third pipe is approximately 5 centimeters (2 inches) in diameter. The site is surrounded by sand and gravel. The 3706 Building was posted "Fixed Contamination Area." The drain was within the footprint of WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. According to the "Inventory of Miscellaneous Streams," Revision 3, the french drain is inactive, source abandoned.

Location: The site was located on the south side of the 3706 Building, approximately 4.5 meters (14.8 feet) east of Door #01.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building and WIDS sitecode 300-46.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

The Site Was Consolidated With:**Code:** 300-46**Names:** 300-46; Soil Contamination Surrounding 3706 Building**Code:** 300-142**Classification:** Accepted**Names:** 300-142; 3706 Building Steam Condensate;
Injection Well #30; Miscellaneous Stream #369**Reclassification:** Consolidated (1/19/1999)**Type:** French Drain**Start Date:****Status:** Inactive**End Date:**

Description: The french drain has been excavated and removed. The waste site was a french drain that received steam condensate. The drain was an open clay pipe that abuts the south wall of the 3706 Building and is surrounded by asphalt and sand. The inner diameter of the top 7 centimeters (2.8 inches) of the pipe is 0.55 meter (1.80 feet). Below the top 7 centimeters (2.8 inches), the inner diameter is reduced to 0.44 meters (1.4 feet). The top of the pipe rises approximately 0.35 meters (1.1 feet) above the ground surface. The bottom of the drain is covered by debris. The top of the debris is approximately 0.7 meters (2.3 feet) below the top of the pipe. No pipes are visible entering the drain. However, there are two approximately 2.5 centimeter (1 inch) holes drilled into the side of the pipe. The clay around these holes as well as the interior of the pipe appear to be rust stained. An approximately 3 centimeter (1.2 inches) metal pipe exits the building 0.6 meters (2 feet) above the ground surface, makes a 90 degree turn and enters the ground approximately 0.6 meters (2 feet) east of the drain. Further east, on the opposite side of a wall extension, there is an approximately 5 centimeter (2 inch) metal pipe that exits the building approximately 0.45 meter (1.5 feet) above the ground surface and enters the ground. This second pipe is approximately 1.8 meters (5.9 feet) from the site and approximately 1 meter (3.2 feet) from a second clay pipe. This second clay pipe is approximately 0.75 meters (2.5 feet) in diameter. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. The 3706 Building is posted "Fixed Contamination Area." The drain was within the footprint of the WIDS Site 300-46, which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The drain was located on the south side of the 3706 Building near the southwest entrance door. It is approximately 3.5 meters (11.5 feet) east of Door #11

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:**Code:** 300-46**Names:** 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-143 **Classification:** Accepted

Names: 300-143; 3706 Building Steam Condensate; Miscellaneous Stream #361 **Reclassification:** Consolidated (1/19/1999)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that receives steam condensate. The drain has a concrete base and is covered by a 0.66 meter (2.17 foot) by 0.66 meter (2.17 foot) metal lid. The site is surrounded by gravel and weeds. During the November 11, 1998, walkdown, the lid could not be removed. From the outside, there are no apparent steam lines entering the site. There are pipes extending from the south wall of the courtyard, but none near the drain. The 3706 Building is posted "Fixed Contamination Area." The site falls within WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located in the eastern courtyard of the 3706 Building. It is along the south wall of the courtyard, approximately 15.3 meters (50.2 feet) from the southeast corner.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-144 **Classification:** Accepted

Names: 300-144; 3706 Building Steam Condensate; Miscellaneous Stream #358 **Reclassification:** Consolidated (1/19/1999)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that received steam condensate. The drain is a clay pipe covered by a 0.85 meter (2.79 foot) diameter metal lid. The top of the clay pipe is approximately 0.3 meters (1 foot) above the ground surface. The lid has an opening allowing pipes to enter the drain. An approximately 2.5 centimeter (1 inch) metal pipe and an approximately 1.3 centimeter (0.5 inch) diameter clear, plastic hose enter the drain through this opening. The plastic hose is attached to what appears to be a steam line extending through an old window or other former opening in the west wall of the courtyard. This opening is 2 to 3 meters (6.6 to 9.8 feet) north of the site

and is currently boarded up. An approximately 5 centimeter (2 inch) diameter metal pipe exits the west wall of the courtyard, makes a 90 degree turn and enters the ground near the pipe. The clay pipe is broken, making removal of the lid unsafe. During the November 11, 1998, walkdown, the interior appeared dry when viewed through a break in the clay pipe. The site is surrounded by sand. The site falls within WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located in the middle courtyard of the 3706 Building. It is approximately 8.5 meters (27.9 feet) north of the south entrance to the courtyard, abutting the west wall.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate was less than 0.19 liters per minute (0.05 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-145

Classification: Accepted

Names: 300-145; 3706 Building Steam Condensate; Injection Well #25; Miscellaneous Stream #438

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The drain is a clay pipe covered by a 0.78 meter (2.56 foot) metal cover. The lid is posted "Confined Space." The lip of the pipe is broken on its northeast side; this could allow stormwater runoff to enter. "FD 25" is written on the wall of the 3706 Building above the site. A metal pipe approximately 2.5 centimeters (1 inch) in diameter extends from the west side of 3706 just south of the site. This pipe exits the building approximately 3 meters (10 feet) above the ground surface and terminates approximately 15 centimeters (5.9 inches) after leaving the building. It was difficult to ascertain whether the pipe was plugged or not. The side of the building below this pipe appears to have rust stains. A second metal pipe approximately 2.5 centimeters (1 inch) in diameter extends from the south side of 3706, just around the corner from the site. This pipe leaves the building approximately 0.9 meters (3 feet) above the ground surface and disappears into the ground. The site is surrounded by soil and gravel. Moss is growing on the south side of the drain. The 3706 Building is posted "Fixed Contamination Area." The site falls within WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. According to the "Inventory of

Code: 300-46
Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-147
Classification: Accepted
Names: 300-147; 3706 Building Stormwater Runoff; Miscellaneous Stream #363
Reclassification: Consolidated (1/19/1999)
Type: French Drain
Start Date:
Status: Inactive
End Date:

Description: The site is a french drain that receives stormwater runoff. The drain is made of concrete and is covered by a 0.90 meter (2.95 foot) by 0.45 meter (1.48 foot) metal grate. The drain appears to be approximately 0.9 meters (3 feet) deep. An approximately 0.3 meter (1 foot) diameter metal pipe enters the eastern side of the drain. The site is surrounded by gravel and weeds. During the November 11, 1998, walkdown, the drain appeared to be dry, its bottom covered by debris. The 3706 Building is posted "Fixed Contamination Area." The site falls within WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located in the eastern courtyard of the 3706 Building. It is approximately 8 meters (26.2 feet) from the eastern wall, towards the center of the courtyard.

Release Description: There were no known hazardous or radioactive releases from this water discharge.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

The Site Was Consolidated With:

Code: 300-46
Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-148
Classification: Accepted
Names: 300-148; 3706 Building Stormwater Runoff; Injection Well #22; Miscellaneous Stream #359
Reclassification: Consolidated (1/19/1999)
Type: French Drain
Start Date:
Status: Inactive
End Date:

Description: The site is described by the "Inventory of Miscellaneous Streams," Revision 3, as a french drain that collects stormwater runoff. The drain is an uncovered concrete pipe with an outer diameter of 0.9 meters (2.95 feet). The top of the pipe is flush with the ground surface on its southeast side while the northwest side is 7 centimeters (2.8 inches) above grade. The pipe appears to be filled with gravel and large rocks to within centimeters of its top. The drain is surrounded by gravel and soil. There is no evidence of a roof drain at this site. A 2.5 centimeter (1 inch) diameter metal pipe exits the west side of the building approximately 1.8 meters (5.9 feet) above the ground surface, makes a 90 degree turn towards the ground and terminates open-ended approximately 0.75 meters (2.5 feet) above the ground. The side of the drain closest to the 3706 Building, the gravel and rock between the building and the drain, as well as the side of the 3706 Building adjacent to the site all appear to be discolored by rust. The 3706 Building is posted "Fixed Contamination Area." The site falls within WIDS Site 300-46 which estimates

the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area.

Location: The site is located just west of the northwest corner of the 3706 Building.

Release Description: There were no known hazardous or radioactive releases from this water discharge.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute). During the October 26, 1998, walkdown, the site appeared to be a steam condensate site as opposed to a stormwater site.

The Site Was Consolidated With:

Code: 300-46

Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-149

Classification: Accepted

Names: 300-149; 3706A Building Steam Condensate; Injection Well #28; Miscellaneous Stream #432

Reclassification: Consolidated (1/19/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The french drain is a concrete pipe covered with a 0.88 meter (2.89 foot) perforated metal lid. The lid is posted "Confined Space." The top of the pipe is 5 to 9 centimeters (2 to 3.5 inches) above the ground surface. A steam pipe enters the ground approximately 0.4 meters (1.31 feet) south of the site. The pipe is labeled "HPD-TRP-024" and "HPD-TRP-025." A 2.5 centimeter (1 inch) metal pipe is visible under the cover; it extends approximately 20 centimeters (7.9 inches) from the side of the concrete pipe and is in line with the steam pipe. The concrete pipe is 0.98 meters (3.2 feet) in length. The space below the concrete pipe appears to be filled with rocks and cobbles. During the October 27, 1998, walkdown, there was no evidence that the site was in use. The site is surrounded by asphalt, soil and gravel. The 3706A Building is posted "Fixed Contamination Area." The site falls within WIDS Site 300-46 which estimates the extent of extensive uranium, transuranic and chemical contamination of the 3706 Building and the surrounding area. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is 7.5 meters (24.6 feet) east of the 3706A east entrance door, under the overhead steam line.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 300 Area main steam line.

Waste Type: Steam Condensate
Waste Description: When the site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46
Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-150 **Classification:** Accepted
Names: 300-150; 3706 Building Steam Condensate; Miscellaneous Stream #430 **Reclassification:** Consolidated (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is a french drain that is a clay pipe. The outer diameter of the pipe is 1.25 meters (4.10 feet). The pipe is covered by a metal lid which is labeled "Danger - Confined Space." The upper lip of the pipe is breaking up. The top of the pipe is flush with the ground surface for approximately one half of its circumference. The other half is 1 to 2 centimeters (0.4 to 0.8 inches) above the ground. The pipe is surrounded by soil and gravel. A pipe from the overhead steam line enters the ground nearby. This pipe is labeled "HPD-TRP-021." According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned. Because of the broken lip on the pipe, the site may collect stormwater from the roadway.

Location: The site is located across Apple Street from the westernmost entrance on the north side of the 3706 Building. It is under the overhead steam lines.

Release Description: There were no known hazardous or radioactive releases from this steam condensate discharge.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3706 Building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

The Site Was Consolidated With:

Code: 300-46
Names: 300-46; Soil Contamination Surrounding 3706 Building

Code: 300-151 **Classification:** Accepted
Names: 300-151; 3707B Building Steam Condensate; Miscellaneous Stream #327 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is a french drain that is a clay pipe 0.86 meters (2.82 feet) in diameter. The pipe is surrounded by asphalt and cobbles. The drain has an inset metal lid. A small diameter (approximately 2.5 centimeters or 1 inch) metal pipe enters the lid through an opening. Water was observed through this opening on a 10/13/98 visit to the site. At the time of the walkdown, the site was surrounded by a metal barricade. The label "HDP-TRP-009" mentioned in the "Inventory of Miscellaneous Streams," Revision 3, was not observed. The former location of the 3707B Building is currently home to electrical equipment and a Johnson Controls, Inc., air compressor. The "Inventory of Miscellaneous Streams," Revision 3, states that this site previously received steam condensate from the main steam line at pit U57 (300-152, stream #326), but now receives condensate from a Johnson Controls, Inc. air compressor.

Location: The site is located just north of the previous location of the 3707B Building. It is south of the two entry doors on the south side of the 3708 Building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: Previously, the site was associated with the 3707B Building, which has been demolished. The site is currently associated with a Johnson Controls, Inc., air compressor.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-152

Classification: Accepted

Names: 300-152; 3707B Building Steam Condensate; Miscellaneous Stream #326; U57

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1996

Description: The site is a french drain. The base of this drain is constructed of corrugated metal and is covered by a 1.3 meter (4.27 foot) metal lid. The lid is labeled "Confined Space" and "U-57." The top of the lid ranges from 5 to 15 centimeters (2 to 6 inches) above grade. The site is surrounded by soil and gravel. The former location of the 3707B Building is currently home to electrical equipment and a Johnson Controls, Inc., air compressor. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located northeast of the previous location of the 3707B Building. It is 10 meters (32.8 feet) from the southeast corner of the 3708 Building, next to the overhead steam lines.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3707B Building, which has been demolished.

Waste Type: Steam Condensate

waste type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-153 **Classification:** Accepted
Names: 300-153; 3707B Building Steam Condensate; Miscellaneous Stream #328 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:** 1/1/1996

Description: The site is a french drain which received steam condensate. According to the "Inventory of Miscellaneous Streams," Revision 3, the stream status is inactive, source abandoned. The former location of the 3707B Building is currently home to electrical equipment and a Johnson Controls, Inc., air compressor. No evidence of the site was visible during the site walkdown.

Location: The "Inventory of Miscellaneous Streams," Revision 3, describes this site as being at the northwest corner of the 3707B Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 3707B Building, which has been demolished.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-154 **Classification:** Accepted
Names: 300-154; 3707B Building Steam Condensate; Miscellaneous Stream #325 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:** 1/1/1998

Description: The site is not an engineered structure. No pipe or lid was evident during the 10/13/98 walkdown. The ground surface is covered with soil and gravel. A pipe descending from the overhead steam line discharged directly onto the ground. At the time of the walkdown, the site was not labeled "HPD-V-015C" as described in the "Inventory of Miscellaneous Streams," Revision 3. However, the site is below a valve labeled "MSS-V-015." A small, shallow natural depression was observed just southwest of the discharge point. Stormwater runoff could collect in this depression. The former location of the 3707B Building is currently home to electrical equipment and a Johnson Controls, Inc., air compressor. The "Inventory of Miscellaneous Streams," Revision 3, says the site is inactive, source abandoned.

Location: The site is located at the northwest corner of the intersection of Apple St. and Wisconsin Street. It is below an overhead steam line.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to

produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3707B Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-155

Classification: Accepted

Names: 300-155; 3707C Building Steam Condensate; Injection Well #24; Miscellaneous Stream #179

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1996

Description: The site is a french drain that received steam condensate. The former location of the 3707C Building is currently a cobble-covered field. No evidence of the site remains. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site was located near the center of the south side of the former 3707C building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3707C Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.38 liters per minute (0.1 gallons per minute) of steam condensate only.

Code: 300-156

Classification: Accepted

Names: 300-156; 3707C Building Steam Condensate; Injection Well #23; Miscellaneous Stream #178

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1996

Description: The site is a french drain covered by a 1.1 meter (3.61 foot) metal lid. The lid is labeled "Confined Space." The drain itself appears to be approximately half the diameter of the lid. Because of the size difference between the lid and the drain, it was difficult to get a good look inside the drain. The upper part of the drain appears to be made of bricks. The site is surrounded by gravel. A manhole labeled "Caution, Radioactive Material, Internally Contaminated" is approximately 2 meters (6.6 feet) to the northwest. This manhole is related to

the 300 Area Process Sewer System (WIDS Site 300-15). According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: The site is located approximately 4 meters (13 feet) northwest of the northwest corner of the 3706 Building, and approximately 2 meters (6.6 feet) southeast of a manhole labeled "Radioactive Material, Internally Contaminated."

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3707C Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.38 liters per minute (0.1 gallons per minute) of steam condensate only.

Code: 300-157

Classification: Accepted

Names: 300-157; 3707C Building Steam Condensate; Miscellaneous Stream #337

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1996

Description: The site is a french drain that is a clay pipe. The upper lip of the clay pipe is breaking up. The drain is covered by a 0.76 meter (2.49 foot) metal lid. The drain is surrounded by a metal safety barricade and the area around the it is covered with cobbles. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: The site is located approximately 12 meters (39.4 feet) west of the northwest corner of the 3706 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3707C Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-158

Classification: Accepted

Names: 300-158; 3707C Building Steam Condensate; F.D. #31; Miscellaneous Stream #336

Reclassification: Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The site is a french drain that received steam condensate. The former location of the 3707C Building is currently a cobble-covered field. No evidence of the site remains. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site was located near the southwest corner of the former 3707C building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 3707C Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-159 **Classification:** Accepted

Names: 300-159; 3707C Building Steam Condensate; F.D. #4; Miscellaneous Stream #335 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1996

Description: The site is a french drain that received steam condensate. The former location of the 3707C Building is currently a cobble-covered field. There is no evidence of a french drain in the location described for this site. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site was on the west side of the former 3707C Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 3707C Building, that has been demolished.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-160 **Classification:** Accepted

Names: 300-160; 3707D Building Steam Condensate; Injection Well #10; Miscellaneous Stream #443

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is a rectangular concrete structure. It is painted yellow and is marked with "Confined Space" signs.

Location: The site is located 3 meters (10 feet) from the south side of the 3707-D Building.

Waste Type: Steam Condensate

Waste Description: The site receives less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate.

Code: 300-161

Classification: Accepted

Names: 300-161; 3707D Building Stormwater Runoff; Miscellaneous Stream #441

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Active

End Date:

Description: The site is a 68 centimeter (27 inch) drain with a perforated metal cover. It is marked with a "Confined Space" sign.

Location: The site is located approximately 4.5 meters (15 feet) from the northwest side of the 3707D Building.

Waste Type: Stormwater Runoff

Waste Description: The site receives surface runoff from a paved area adjacent to the 3707D building. According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-162

Classification: Accepted

Names: 300-162; 3707D Building Stormwater Runoff; Miscellaneous Stream #442

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Active

End Date:

Description: The site is a 68 centimeter (27 inch) drain with a perforated metal cover.

Location: The site is located approximately 4.5 meters (15 feet) from the northeast side of the 3707-D Building.

Waste Type: Stormwater Runoff

Waste Description: The site receives surface runoff from a paved area adjacent to the 3707D building. According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-163

Classification: Accepted

Names: 300-163; 3708 Building Steam Condensate; Miscellaneous Stream #423

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The french drain is a vitrified clay pipe buried vertically. The top is even with the ground surface and is covered with a metal lid. Two lines discharge into the drain.

Location: The site is located on the east side of the 3708 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The unit received steam condensate from the 3708 building.

Code: 300-164

Classification: Accepted

Names: 300-164; 3709 Building Steam Condensate; F.D. #3; Miscellaneous Stream #338

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1998

Description: The site is a french drain that appears to be a concrete pipe and is covered by a 1.46 meter (4.79 foot) metal lid. The lid is labeled "Confined Space." The lid was not labeled "F.D. #3" as described by the "Inventory of Miscellaneous Streams," Revision 2. The lid is almost flush with the ground surface and is surrounded by asphalt. A metal pipe approximately 4 centimeters (1.6 inches) in diameter extends from the north side of the 3709 building and enters the ground approximately 1 meter (3.5 feet) from the edge of the drain.

Location: The site is located at the northeast corner of the 3709 building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3709 building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-165

Classification: Accepted

Names: 300-165; 3709A Building Condensate; Miscellaneous Stream #347

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date: 1/1/1996

Description: The site is an injection well that received air compressor condensate. The site is a 0.5 meter (1.64 foot) diameter concrete structure with a heavy metal cover. There are two holes in the cover. During the 10/9/98 walkdown, there did not appear to be any water in the drain (observed through one of the holes in the cover).

Location: The site is located adjacent to the west wall of the 3709A Fire Station, just north of the southwest corner.

Related Sites/ Structures: The site is associated with the 3709A Building.

Waste Type: Water

Waste Description: The site received air compressor condensate. The "Inventory of Miscellaneous Streams," Revision 1, lists the flow rate as less than 0.038 liters per minute (0.01 gallons per minute). Revisions 2 and 3 of the document list the flow as 0 liters per minute (0 gallons per minute) because the stream was discontinued.

Code: 300-166

Classification: Accepted

Names: 300-166; 3709A Building Steam Trap; Miscellaneous Stream #355

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is an injection well that was originally used as a steam trap and later used for stormwater. The top of the drain is flush with the asphalt parking area. The site is covered with a 1.47 meter (4.82 foot) diameter steel lid with four holes in the cover. The lid is labeled "U-40" and "Confined Space."

Location: The site is located in the asphalt parking area on the south side of the 3709A Fire Station. It is near the southwest corner of the building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3709A Building.

Waste Type: Stormwater Runoff

Waste Description: In 2008, the stormwater from the roof of 3709A was rerouted to this drain.

Waste Type: Steam Condensate

Waste Description: When the site was originally used, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-167

Classification: Accepted

Names: 300-167; 3711 Building Steam Condensate; Miscellaneous Stream #343

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive **End Date:** 1/1/1997

Description: The site is a french drain that received steam condensate. A pipe from the overhead steam line enters the ground in the location described for this site. During the 10/14/98 site walkdown, no evidence of a drain was visible. Tags labeling the valves HPD-V-1001, HPD-V-5001, HPD-V-2001, and HPD-V-3001 were observed. There was not a tag for HPD-TRP-001, which was described in the "Inventory of Miscellaneous Streams," Revision 3. The area surrounding the descending steam pipe is covered with soft sand, which is deep in places. The sand could be obscuring evidence of the site.

Location: The site is located on the north side of the 3711 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3711 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-168 **Classification:** Accepted

Names: 300-168; 3711 Building Steam Condensate; Miscellaneous Stream #433 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is a concrete pipe. The pipe does not have a lid and appears to be filled with sand, cobbles and broken bricks. The top of the pipe, which is breaking up, ranges from 1 centimeter (0.4 inches) to 10 centimeters (4 inches) above grade. Three metal pipes approximately 2.5 centimeters (1 inch) in diameter extend from the 3711 Building. The open ends of these three pipes are poised over the top of the drain. A "Radioactive Material Area" is located approximately 5 meters (16.4 feet) to the east.

Location: The site is located on the south side of the 3711 Building, just west of the south entry door.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3711 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-169	Classification: Accepted
Names: 300-169; 3712 Building Steam Condensate; Miscellaneous Stream #351	Reclassification: Rejected (1/19/1999)
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the site is a french drain that receives steam condensate at a flow rate of less than 0.38 liters (0.01 gallons) per minute. Based on a site inspection in June of 1997, the drain is composed of a 0.48 meter (1.57 foot) diameter metal culvert that abuts the east side of the 3712 Building. The culvert is uncovered and appears to be rust stained. The culvert appears to be filled with sand or other soil to within 0.50 meters (1.6 feet) of its top. A 3 centimeter (1.2 inch) diameter metal pipe enters the top of the culvert and intersects a horizontal pipe, making a T-intersection. This second pipe is oriented north-south. One end has a valve. The other end makes a 90 degree turn towards the 306 Building. The vertical pipe that enters the top of the culvert rises to just under the roof line of the 3712 Building where it continues north along the east side of the building, turns and travels west. At another T-intersection near the center of the north side, a short pipe extends downward and appears to be capped. The other segment continues in the towards the northwest corner of the building where it drops towards the ground surface. This pipe terminates open-ended 0.20 meters (0.66 feet) above the ground surface. During a November 1998 site inspection, the source of the steam condensate for this french drain came into question. Tracing out the lines, and verifying with drawing M-3901, Sheet 2, Revision 30, it was determined that the line into the french drain is actually a line from an abandoned helium system that ran between the 306 and 3712 Buildings. This line terminates open-ended. The drawing shows a gate valve to the atmosphere at the culvert on the east side of the building and at the northwest corner of 3712, plus a 2.5 centimeter (1 inch) gate valve near the center of the north side of 3712. It is believed that this site was mistakenly included in the miscellaneous streams inventory, and that is was in fact a purge point for the helium system. This site is located within a "Radiologically Controlled Area" posted around the 3712 Building. The 3712 Building is an active uranium metal storage unit, documented as WIDS Site 3712 USSA, and posted as "Caution Fissile Materials" and "Radiation Area and Contamination Area".	
Location:	The site is located on the east side of the 3712 Building, 16.3 meters (53.5 feet) south of the northeast corner.
Process Description:	Helium is a light noble gas. Releases of helium to the atmosphere would quickly dissipate with no expected reaction or contamination of the surrounding area.
Related Sites/ Structures:	The site is associated with the 3712 Building (WIDS Site 3712 USSA).
Waste Type:	Water
Waste Description:	According to the "Inventory of Miscellaneous Streams," Revision 3, the site received steam condensate with a flow rate less than 0.01 gallons per minute. According to technical personnel responsible for the site, this site was mistakenly identified as a miscellaneous stream site.
Waste Type:	Chemicals
Waste Description:	According to M-3901, sheet 2, revision 30, an abandoned helium line travels through this site, not a steam condensate line.

Code: 300-170	Classification: Accepted
Names: 300-170; 3712 Building Steam Condensate; Miscellaneous Stream #437	Reclassification: Rejected (2/24/1999)

Type: French Drain**Start Date:****Status:** Inactive**End Date:**

Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the site was a french drain that received steam condensate. The report identified the location as the north side of the 3712 Building directly next to the building. During the October 27, 1998 walkdown, a concrete pipe with a 1.0 meter (3.3 foot) metal lid was found at the top of a small slope approximately 13 meters (42.7 feet) northwest of the roll up door on the north side of 3712. The metal lid is not labeled. Based on previous experience with the location descriptions and coordinates in the "Inventory of Miscellaneous Streams," this structure seems to fit the description for this stream. The top of the concrete is above grade except where the surrounding cobbles are spilling over and partially covering the lid. Two metal pipes extend horizontally from the north side of 3712 Building 6 to 9 meters (20 to 30 feet) above the ground surface. One of these pipes appears to be capped; the other appears to be open-ended and approximately half the diameter of the capped pipe. Drawing M-3800, sheet 2, revision 20, shows a steam line running from approximately the center of the north side of the 3712 Building north to 3710A, which has since been demolished. A Johnson Controls, Inc., boiler house has been built north of the northeast corner of 3712. During the October 27, 1998, walkdown, the lid could not be lifted in order to verify whether or not this stream is still active. Another walkdown was done on February 17, 1999 for the purpose of lifting the lid on the site and taking a photograph. There are no pipes visible inside the drain. There is no evidence the drain is active. The concrete pipe is filled with large rocks to within a few inches below the metal cover. Nat Harden, DynCorp Electrical System Specialist was visited. He looked through the available service drawings for the location. Nat stated that he was fairly sure that this waste site was the french drain for the steam condensate from the 3710A Building (now demolished). He said that the 3710A Building steam supply was an overhead line that ran from the north side of the 3712 Building. Nat noticed that the steam line is shown as dashed (denoting an underground) line on the as-built drawings whereas it should be shown as an above ground line that has been removed. The waste site is not shown on any of the utility drawings that Nat had.

Location: The site is located approximately 13 meters (42.7 feet) northwest of the roll up door on the north side of 3712, at the top of a small slope. If the 3710A Building was still in place, this french drain would be located west of this Building.

Process Description: Steam was produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, it was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3712 or 3710A Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow was less than 0.038 liters (0.01 gallons) per minute.

Code: 300-171**Classification:** Accepted

Names: 300-171; 3713 Building Steam Condensate and Stormwater Runoff; F.D. #7; Miscellaneous Stream #333

Reclassification: Rejected (12/15/1998)**Type:** French Drain**Start Date:**

Status: Inactive

End Date:

Description: The site is a french drain that currently receives only stormwater. It is a clay pipe covered by a 0.32 meter (1.05 foot) metal lid. The lid is perforated. The lid was not labeled F.D. #7 as described in the "Inventory of Miscellaneous Streams," Revision 2. The top of the drain is flush with the ground surface. The drain appears to be filled with soil to within 30 centimeters (11.8 inches) of the top of the pipe. The site is surrounded by soil and gravel. Soil is subsiding around the drain (see photos). According to the "Inventory of Miscellaneous Streams," Revision 3, the steam source has been shut off.

Location: The site is located at the northwest corner of the 3713 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3713 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.076 liters per minute (0.02 gallons per minute)

Waste Type: Steam Condensate

Waste Description: When the site was active, the flow rate for both steam condensate and stormwater runoff was listed in the "Inventory of Miscellaneous Streams" as less than 0.076 liters per minute (0.02 gallons per minute).

Code: 300-172

Classification: Accepted

Names: 300-172; 3713 Building Steam Condensate; Miscellaneous Stream #435

Reclassification: Rejected (12/15/1998)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date: 1/1/1998

Description: The site has been described as an injection well. The site is not covered by a lid and no engineered structure is evident. The surface is covered with cobbles and larger rocks. A portion of the cobbled area, approximately 0.4 meters (1.31 feet) in diameter, appears to be depressed. Stormwater runoff may be able to collect in this depression. The site is surrounded by soil and gravel. A pipe from the overhead steam line labeled "HPD-TRP-018" enters the ground just north of the site.

Location: The site is 8.9 meters (29.2 feet) southwest of the southwest corner of the 3713 building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3713 building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-173 **Classification:** Accepted
Names: 300-173; 3713 Building Steam Condensate; Miscellaneous Stream #512 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:** 1/1/1998
Description: The site is a french drain covered by a 1.14 meter (3.74 foot) metal lid. The lid is flush with the ground surface and is labeled "Confined Space." A pipe extending from the overhead steam line enters the ground near the lid. The site is surrounded by soil and gravel.
Location: The site is located 12.5 meters (41 feet) southwest of the southwest corner of the 3713 building.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3713 building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 3.8 liters per minute (1.0 gallon per minute) of steam condensate only.

Code: 300-174 **Classification:** Accepted
Names: 300-174; 3713 Building Stormwater Runoff and Steam Condensate; Miscellaneous Stream #544 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site was a french drain that currently receives stormwater. It is covered by a 0.94 meter (3.08 foot) metal lid. The lid is flush with the ground surface and is surrounded by gravel. A small diameter (< 2.5 centimeters [< 1 inch]) metal pipe extends from the building in line with the drain's lid. The pipe extends from the building approximately 1.75 meters (5.7 feet) above the ground surface, makes a 90 degree turn towards the ground, extends to within 0.25 meters (9.8 inches) of the ground surface and stops. The end of this pipe is open.
Location: The site is located on the east side of the 3713 Building, 8.7 meters (28.5 feet) south of the northeast corner.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3713 Building.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate was less than 3.8 liters per minute (1 gallon per minute).

Waste Type: Stormwater Runoff
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 3.8 liters per minute (1 gallon per minute)

Code: 300-176 **Classification:** Accepted
Names: 300-176; 3715 Building Steam Condensate; Miscellaneous Stream #678 **Reclassification:** Rejected (12/15/1998)
Type: Valve Pit **Start Date:**
Status: Inactive **End Date:** 1/1/1998

Description: The site is a rectangular valve pit with a dirt floor. Steam condensate was discharged onto the floor of the pit. The top of the concrete base is 5 to 15 centimeters (1.97 to 5.91 inches) above grade. The valve pit is covered by a metal lid 1.30 meters (4.27 feet) by 1.11 meters (3.64 feet). The lid is labeled "Confined Space" and "U-49." A steam pipe from the overhead line enters the ground just east of the site. The pipe is labeled "HPD-TRP-005." The site is surrounded by sand and asphalt.

Location: The site is located between the 3715 Building and the 303E Building, under the overhead steam line.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: This site is associated with the 3715 Building.

Waste Type: Steam Condensate
Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-177 **Classification:** Accepted
Names: 300-177; 3717 Building Steam Condensate; Miscellaneous Stream #330 **Reclassification:** Rejected (12/15/1998)
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:** 1/1/1998

Description: The site is an injection well that received steam condensate. The site is a 90 centimeter (2.95 foot) diameter, concrete structure with a perforated metal cover. It is located adjacent to an overhead steam line, but there is no visible evidence of a steam pipe connecting to this drain. The drain is in a slight depression from the surrounding grade.

Location: The site is located approximately 5 meters (16.5 feet) from the southeast corner of the 3717 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3717 Building.

Waste Type: Steam Condensate

Waste Description: When the site was active, it received less than 0.038 liters per minute (0.01 gallons per minute) of steam condensate only.

Code: 300-178 **Classification:** Accepted

Names: 300-178; 3717 Building Steam Condensate; Miscellaneous Stream #329 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is a clay pipe. The top of the clay pipe is 5 centimeters (2 inches) above grade. The drain appears to be filled with sand or soil to within 0.35 meters (1.15 feet) of the top of the pipe. The drain is covered by a 0.25 meter (0.82 foot) metal lid with perforations. There was no evidence of use observed during the 10/08/98 walkdown. The site is surrounded by soil and gravel.

Location: The site is located just east of the south entry door to the 3717 Building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3717 Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-179 **Classification:** Accepted

Names: 300-179; 3717 Building Steam Condensate; Miscellaneous Stream #324 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is a clay pipe. The upper lip on half of the pipe is broken;

therefore, the 0.39 meter (1.28 foot) metal lid doesn't seat properly. During the 10/8/98 walkdown, the site was surrounded by a metal safety barricade. During the same walkdown, it was observed that the pipe that descended from the overhead steam line was not labeled. The "Inventory of Miscellaneous Streams," Revision 3, states "HPD-TRP-022" is the steam trap associated with this french drain. The broken lip may allow stormwater runoff to enter this drain. The site is surrounded by soil and gravel.

Location: The site is located south of the southwest corner of 3717.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3717 Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-180

Classification: Not Accepted

Names: 300-180; 3717 Building Stormwater Runoff; Miscellaneous Stream #545

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that is a clay pipe covered by a perforated metal lid. The lid is 0.77 meters (2.53 feet) in diameter and is missing a rectangular-shaped section along its edge. The pipe is surrounded by soil, gravel and concrete. The top of the pipe is approximately 1 centimeter (0.4 inches) above the ground surface. The pipe is filled with soil and cobbles to within approximately 0.4 meters (1.3 feet) of the top of the pipe.

Location: This site is located on the south side of the 3717 Building, approximately halfway between the south entry door and the east end of the building.

Related Sites/ Structures: This site is associated with the 3717 Building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 3.8 liters per minute (1.00 gallon per minute).

Code: 300-181

Classification: Accepted

Names: 300-181; 3717 Building Steam Condensate; Miscellaneous Stream #180

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain covered by an eight-sided metal lid. The diameter of the lid ranges from 0.60 meters (1.97 feet) to 0.66 meters (2.17 feet) and it appears to have been welded shut

on one side. The site is surrounded by asphalt and concrete. A small area of concrete on the west side of the lid appears to have been excavated.

Location: The site is located on the east side of the 3717 Building, just east of the roll up door.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3717 Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-182	Classification: Accepted
Names: 300-182; 3717B Building Steam Condensate; Miscellaneous Stream #323	Reclassification: Rejected (12/15/1998)
Type: French Drain	Start Date:
Status: Inactive	End Date:

Description: The site is a french drain with a square concrete base. The top of the base ranges from approximately 1 centimeter (0.4 inches) to 5 centimeters (2 inches) above grade. The drain is covered by a 0.66 meter (2.17 foot) by 0.66 meter (2.17 foot) square metal lid. The lid has the remains of a "Confined Space" label. The site is surrounded by gravel where it doesn't abut 3717B. Two pipes from the overhead steam line enter through the lid. A row of "Radiologically Controlled Area" signs run east to west approximately 5 meters (16.4 feet) north of the site. These signs seem to refer to the area around the 304 Building, which is immediately north of the site, and the 303A Building, which is northwest of the site. The door and concrete pad on the south side of 304 are labeled "Fixed Contamination." Although the ground between 3717B and 304 is fairly level, there appears to be enough of a slope to prevent water flowing from the 304 Building towards the site.

Location: The site is adjacent to the north side of the 3717B Building and south of the 304 Building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3717B Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-183 **Classification:** Accepted

Names: 300-183; 3718 Building Steam Condensate; F.D. #40; Miscellaneous Stream #340 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1998

Description: The site is a french drain that received steam condensate. The drain is a clay pipe with an outer diameter of 0.89 meters (2.92 feet) and is covered by a metal lid. The top of the clay pipe is approximately 14 centimeters (5.5 inches) above grade. During the site walkdown, the site was surrounded by a metal safety barricade. It was also observed that the lid has some sort of white powdery buildup. The drain was not labeled "F.D. #40" as described in the "Inventory of Miscellaneous Streams," Revision 2. The site is surrounded by asphalt. It appears as though a section of asphalt between the site and the 3718 Building has been excavated. Four metal pipes extend from the south wall of the 3718 Building near the site. Two of these pipes, which are approximately 10 centimeters (3.9 inches) and 12 centimeters (4.7 inches) in diameter, exit the building within 1 meter (3.3 feet) of the ground surface make a 90 degree and disappear into the asphalt. The other two pipes exit the building approximately 3.0 meters (10 feet) above the ground surface. One makes a 90 degree turn towards the roof and the other makes a 90 degree turn towards the ground. Both appear to terminate open-ended above the ground.

Location: The site is located southeast of the southwest corner of the 3718 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is associated with the 3718 Building.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-184 **Classification:** Not Accepted

Names: 300-184; 3718A Building Stormwater Runoff; Miscellaneous Stream #270 **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: Twin 10-centimeter (4-inch) galvanized pipes drain each of two roofs that slope into each other in the center of the building. The pipes are joined about 0.7 meters (2 feet) above the ground in a Y, and empty into a 14-centimeter (6-inch) PVC pipe. This pipe travels just under the ground surface for about 12.2 meters (40 feet) and exits from a railroad tie retaining wall. The stormwater then spills onto the ground between the road and retaining wall. The soils are very sandy and the water probably infiltrates without overland flow. While the miscellaneous streams report (Rev. 3) says that it is an injection well, there is no injection well; the stormwater runoff ultimately empties into a "non-engineered structure" (the bare ground).

Location: The site is located on the north side of the 3718A Building, in the center where the two sections of the building are joined.

Process Description: The wastes are only roof stormwater runoff.

Waste Type: Stormwater Runoff
Waste Description: The waste is stormwater runoff only.

Code: 300-185 **Classification:** Accepted
Names: 300-185; 3722 Building Steam Condensate; Injection Well #6; Miscellaneous Stream #436 **Reclassification:** Rejected (12/15/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:** 1/1/1998

Description: The site is a french drain that is a metal pipe 0.74 meters (2.43 feet) in diameter. The top of the pipe is uncovered and flush with the ground surface. The pipe appears to be filled with gravel to within centimeters of the top. Stormwater runoff may be able to enter this drain from the surrounding area. Two lines from the overhead steam line enter the ground nearby. One line is associated with HPD-TRP-013 and the other is associated with HPD-TRP-014. The site is surrounded by gravel.

Location: The site is located approximately 7 meters (23 feet) off the northwest corner of the 3722 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3722 Building.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-186 **Classification:** Accepted
Names: 300-186; 3730 Building Steam Condensate; Miscellaneous Stream #383 **Reclassification:** Rejected (9/2/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is a steel grate 48.3 centimeters (19 inches) square with two pipes emptying into it. The pipes are uninsulated and are 3.2 centimeters (1.25 inches) and 4.4 centimeters (1.75 inches) outside diameter. The grate covers a sump that is approximately 0.76 meters (2.5 feet) deep. The apparent drain is approximately 0.46 meters (1.5 feet) from the bottom and leads back into the building (east). A cast iron elbow, 10.2 centimeters (4 inches) outside diameter, in the bottom of the sump does not appear to relate to the drainage. Note that "Inventory of Miscellaneous Streams", Revision 3 (Final Draft) lists the site "Active". According to the responsible contractor, the document is not correct, as the site is inactive.

Location: The site is near the southwest corner of the 3730 Building, approximately 30.5 centimeters (1

Location: The site is located on the northwest side of the 3730 Building, 0.76 meters (2.5 feet) west of the building, and 7.47 meters (24.5 feet) south of the northwest corner of the building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste

Description:

Code: 300-189

Classification: Accepted

Names: 300-189; 3731 Building Steam Condensate; Miscellaneous Stream #269

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that is a 10 centimeter (4 inch) metal pipe through the asphalt that surrounds the building. The pipe is about 0.75 meters (2.5 feet) deep. The downspout that enters it comes from the top half of the building, about 0.6 meters (2 feet) south of the swamp cooler. The "Inventory of Miscellaneous Streams", Revision 3, says the stream is active, but the building is posted as closed, and the drain is dry at the bottom. Note that "Inventory of Miscellaneous Streams", Revision 3 (Final Draft) lists the site as an active steam condensate drain. According to the responsible contractor, the document is not correct, as the site should be listed as an inactive steam condensate site.

Location: The french drain is in the center of the east wall of the 3731 Building, about 5 centimeters (2 inches) from the wall.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste

Description:

Code: 300-190

Classification: Not Accepted

Names: 300-190; 3731 Building Stormwater Runoff; Miscellaneous Stream #517

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that is a 17.8 centimeter (7 inch) PVC pipe through the asphalt paving against the 3731 Building. The drain receives only stormwater from the roof of the 3731

Building, which is a closed facility. The downspout is almost the same diameter as the french drain, so the depth was not determined. The french drain pipe is cracked.

Location: The drain is in the northeast corner of the 3731 Building, immediately adjacent to the corner.

Process Description: The site received only stormwater runoff.

Waste Type: Stormwater Runoff

Waste Description:

Code: 300-191 **Classification:** Not Accepted

Names: 300-191; 3731 Building Stormwater Runoff; Miscellaneous Stream #518 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that is an 18 centimeter (7 inch) PVC pipe through the asphalt that surrounds the building. The drain receives only roof stormwater runoff. The 3731 facility is closed. The roof downspout is almost the same diameter as the french drain, so the depth of the drain was not determined.

Location: The site is in southeast corner of the 3731 Building, adjacent to the building corner.

Process Description: The site received only stormwater runoff from the roof.

Description:

Waste Type: Stormwater Runoff

Waste Description:

Code: 300-192 **Classification:** Accepted

Names: 300-192; 3732 Building Steam Condensate; Miscellaneous Stream #349 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Inactive **End Date:** 1/1/1997

Description: The site is a french drain that received steam condensate from a quench tank. The drain appears to be made of concrete and is covered by a lid. The foundation of the 3732 Building has been posted "Fixed Contamination Area." Details of this drain have been obscured by the paint applied for this posting. The outer perimeter of the drain measures 1.2 meters (3.9 feet) by 1.2 meters (3.9 feet) and rises approximately 10 centimeters (3.9 inches) above grade. The lid measures 0.98 meters (3.22 feet) by 0.98 meters (3.22 feet). Where the edges of the lid are visible, it appears as though it has been sealed by the paint. A sign on the lid has been obscured by paint. The site is surrounded by gravel. While visiting an adjacent site on 11/2/98, it was noticed that the 3732 pad had been surrounded by post and chain since the previous walkdown. The barricade was labeled "Radiological Buffer Area" and "Radiologically Controlled Area."

Location: The site is located at the southwest corner of the 3732 foundation.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to

produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: This site is associated with the 3732 Building. All that remains of the 3732 Building is the foundation (300-245). The site is also associated with the soil contamination under the remaining foundation (300-48).

Waste Type: Steam Condensate

Waste Description: When this stream was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-193

Classification: Accepted

Names: 300-193; 3732 Building Steam Condensate; Injection Well #15; Miscellaneous Stream #419

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1997

Description: The site is a french drain that received steam condensate. The drain is a concrete pipe which rises approximately 5 centimeters (1.97 inches) above grade. The pipe is covered by a 0.98 meter (3.22 foot) metal lid. The foundation of the 3732 Building is posted "Fixed Contamination Area." The roof of the adjacent 303B Building is posted "Contamination Area." The site is surrounded by gravel.

Location: The site is southwest of the northwest corner of 3732. It is located between the 3732 foundation and the 303B Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3732 Building. All that remains of 3732 is the foundation (300-245). The site is also associated with the soil contamination remaining under the foundation (300-48).

Waste Type: Steam Condensate

Waste Description: When this stream was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-194

Classification: Accepted

Names: 300-194; 3734 Building Steam Condensate; F.D. #8; Miscellaneous Stream #334

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date: 1/1/1997

Description: The site is a french drain. The site is associated with the 3734 Building, which has been demolished. The 3734 Building's concrete pad is still in place and is surrounded by soil and gravel. There are two small areas of Fixed Contamination adjacent to the pad. No drain was

visible during the site walkdown.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site is associated with the 3734 Building. However, the coordinates provided by that document map the site just north of the former 3734A Building. Both buildings have been demolished and no drain was visible during the site walkdown, so it was not possible to ascertain the actual location of this site.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3734 Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When this stream was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-195

Classification: Accepted

Names: 300-195; 3734A Building Steam Condensate; Miscellaneous Stream #519

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate. The previous location of the 3734A Building is currently a cobble-covered area on the east side of the 3705 Building. No drain was visible during the site walkdown.

Location: According to the "Inventory of Miscellaneous Streams," Revision 3, the site is on the south side of the 3734A Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3734A Building, which has been demolished.

Waste Type: Steam Condensate

Waste Description: When this stream was active, the flow rate was less than 3.8 liters per minute (1 gallon per minute).

Code: 300-196

Classification: Accepted

Names: 300-196; 3745 Building Steam Condensate; Miscellaneous Stream #399

Reclassification: Rejected (9/2/1998)

Type: Sump

Start Date:

Status: Inactive

End Date:

Description: The site is a condensate sump constructed of concrete, 96.5 centimeters square (38 inches square), with a 66 centimeter (26 inch) diameter access cover.

Location: The site is located 10.7 meters (35 feet) south of the 3745 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The waste is steam condensate that has a flow rate of less than 0.19 liters (0.05 gallons) per minute.

Code: 300-197

Classification: Accepted

Names: 300-197; 3745 Building Steam Condensate; Injection Well #5; Miscellaneous Stream #398

Reclassification: Rejected (9/2/1998)

Type: Injection/Reverse Well

Start Date:

Status: Inactive

End Date:

Description: The site is covered with a 147.3 centimeter (58 inch) diameter steel cover. Two pipes exit the 3745 Building and enter the site. One of the pipes appears to be condensate from steam and the other pipe is unknown.

Location: The site is located adjacent to the east side of the 3745 Building, just north of the east door.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The waste was steam condensate that had a flow rate of less than 0.19 liters (0.05 gallons) per minute.

Code: 300-198

Classification: Accepted

Names: 300-198; 3745 Building Steam Condensate; Injection Well #1; Miscellaneous Stream #397

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a vertical vitrified clay pipe with a steel lid. An eye bolt is fastened to the center of the lid. The cover needs to be removed to confirm the function of the site.

Location: The site is located just off the northeast corner of the 3745 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to

Description: remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: The waste is steam condensate that has a flow rate of 0.19 liters (0.05 gallons) per gallon.

Code: 300-199

Classification: Accepted

Names: 300-199; 3745A Building Steam Condensate;
Miscellaneous Stream #380

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The french drain is a 0.6 meter by 0.45 meter (2 foot by 1.5 foot) rectangular concrete pit with a perforated steel cover. About 15 centimeters (6 inches) from the top, a 10 centimeter (4 inch) pipe enters from the direction of the 3745A Building. The drain is at least 0.6 meters (2 feet) deep, with the bottom 15 centimeters full of water. The site will also act as a storm drain for the surrounding compacted graveled area and the nearby roof runoff drainspout. Old wiring conduit rises from the ground next to the drain and enters the drain on the east side. The drain is protected by a yellow steel pipe barricade. The "Inventory of Miscellaneous Streams", Revision 3 lists this stream as eliminated. The lines have been capped. The source has been routed to the process sewer. It is still active as a stormwater drain.

Location: The unit is west of the 3745A Building, 3.5 meters (11.5 feet) northwest of the northwest corner and roof downspout.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: Site appears to still receive storm water runoff.

Code: 300-200

Classification: Accepted

Names: 300-200; 3745B Building Steam Condensate;
Miscellaneous Stream #379

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a square concrete pit, 1.2 meters (4 feet) on a side, covered with a solid steel plate. The site appears to be about 1 meter (3 feet) deep, with the bottom covered in water. A 10-centimeter (4-inch) iron pipe enters from the south side (from the 3745B Building) and another 10-centimeter (4-inch) pipe is lower, on the west side of the drain, barely extending into the drain. The "Inventory of Miscellaneous Streams", Revision 3 says the stream is eliminated.

The pipes have capped. The source has been routed to the process sewer. The water in the bottom is probably old, as there is no air circulation to evaporate the water. The site appears to be a concrete box with a concrete bottom and the steel lid would prevent evaporation.

Location: The unit is located on the north side of the 3745B Building, 1.8 meters (6 feet) north of the north wall, and 9 meters (30 feet) west of the northeast corner.

Process Description: The "Inventory of Miscellaneous Streams", Revision 3, lists the site as inactive, source eliminated. The source has been routed to the process sewer. This site received steam condensate only. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste

Description:

Code: 300-201

Classification: Accepted

Names: 300-201; 3762 Building Steam Condensate; Injection Well #42; Miscellaneous Stream #491

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a 1 meter (3 foot) diameter concrete pipe in the gravel roadway. A 5 centimeter (2 inch) steel pipe comes in at the bottom, from the direction of the 3762 Building. The bottom of the drain is 0.5 meters (1.5 feet) deep, and covered with small rocks and sand. The drain is protected by a yellow steel barrier made of pipes, which has been bent by traffic over the years. The drain is covered by a galvanized steel plate with 4 vent holes. The "Inventory of Miscellaneous Streams", Revision 3, says the site is active. However, the 3762 Building is posted as a closed facility, and most (or all) of the old steam lines in the area have been abandoned, so the site may actually be inactive. The site status has been changed to inactive to reflect information provided by the responsible contractor.

Location: The site is located 5.3 meters (17.5 feet) east of the northeast corner of the 3762 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste

Description:

Code: 300-202

Classification: Accepted

Names: 300-202; 3765 Building HVAC Condensate; Miscellaneous Stream #345

Reclassification: Rejected (12/15/1998)

Process Description: The site receives stormwater from 3790 building roof drains.

Related Sites/ Structures: This site is associated with the 3790 building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-207 **Classification:** Not Accepted

Names: 300-207; 3790 Building Stormwater Runoff; F.D. #16; Injection Well #16; Miscellaneous Stream #375 **Reclassification:** None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a french drain constructed of concrete pipe and covered with a 1.15 meter (3.77 foot) steel lid. The lid is labeled "FD 16" and "Confined Space." This french drain is surrounded by cobbles. A roof drain pipe is visible near the french drain. Two metal pipes extending from the side of the building were also observed. A metal pipe approximately 1.83 meters (6 feet) in length runs parallel to the ground surface, approximately 0.3 meters (1 foot) above the surface. This pipe is part of the fire water test system. A small diameter, short, metal pipe elbow also extends from the building at the same level as the fire water test pipe.

Location: The site is located in the 300 Area on the west side of the 3790 building, just north of the main entrance door.

Process Description: The site receives stormwater from 3790 building roof drains. According to the "Inventory of Miscellaneous Streams," Revision 3, this site also receives drainage from a nearby stairwell.

Related Sites/ Structures: This site is associated with the 3790 building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-208 **Classification:** Not Accepted

Names: 300-208; 3790 Building Stormwater Runoff; F.D. #17; Injection Well #17; Miscellaneous Stream #376 **Reclassification:** None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a french drain constructed of concrete pipe and covered with a 1.15 meter (3.77 foot) steel lid. The lid is labeled "FD 17" and "Confined Space." A roof drain pipe is visible entering the french drain. This french drain is behind two bushes and is surrounded by cobbles.

Location: The site is located in the 300 Area on the west side of the 3790 building, just south of the main entrance door.

Process Description: The site receives stormwater from 3790 building roof drains. According to the "Inventory of

Description: Miscellaneous Streams," Revision 3, this site also receives drainage from a nearby stairwell.

Related Sites/ Structures: This site is associated with the 3790 building.

Waste Type: Stormwater Runoff

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-209 **Classification:** Not Accepted

Names: 300-209; 3790 Building Stormwater Runoff; Miscellaneous Stream #374 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Active **End Date:** 1/1/1998

Description: The site is a drain that receives stormwater runoff. It is located at the bottom of a covered stairwell. The drain is covered by a 0.31 meter (1.02 foot) metal grid and is surrounded by concrete.

Location: The site is located at the bottom of the north stairwell for the 3790 Building.

Related Sites/ Structures: This site is associated with the 3790 building.

Waste Type: Stormwater Runoff

Waste Description: The flow rate to the stairwell drain is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-210 **Classification:** Not Accepted

Names: 300-210; 3790 Building Stormwater Runoff; Miscellaneous Stream #514 **Reclassification:** None

Type: French Drain **Start Date:**

Status: Active **End Date:**

Description: The site is a drain that received stormwater. The site is located at the bottom of a covered stairwell. The drain is covered by a 0.30 meter (0.98 foot) metal grate and is surrounded by concrete.

Location: The site is located on the west side of the 3790 building, at the bottom of the south stairwell.

Related Sites/ Structures: This site is associated with the 3790 building.

Waste Type: Stormwater Runoff

Waste Description: The flow rate to the stairwell drain is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-211 **Classification:** Accepted

Names: 300-211; 382 Building Steam Condensate; Miscellaneous Stream #429 **Reclassification:** Rejected (12/15/1998)

Type: French Drain **Start Date:**

Status: Active

End Date:

Description: The site is a french drain that receives steam condensate. The drain is a clay pipe covered by a 1.12 meter (3.67 foot) metal lid. The top of the clay pipe is a few centimeters above grade. The lid has three holes cut into it and is labeled "Confined Space." A metal pipe approximately 2.5 centimeters (1 inch) in diameter and labeled "LPD-TRP-016" enters the drain through one of these holes. During the site walkdown, steam could be seen rising from the drain and the sound of a liquid being discharged into the drain could be heard.

Location: The site is located at the northwest corner of the north wing of the 382 Building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 382 Building.

Waste Type: Steam Condensate

Waste Description: When this site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-212

Classification: Accepted

Names: 300-212; Miscellaneous Stream #400; MO010 Building Steam Condensate Sump

Reclassification: Rejected (9/2/1998)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a 121.9 centimeter (48 inch) condensate sump, constructed of concrete and covered with a steel plate. There are no postings.

Location: The site is located 7.6 meters (25 feet) south of the 3745 TRL-3 (M0-010) Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

Waste Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Code: 300-213

Classification: Accepted

Names: 300-213; Miscellaneous Stream #332; West High

Reclassification: Rejected (12/15/1998)

Tank (Water Tower) Overflow and Steam
Condensate

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a french drain that received steam condensate and overflow from a water tower. The drain has a square concrete base covered by two metal grates. The concrete base is approximately 1 meter (3.3 feet) deep. At the bottom of this reservoir is an opening approximately 11 centimeters (4.3 inches) in diameter. Inside the reservoir is a square metal plate held at an angle by two metal rods extending through the grates. Without this support, it appears as though the metal sheet would lay flat at the bottom of the reservoir and block the outlet pipe at the bottom. A metal pipe approximately 11 centimeters (4.3 inches) in diameter extends from the top of the water tower to just above the grates. Three pipes enter the northeast side of the reservoir approximately 0.4 meters (1.31 feet) from its top. The pipes terminate open-ended inside the reservoir. The site is surrounded by sand and cobbles.

Location: The site is located next to the southwest leg of the water tower south of the 3711 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the water tower south of the 3711 Building.

Waste Type: Water

Waste Description: The site received sanitary water from the water tower.

Waste Type: Steam Condensate

Waste Description: When this site was active, the flow rate was less than 0.038 liters per minute (0.01 gallons per minute).

Code: 300-215

Classification: Accepted

Names: 300-215; 300 Area South

Reclassification: Rejected (1/27/1999)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is very large and includes many different features. Much of the site is covered with vegetation such as cheatgrass and sagebrush. Two major roads cross the site: George Washington Way Extension and George Washington Way to Stevens Drive. Many old road traces exist and one major gravel road bisects the site. A gravel pit, and construction materials dumping ground are located in the north section of the site, south of the 300 Area fence, and west of the George Washington Way extension. Vestiges of irrigation canals are found throughout the site. Groundwater monitoring wells are found throughout the site. There is also a drywell (purpose unknown) in the area. Recent debris includes windblown garbage and tumbleweeds. Some older material near an irrigation canal may pre-date Hanford (e.g. porcelain china, battery cores, cans, and glass). A large diameter buried water line installed in the early 1990s is present in the southern part of the site. Underground electrical, water, and telephone lines are present on the site.

Location: Road on the South, the Columbia River on the east, and the southern 300 Area fence line on the north.

Waste Type: Construction Debris

Waste Description: There is some construction debris in a dumping area. However, there does not appear to be any hazardous waste dumped in the area. Photograph #1 shows some small battery cores. This was a concern to the EPA and asked that they be picked up. As of February 9, 1999, the "Battery Cores" had been picked up and sent to the Centralized Consolidation/Recycling Center.

Code: 300-217

Classification: Not Accepted

Names: 300-217; 300 Area Laydown Yard

Reclassification: None

Type: Storage

Start Date:

Status: Active

End Date:

Description: The area is currently in use as a laydown area for construction materials. Construction materials observed at the site included Connex boxes, steel pipe, ladders, steel, plastic pipe, wood pallets, insulation material, and railroad ties. Several vehicles were also stored at the site. No wood utility poles were observed and no stains were observed on the soil from temporary storage of wood utility poles. Most material is stored off the ground on racks. An electrical structure is located in the northwest part of the site. The numbers on the structure are: C3X483 on the west side, C3X481 on the north side, and C3-24 on the south side. Four access manholes are present south of the structure. Three of the manholes are 1.22 meters (4 feet) in diameter and the fourth is 0.91 meters (3 feet) in diameter. A 1.22-meter (4-foot) square concrete structure with a metal lid is present about 15.24 meters (50 feet) south of the north side fence. Well 399-04-01 is present on the northeast corner of the site. A minor amount of blown-in paper was observed. A large borrow pit is found south of the site.

Location: The site is located in the 300 Area, southwest of the intersection of Cypress and George Washington Way Extension.

Waste Type: Equipment

Waste Description: There is no waste at this site. Waste that had been a concern to Ecology had been removed prior to the time that the site was entered into WIDS.

Code: 300-220

Classification: Not Accepted

Names: 300-220; Gravel Pit #7; Pit 7

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date:

Description: The site is a manmade depression identified as Gravel Pit #7. The surface consists of sand and gravel with some cobbles, and a light vegetation cover of bunch grass and small sage. Trace fragments of concrete and asphalt can be found along the depression margins. Although it is included in the general radiologically controlled area north of the 300 Area, there are no site specific radiological postings.

Location: Gravel pit #7 is located north of 300 Area, northeast of the railroad tracks.

Related Sites/ Structures: The pit is related to Aluminum Shavings Area (Site Code 300-8).

Code: 300-222

Classification: Accepted

Names: 300-222; 384-W Brine Pit; 384-W Salt

Reclassification: Rejected (3/14/2002)

Dissolving Pit and Brine Pump Pit

Type: Sump **Start Date:** 1/1/1977
Status: Inactive **End Date:**

Description: The brine pit, a concrete underground storage pit, was cleaned out and filled with sand/gravel in May 1998. At the surface the structure measures 5.18 meters (17 feet) by 3.05 meters (10 feet). It was divided into two sections. The larger section is the salt dissolving pit, also called "brine pit" on drawings. This section held the salt that was dissolved to make the brine. A 3.8 centimeter (1.5 inch) stainless steel sprinkler pipe runs the length of the pit. A 3.8 centimeter (1.5 inch) PVC (polyvinyl chloride) brine return line enters the pit through its south wall. The bottom of the pit was covered with a 15 centimeter (6 inch) layer of gravel topped by a 15 centimeter (6 inch) layer of sand. Three 2.9 meter (9.5 foot) lengths of 10 centimeter (4 inch) transite tile pipe were located within the gravel layer. These three pipes connected through a dividing wall into the adjacent section. An overflow drain is located near the top of the structure. The salt dissolving pit is identifiable at the surface by its red metal cover. The smaller section is the brine pump pit, also called "tank" in drawings. A 5 centimeter (2 inch) PVC line exits the pit through its south wall. The brine pump pit is identifiable at the surface by its gray metal cover.

Location: The Brine Pit is located approximately 6 meters (20 feet) north of the west end of the 384 Powerhouse.

Process Description: The steam system used "soft" water. Water from the Water Filter Plant (315 Building) ran through a water softening process before going to the boilers. The brine was used to regenerate the ion exchange demineralizers in the water softeners. The brine was created by distributing raw water across the surface of the salt using the sprinkler pipe. As the water passed through the salt, the solution became saturated. The brine solution passed through the layers of sand and gravel which filtered out salt crystals and other particles. The filtered brine passed into the tile pipe and was discharged into the pump pit ready for use. Flow through the brine pit was achieved by the addition of new water into the salt dissolving pit and the removal of brine from the pump pit.

Waste Type: Abandoned Chemicals

Waste Description: Before it was cleaned out, the structure contained salt cake and/or brine, both of which may be designated as dangerous waste.

Code: 300-223 **Classification:** Accepted
Names: 300-223; 384 Powerhouse Fuel Oil Day Tanks #1 and #2 **Reclassification:** Closed Out (5/4/2004)
Type: Storage Tank **Start Date:** 1/1/1964
Status: Inactive **End Date:** 1/1/1998

Description: The site has been backfilled to grade. The site was backfilled on March 22, 2003 after the Day Tanks and surrounding contaminated soil had been removed. The tanks were carbon steel, underground storage tanks, positioned horizontally, in a north-south direction.

Location: The centers of the day tanks were located north of the north wall of the 384 Powerhouse. Day Tank #1 was the east tank and Day Tank #2 was the west tank.

Process Description: Fuel oil was pumped into the Day Tanks from the larger fuel oil bunkers. A heater in the Day Tanks kept the oil temperature at 120 degrees Fahrenheit. The oil was used to fuel the 384 Powerhouse boilers to create steam.

Related Sites/ Structures: 366/366A Fuel Oil Bunkers (WIDS Site 300-6), UPR-300-7 (closed out) and UPR-300-42.

Waste Type: Oil

Waste

Description:

Closure Info: On March 21, 1998, an offsite vendor removed the fuel from the 384 Fuel Bunker and associated day tanks. Some residual material remained in the tanks. In June of 1999, the tanks were removed, cleaned, and sold as scrap metal. A site assessment showed that diesel range organics and motor oils were found in almost all soil samples, and most were above the Model Toxics Control Act (MTCA) Method A cleanup levels of 200 milligrams per kilogram. Soils adjacent to the fill area of the tanks had the highest petroleum concentrations based on visual observations. No evidence of free product or petroleum saturated soil was found below the tanks. Visual inspection of the tanks indicated they were in good condition with no evidence of deterioration to the point that product would leak from them. The soil removed from the excavation was taken to Gravel Pit 9 for bioremediation (see 600-278). In September 1999, five verification samples were collected from the tank excavation and analyzed. The day tank excavation was backfilled to grade in March 2003.

Sampling of the tank residue and soil surrounding the excavation for an initial assessment, showed that petroleum hydrocarbons were present at levels above MTCA action levels. After consultation with Washington State Department of Ecology, the approach to cleanup was removal of contaminated soil until sampling documented that the remaining soils contained less than 200 parts per million total petroleum hydrocarbons (TPH).

Approximately 600 cubic meters of contaminated soil was removed from the site and taken to Pit 9 on the Hanford Site for bioremediation (sitecode 600-278). After visual and field screening indicated no contamination above cleanup levels remained in the excavation, five verification composite samples were collected and analyzed to confirm that cleanup levels had been met. One sample was collected from each of the sidewalls at about 1 meter (3 feet) above the base of the excavation and one from the floor of the excavation.

All results in the diesel range were below the MTCA Method A cleanup level of 200 mg/kg for petroleum contaminated soil. The TPH results showed a maximum of 230 mg/kg, with an arithmetic mean result of 168.2 mg/kg, below the cleanup level of 200 mg/kg. Per WAC 173-340-740(7)(d)(iii), Ecology has the regulatory discretion to select an appropriate method for analyzing the data. By closing out the site, Ecology is amenable to the use of the arithmetic mean as a measure of remediation success. On March 14, 2001, Ecology declared the sampling and analysis data acceptable and that the excavation could be backfilled.

Code: 300-225	Classification: Not Accepted
Names: 300-225; 3790 Building Stormwater Runoff; Miscellaneous Stream #767	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The site is a drain that received stormwater. It is located at the bottom of a stairwell that is covered with a corrugated metal roof. The drain is covered with a 0.30 meter (1.00 foot) metal grate and is surrounded by concrete.	
Location: The site is located on the east side of the 3790 Building at the bottom of the stairwell. The entrance to the stairwell is located on the east side of a fence.	
Related Sites/ Structures: This site is associated with the 3790 building.	

Structures:

Waste Type: Stormwater Runoff
Waste Description: This stream discharges to stream #378

Code: 300-226 **Classification:** Accepted
Names: 300-226; 3709A Building Miscellaneous Stream #768; Drip Station U39 **Reclassification:** Rejected (5/26/1999)
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: The site is covered with a 147-centimeter (58-inch) diameter steel plate. There are four holes in the cover. The drain structure is slightly elevated from the surrounding ground surface. The site is labeled "U-39" and is posted as a "Confined Space."
Location: The site is located off the southeast corner of the 3709A Building.
Process Description: The site is a drip station for the underground steam line that supplies steam for the 3709A Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the stream distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site was associated with 3709A Building.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 0.038 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-227 **Classification:** Accepted
Names: 300-227; 3709A Building Miscellaneous Stream #769; Drip Station U38 **Reclassification:** Rejected (5/26/1999)
Type: Injection/Reverse Well **Start Date:**
Status: Inactive **End Date:**
Description: The site is covered with a 147-centimeter (58-inch) diameter steel plate. There are four holes in the cover. The site is labeled "U-38" and is posted as a "Confined Space." It is flush with the surrounding ground in the lawn at 3709-A.
Location: The site is located off the northeast corner of the 3709A Building.
Process Description: The site is a drip station for the underground steam line that supplies steam for the 3709A Building. Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate

waste type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 0.038 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-228 **Classification:** Accepted
Names: 300-228; Drip Station U28; HPD-TRP-026; **Reclassification:** Rejected (5/26/1999)
Miscellaneous Stream #770; Steam Trap 3G-U28

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: The site is a french drain that received steam condensate. The drain is a concrete pipe covered with a 1.47 meter (4.28 foot) diameter perforated metal plate. The lid is labeled "U-28" and is posted "Danger, Limited Access/Confined Space." The top of the pipe appears to be flush with the ground surface. The site is located on a low rise relative to the surrounding area and is surrounded by sand and gravel. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located west/northwest of the northwest corner of the 3760 Building.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/Structures: The site is a drip station for the underground steam line that supplies steam for the 3709A Building.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 0.038 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-230 **Classification:** Accepted
Names: 300-230; HPD-TRP-29; Miscellaneous Stream **Reclassification:** Rejected (5/26/1999)
#771; Steam Trap 3G-U44; U44

Type: Valve Pit **Start Date:**

Status: Inactive **End Date:**

Description: The site is covered with a 173-centimeter (68-inch) diameter diamond plate steel cover. A square access hatch is located in the center of the cover. The below grade section is constructed of concrete with a dirt floor. The interior of the pit contains valves which released steam condensate to the floor. The site is labeled "U-44" and is posted as a "Confined Space."

Location: The site is located near the southeast corner of the 3746 Building.

Process Description: Steam is produced from sanitary water that has been sent through a water softener system to remove minerals (calcium and magnesium). The treated water is introduced into boilers to produce steam. This steam is superheated before distribution to facilities for heating and process use. Disposal sites receive steam condensate from the steam distribution lines. When used for heating purposes, this is a seasonal discharge. Non-regulated chemicals are added to dechlorinate the water, prevent scale, and control corrosion.

Waste Type: Steam Condensate
Waste Description: Steam condensate was discharged to the floor of the pit. According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 0.038 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-235 **Classification:** Accepted
Names: 300-235; 3713 Building Storm Water Runoff and Steam Condensate; Miscellaneous Stream #766 **Reclassification:** Rejected (5/26/1999)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site is a french drain that currently receives only stormwater. The drain is a concrete pipe that is covered by a 0.76 meter (2.49 foot) metal lid with perforations. The top of the pipe is flush with the ground surface and is surrounded by soil and gravel. The drain appears to be filled with soil to within approximately 0.7 meters (2.3 feet) of the top of the pipe. The upper 0.45 meters (1.5 feet) of the concrete pipe appear to be lined with some kind of a metal that is pulling away from the pipe. At least two, possibly three, metal pipes were observed extending into the side of the drain from the west. A small diameter (approximately 2.5 centimeters or 1 inch) pipe enters the side of the drain, makes a 90 degree turn and disappears into the floor of the drain. An approximately 5 centimeter (2 inch) open end pipe extends approximately 5 centimeters (2 inches) from the side of the drain. What appears to be a third pipe is covered with cobwebs that could not safely be removed. There are no pipes descending from the overhead steam line in the vicinity of the site. According to the "Inventory of Miscellaneous Streams," Revision 3, the steam source has been shut off.
Location: The site is located approximately 9 meters (29.5 feet) northeast of the northwest corner of the 3713 Building, under the overhead steam line.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 3713 Building.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 3.8 liters (1.0 gallons) per minute of nonhazardous/nonradioactive steam condensate. The site no longer receives steam condensate.

Waste Type: Stormwater Runoff
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 3.8 liters (1.0 gallons) per minute of stormwater only.

Code: 300-236 **Classification:** Accepted
Names: 300-236; HPD-TRP-020; Miscellaneous Stream #772; Steam Trap 3G-U45; U-45 **Reclassification:** Rejected (5/26/1999)
Type: Valve Pit **Start Date:**

Status: Inactive**End Date:**

Description: The site is a valve pit that received steam condensate. The structure has a square concrete base with a 1.31 meters (4.30 feet) by 1.31 meters (4.30 feet) metal lid. The lid is labeled "U-45" and "Danger, Confined Space." The lid has a hatch that allows access to its interior. The top of the concrete base ranges from approximately 5 to 10 centimeters (2 to 4 inches) above the ground surface. The site is surrounded by sand and some gravel. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is 10 meters (32.8 feet) southwest of the southwest corner of the 3719 Building. It is just east of the Apple Street Gate.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is related to the 300 Area steam line.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 3, the flow was less than 0.04

liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-237

Classification: Accepted

Names: 300-237; Miscellaneous Stream #773; Steam Trap HPD-TRP-010

Reclassification: Rejected (5/26/1999)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is described as a french drain that received steam condensate. An engineered structure was not evident in the field. A steam pipe runs down from the overhead steam line and terminates open-ended centimeters above the ground surface. The pipe is labeled "HPD-TRP-010." There is some soil discoloration where the pipe terminates above the ground surface that appears to be rust stains. This discoloration is confined to a very small area. There is also some rust discoloration on the concrete base of the pole that supports the steam pipe. The site is surrounded by sand with some gravel. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.

Location: The site is located southeast of the southeast corner of the 303C Building, west of 3707D, on the west side of Wisconsin Street.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 300 Area steam line.

Waste Type: Steam Condensate

Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than 0.04 liters (0.01 gallons) per minute of nondangerous/nonradioactive per minute of steam condensate.

Code: 300-238 **Classification:** Accepted
Names: 300-238; HPD-TRP-016; Miscellaneous Stream #774; Steam Trap 3G-U24; U-24 **Reclassification:** Rejected (5/26/1999)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site is a french drain that received steam condensate from an underground steam line. The drain is a concrete pipe covered by a 1.55 meter (5.09 foot) diameter metal lid. The lid is labeled "U-24" and "Danger, Limited Access/Confined Space." The site is surrounded by sand and gravel. The site or the nearby steam line are not labeled "HPD-TRP-016." According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.
Location: The site is located west/southwest of the southwest corner of the 305 Building, next to Alaska Street. It is just north of where the overhead steam line goes underground.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ Structures: The site is associated with the 300 Area steam line.

Waste Type: Steam Condensate
Waste Description: According to the "Inventory of Miscellaneous Streams," Revision 2, the flow used to be less than 0.04 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-239 **Classification:** Accepted
Names: 300-239; HPD-TRP-058; Miscellaneous Stream #775; Steam Trap 3G-U26; U26 **Reclassification:** Rejected (5/26/1999)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site is a french drain that received steam condensate. The drain appears to be a rust stained concrete pipe covered by a 0.61 meter (2.0 foot) diameter metal lid. The metal lid has some perforations and is labeled "U-26." The top of the pipe ranges from flush with the ground surface to approximately 2.5 centimeters (1 inch) above grade. The site is surrounded by sand and some asphalt. According to the "Inventory of Miscellaneous Streams," Revision 3, the site is inactive, source abandoned.
Location: The site is located on the south side of the 3762 Building, at the bottom of the access ramp. The "Inventory of Miscellaneous Streams," Revision 3, erroneously locates the stream south of the 3762 Building.
Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When

used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion.

Related Sites/ The site is associated with an underground steam line.

Structures:

Waste Type: Steam Condensate

Waste According to the "Inventory of Miscellaneous Streams," Revision 2, the flow was less than

Description: 0.038 liters (0.01 gallons) per minute of nondangerous/nonradioactive steam condensate.

Code: 300-240

Classification: Not Accepted

Names: 300-240; 314 Building Stormwater Drain;
Miscellaneous Stream #789

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site was a french drain that receives stormwater runoff. The drain appears to be constructed of concrete and is covered by a 0.64 meter (2.10 foot) metal grate. The grate is stamped "STD 42" and its edge seems to be sealed. The drain appears to be approximately 30 centimeters (1 foot) deep. The bottom is covered with sand and gravel. An approximately 10 centimeter (4 inch) diameter pipe enters the west side of the drain, makes a 90 degree turn towards the ground surface, and terminates with a screened opening. The top of the drain is flush with the ground surface, which is slightly depressed relative to the surrounding area. It appears as though the drain would collect runoff from the asphalt on the north side of 314 and from the gravel area southeast of 305B. During the December 17, 1998, walkdown, the inside of the drain appeared to be damp. The drain is surrounded by broken concrete, gravel and cobbles. The 314 Building is a closed facility. There is a similar structure west of this site, southeast of the southeast corner of 305B, south of the fenced area.

Construction drawings H-3-52655 and H-3-304714 sheet 2 show that the open bottom catch basin/french drain location is connected directly to the (300-15) process sewer pipeline.

Location: The site is approximately 17 meters west of the northeast corner of the 314 Building, just north of the asphalt.

Related Sites/ The site is associated with the area on the north side of the 314 Building.

Structures:

Waste Type: Stormwater Runoff

Waste According to the "Inventory of Miscellaneous Streams," Revision 3, the flow is less than 0.038

Description: liters (0.01 gallons) per minute of stormwater only.

Code: 300-241

Classification: Not Accepted

Names: 300-241; 320 Building Irrigation Line Effluent;
Miscellaneous Stream #790

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a 60 centimeter (2 foot) diameter, sprinkler valve pit. There is a water valve inside.

Location: The site is located on the southwest side of the 320 Building. WCH corrected the location of 300-241, to be at N 115486.1 m, E 593769.4 m.

Process Description: system.

Waste Type: Water

Waste Description: This site receives less than 0.038 liters (0.01 gallons) per minute of effluent from irrigation.

Code: 300-242

Classification: Not Accepted

Names: 300-242; 325 Building Stormwater Runoff; Miscellaneous Stream #791

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a concrete box that received drainage from the 325 Building. The box is a ground level, square, concrete structure with a steel cover. It measures approximately 0.9 meters (3 feet) by 0.9 meters (3 feet) and is approximately 0.6 meters (2 feet) deep. A large diameter carbon steel line coming from the basement of the 325 Building terminates inside the structure.

Location: The site is located approximately 4.5 meters (15 feet) east of the northwest corner of the 325 Building. The site is adjacent to Fire Protection Riser #1.

Waste Type: Stormwater Runoff

Waste Description: According to the Inventory of Miscellaneous Streams, Revision 3, the site receives less than 0.038 liters (0.01 gallons) per minute of stormwater only.

Code: 300-243

Classification: Not Accepted

Names: 300-243; 318 Building Stormwater Runoff; Miscellaneous Stream #792

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a rectangular grate in the pavement. Water was observed in the bottom of the drain during a site walkdown on December 14, 1998.

Location: The site is located on the north side of the 318 Building in the asphalt driveway.

Process Description: The drain receives stormwater runoff from the 318 Building.

Description:

Related Sites/ Structures: The site is related to the 318 Building.

Waste Type: Stormwater Runoff

Waste Description: The site receives less than 0.038 liters (0.01 gallons) per minute of stormwater only.

Code: 300-244

Classification: Not Accepted

Names: 300-244; 318 Building Stormwater Runoff; Miscellaneous Stream #793

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a horizontal metal culvert that protrudes from the ground in a gravel depression.

Code: 300-261 **Classification:** Accepted
Names: 300-261; 315 Filter Plant Process Sewer to River **Reclassification:** Rejected (5/26/1999)
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The sewer is constructed of a 0.61 meter (24 inch) vitrified clay pipe from the building to the river bank. A 0.8 meter (30 inch) corrugated steel flume (1/2 pipe) conveys the effluent down the riverbank and into the river. There is an active stormwater drain located on the west side of the road and due east of the outfall flume. This site has been identified as outfall 012 in DOE/EIS-0113.
Location: The 315 Filter Plant Process Sewer pipeline extends south easterly from the southeast corner of the 315 building towards 3906 Lift Station and then bends due east to the Columbia River.
Release Description: The effluent pipe inside the diversion box near the 315 building has been blanked off with plywood and filled in with concrete.
Process Description: The sewer conveyed water from the 315 basin overflow drains and the 315 filter backwash water to the river.
Waste Type: Water
Waste Description: The waste is a process sewer pipeline that received overflow and filter backwash from the 315 Filter Plant. Treatment chemicals included alum (aluminum sulfate), chlorine, and separan (a polyacrylamide -flocculent). The site no longer receives material from the 315 Filter Plant. It can receive stormwater.

Code: 300-264 **Classification:** Accepted
Names: 300-264; 327 Building; Demolished 327 Building; Postirradiation Testing Laboratory (PTL) **Reclassification:** None
Type: Foundation **Start Date:** 1/1/1953
Status: Inactive **End Date:**
Description: The 327 Building demolition occurred from April 2009 through August 2010. The basement remains as a posted Radioactive Contamination Area, to be addressed during final remediation and closeout actions.

The 327 Building is also known as the Postirradiation Testing Laboratory (PTL). During the facility stabilization and deactivation phase, radioactive material and contamination was removed and cleaned to allow for Decontamination and Decommissioning (D) activities. Many places in the building were posted as contamination and radiation areas. The facility was a one-story structure with a basement. The building had four major areas: 1) the Canyon, 2) the Transfer and Storage Area (also known as the Truck Lock), 3) the Northwest Storage Pad, and 4) the Basement.

The 327 Basement was separated into 3 areas. The north third was used to store supplies, idle equipment, cell plugs, and includes the SERF Cell storage. Legacy wastes (buckets with pieces of Transuranic Waste [TRU]) were staged in this area pending disposal. The middle of the basement housed the hot cell ventilation ductwork, HEPA filters for the hot cells, and the activated charcoal filtration system. The activated charcoal filtration system does not currently have filters installed because there are no programmatic or regulatory needs. An access hatch to a crawl space containing building steam pipes is also in this area. The south third of the

basement was separated from the rest of the basement by a wall. It included a cold equipment room, and hot and cold exhaust supply fans for the facility air inlet system supply. It also contained the Retention Process Sewer system diverter, stack monitoring system, stack base plenum and related equipment, vacuum air sampling system and pumps, and steam system components.

Location: The 327 Building is in the central part of the 300 Area, on the southwest corner of the intersection of California Street and Apple Street.

Release Description: Several unplanned releases and occurrences are recorded for the 327 Building. Occurrence reports over the previous decades showed fires and explosions in several of the Cells, contamination found outside of normal containment (to areas within the building, the outside atmosphere, and soils under the building), and the Retention Process Sewer Line improperly connected to the Process Sewer Line.

More recently, the fire suppression sprinkle line broke December 26, 1998. An estimated 57,000 to 76,000 liters (15,000 to 20,000 gallons) of water was released into the basement of the 327 building. A portion of the water collected in the elevator shaft. An estimated 946 liters (250 gallons) leaked into the soils under the building before the rest could be pumped to the 307 Facility. Analysis showed the water to be slightly radioactive.

Process Description: The laboratory (PTL) consisted of specially equipped, shielded, and ventilated Hot Cells and laboratories designed for physical and metallurgical examination and testing of irradiated fuels, concentrated fission products, and irradiated structural materials. The primary task was to determine the nature and causes of dimensional instability in fuel elements and the effects of irradiation stresses on pile materials. This involved destructive testing on extremely high-activity materials, including ruptured or failed fuel rods containing plutonium and fresh fission products. The irradiated fines generated by the work were swept up and treated as solid wastes, but powdery dusts were taken into air filters, ducts, and pipes.

Related Sites/ Structures: The floor drains from the Cells flowed into the 300 Area Radioactive Liquid Waste System (RLWS), which drained to the 340 Waste Handling Complex. A concrete access port to the RLWS valve pit was located in the parking lot on the southeast corner of the 327 building. The 327 RLWS piping is isolated from the 340 Facility by blind flanges (nuclear blank) in the southeast corner of the hot side basement. The building was later connected to the 300 Area Retention Process Sewer (WIDS sitecode 300-214) which drained to the 307 Retention Basins. The building was originally connected to the Retired Radioactive Liquid Waste System (300 Area RRLWS).

Waste Type: Equipment

Waste Description: Waste material was contained in the building ducts, filters, and piping. A 1995 assessment showed most gamma activity was due to Cesium-137, Cesium-134, Europium-154, and Cobalt-60. Approximately 170 grams (maximum) of plutonium was estimated to be in the ducts, piping and other locations in the building, with an additional 314 grams estimated to be in the cells.

Code: 300-266

Classification: Accepted

Names: 300-266; Soil Under 3728 Building Drain Pipe

Reclassification: Rejected (3/8/2001)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is soil below a 5-centimeter (2-inch) black plastic drain pipe on the southwest corner of the 3728 Building. In October, 1999, a white plastic bucket was placed under the drain pipe to catch any water draining out. The soil under the pipe is lightly graveled (as is the larger area

around the entire building), with some of the gravel directly under the pipe washed away. The soil is not discolored. No engineered structure was built as an injection well.

Location: The soil is at the southwest corner of the 3728 Building, in the 300 Area.

Process Description: The drain pipe is connected to a sink where containers are filled with de-ionized water. The de-ionized water system is also connected directly to the drain pipe, and contributes water to the pipe when the system undergoes maintenance. The water is site service water with trace amounts of sodium hypochlorite and hydrogen peroxide, used to disinfect the system.

Related Sites/ Structures: The 3728 Building is the source of the drain pipe.

Code: 300-267

Classification: Accepted

Names: 300-267; French Drain on Northeast Corner of 3728 Building, Miscellaneous Stream #829

Reclassification: Rejected (3/8/2001)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The drain structure has been removed and properly backfilled. The site was a concrete slab with a square pit at the end. The pit is 0.6 meters (2 feet) on a side, and filled with small pea gravel. A galvanized, 3.2-centimeter (1.25-inch) pipe comes from the building and enters the pit.

Location: The site is on the northeast corner of the 3728 Building.

Process Description: The french drain receives water from the HVAC system for the 3728 Building.

Related Sites/ Structures: The HVAC system for the 3728 Building is associated with the french drain. The 3728 Building is the ERC sample shipping facility.

Code: 300-271

Classification: Accepted

Names: 300-271; 324/327 Buildings 90 Day Storage Pad; HS-027

Reclassification: Rejected (9/14/2000)

Type: Storage Pad (<90 day)

Start Date: 1/1/1997

Status: Inactive

End Date: 1/1/2000

Description: The dangerous waste was kept in a connex box commercially manufactured for storing wastes. The box has a spill containment system in that the waste was stored on a grate at the level of the door threshold, and any spills would be contained under the grate so they could not spill out the door. The box is still in place, but is now used to store hazardous material intended for future use, such as roofing material, propylene glycol (trade name Dow Frost), and oils.

Location: This site was north of the 324 facility and west of the 3718E warehouse. It was within the 324 Building fenced and locked compound.

Process Description: The logbook for this pad shows only 6 entries for dangerous waste from the start date of October 31, 1997 to July 15, 1999. Materials stored there include absorbed gasoline, oils (possible contaminated with heavy metals), ice melt (sodium chloride), baking soda, toluene, and PCBs.

Related Sites/ Structures: This pad was used for hazardous and dangerous wastes from the 324 and 327 Buildings.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Wastes stored at this 90 Day Pad include absorbed gasoline, oils (possibly contaminated with heavy metals), ice melt (sodium chloride), toluene, and PCBs.

Code: 300-272 **Classification:** Accepted
Names: 300-272; Underground Storage Tank Near the 377 Building **Reclassification:** Closed Out (11/4/2002)
Type: Storage Tank **Start Date:**
Status: Unknown **End Date:**
Description: The site was an underground storage tank in a gravel field. The tank was removed in 2002.
Location: The underground storage tank was located within the industrial boundary of the 300 Area southeast of the 377 Building and northwest of the intersection of Alaska Street and Ginko Street.
Process Description: The 11,356 liter (3,000 gallon) tank served as a gasoline fueling station until the 1960's. The dispensing pump was removed prior to 1968 and the tank was removed in 2002.

Waste Type: Oil
Waste Description: Upon initial investigation of the UST site, an odor of fuel oil or diesel was noted when the fill tube extending above the ground surface was opened. Subsequent sampling and analysis of the tank contents in December 2001 indicated the liquid to be water with the impurities listed in the WSCF Analytical Results Report (See Field Work entry).

Closure Info: The Site Assessment Results report states that the liquid removed from the tank consisted of water with impurities. The contents of the tank were sampled on December 17, 2001 and analyzed at the WSCF laboratory (see additional details under the "Field Work" tab). Excavation of the soil surrounding the UST, the pipe connecting the tank to the dispensing pump, and the concrete pad used to support the dispensing pump was completed in mid-January 2002. Removal of these components was then completed by January 25, 2002.

A total of 37 samples including QA samples were collected and analyzed for total petroleum hydrocarbons in both the diesel fuel and gasoline ranges. The samples, were collected from areas where contamination was most likely to have occurred (i.e. beneath the tank, below the bottom of the connecting pipe and below the bottom of the concrete pad used to support the gasoline dispensing pump). Although Grab Sample #9 and Duplicate #10 from the spoils pile revealed 13.1mg/kg TPH-DX (Total Petroleum Hydrocarbons Diesel) and Grab Sample #15 from beneath the concrete pad revealed 43.1 mg/kg TPH-DX, none of the samples had detectable levels of gasoline range petroleum hydrocarbons using method TPH-G and none had diesel fuel range petroleum hydrocarbons in excess of 100 ppm using method TPH-D, and therefore were below 173-340 WAC Method A cleanup levels.

No evidence of leaking or failure of the connecting pipe or the tank was observed.

Code: 300-278 **Classification:** Accepted
Names: 300-278; 331-C Storage Unit **Reclassification:** Closed Out (7/22/2011)
Type: Storage **Start Date:** 1/1/2006
Status: Active **End Date:**
Description: The 331-C Storage Unit is a one-story metal building with fenced exterior areas constructed in the early 1970s. Upgrades were completed in 2006 to meet requirements for storage of

dangerous waste. Dangerous wastes are stored in Room 1 of the 331-C building. WA780008967, Part 3 states the Dangerous Waste Permit Application Part A Form was closed on 7/22/2011.

Location: The unit is located within the southern portion of the 300 Area, south of the 331 complex, near the intersection of Docton and Denmark Ave.

Process Description: The unit is used for the collection, consolidation, packaging, storage and preparation for transport and disposal of dangerous waste. Varieties of small volume chemical wastes are generated by PNNL's research laboratory activities under contract to DOE. These wastes are brought to the 331-C Storage Unit and segregated by compatibility for storage in the unit until enough waste is accumulated to fill a labpack or bulking container, usually a 30 to 55 gallon drum. When a sufficient number of shipping containers of waste have accumulated, they are manifested for shipment, generally to permitted off-site recycling, treatment or disposal facilities.

Waste Type: Chemicals

Waste Description: The unit stores waste that may include acid, oxidizers and flammable materials

Code: 300-282

Classification: Accepted

Names: 300-282; Crib Near 3717-B Building

Reclassification: Rejected (6/8/2011)

Type: Crib

Start Date:

Status: Inactive

End Date:

Description: This feature consists of the historical location of temporary experimental autoclaves with a settling tank that was connected to a wooden French drain. (DDTS-Generated-3822).

Location: The site location is not exactly known, but the information suggests it was near the process and sanitary lines at approximately (E) 593809 and (N) 116037. This is close to the midpoint of the process sewer (300-15) and sanitary sewer lines (300 SSS) that run underneath the footprint of the 3717-B building. There are other lines that run close by and lie within 20 m (65 ft) of the given coordinates and could be the site of the contamination spread (DDTS-Generated-3822).

Process Description: In 1944, temporary experimental autoclaves were installed on this site employing a settling tank connected to a wooden French drain or crib. The existence of the buried drain or crib is not posted or indicated on 300 Area drawings. During excavation for the construction of the 3717-B building during October 23-24, 1950, contamination of up to 50 mrep per hour was found on an upright, protruding timbers and soil. The contaminated timbers were potentially part of the forgotten French drain or crib. The site was subsequently excavated, but it is not known if the site was cleaned to today's standards or if the settling tank was removed (DDTS-Generated-3822). The excavated soil was used to create a mound in the 300 West area (618-13).

Related Sites/ Structures: The 3717-B building was either constructed over the site or close to the site in 1950.

Code: 300-285

Classification: Not Accepted

Names: 300-285; Ten French Drains and Dry Wells in 300 Area; 300 Area Steam Condensate French Drains/Dry Wells

Reclassification: None

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: This site consists of 10 discrete locations and underlying soil of steam condensate French drains/drywells and their associated below grade piping components. The French drains/drywells were discovered during the Orphan Site Evaluation (OSE) historical review. Each of the facilities that the French drains/drywells are associated with, were identified and process or function of the buildings determined. Details of inlet pipes, and French drain/drywell size and construction details are provided when available. Field verification and photographs of the present site conditions were obtained.

See detailed descriptions for each drain in site comment.

Location: The french drains are located throughout the 300 Area. See detailed locations for each drain in site comment.

Process Description: Steam was produced from sanitary water that had been sent through a water softener system to remove minerals (calcium and magnesium). The treated water was introduced into boilers to produce steam. This steam was superheated before distribution to facilities for heating and process use. Disposal sites received steam condensate from the steam distribution lines. When used for heating purposes, this was a seasonal discharge. Non-regulated chemicals were added to dechlorinate the water, prevent scale, and control corrosion. One drywell drained the stairwell landing of the first floor of the 314 building of rainwater.

Related Sites/ Structures: The drains are associated with the 301, 314, 315, 331, 335, 382, 3701-A and 3701-L Buildings.

Code: 303-K CWS

Classification: Accepted

Names: 303-K CWS; 303-K Contaminated Waste Storage

Reclassification: Closed Out (8/5/2002)

Type: Storage

Start Date: 1/1/1943

Status: Inactive

End Date: 1/1/2002

Description: The site has been demolished and clean closed as of July 22, 2002. The building site appears as a weedless gravel lot. The 303-K Facility included a former concrete and cinder block building with no windows, outdoor asphalt, concrete, and gravel storage areas, all surrounded by a six foot chain link fence. The building, which was torn down in 2001, had a cinder block east-west partition wall with a floor trench drain in the north room. The floor trench drain was sealed in 1988.

Location: The unit was located in the 300 Area on Ginko Street between the 313 and 314 Buildings.

Process Description: The main building was constructed in 1943 to store radioactive and mixed waste generated in the 300 Area. From 1943 to 1953, uranium and aluminum canned uranium was stored in the building. In 1953, the building was partitioned, floor trench drains and work benches were installed in the north room. In 1953 and 1978, outdoor storage pads (concrete and asphalt) were constructed to support the decontamination of aluminum reactor spacers until 1971. From 1953 to present, radioactive and mixed waste had been stored outside the building on the concrete, asphalt, and gravel pads. From 1971 to 1977, the north room was used for equipment decontamination and for storage. The interior walls were painted with a lead-based paint in 1977. Between 1977 and the fall of 1982 the unit was used to cure and test concreted billets of uranium chips and fines from the 304 Concretion Facility. Additional outdoor storage pads were installed in 1978 (asphalt) and in 1979 (concrete). From 1982 to 1986 the building continued to be used for equipment decontamination and storage. After 1986, the building was used to store containers of low-level radioactive waste and mixed waste.

Related Sites/ Structures: Structures associated with the 303-K Building include the other 303 Buildings, the 304

Related Sites/ Structures:	Building, the 333 Building, the 334-A Building, the 300 Area Waste Acid Treatment System, the exterior storage areas, and the process sewer system. The contaminated soil under and surrounding the facility was documented as WIDS site 300-251.
Waste Type:	Barrels/Drums/Buckets/Cans
Waste Description:	Since 1943, the building had been used to store various amounts of low-level radioactive wastes and mixed waste. Solids were stored outside, while liquids were contained inside the building. The mixed waste stored after January 1986 included: a. Neutralized solid waste for the unrecoverable uranium stream of the 300 Area Waste Acid Treatment System, b. Uranium contaminated metallic lead, c. Salt and sludge containers from beta and quench metal heat treatment furnaces, d. Uranium contaminated perchloroethylene, chloroform, and ethyl acetate, e. Beryllium/zircaloy-2 alloy chips and fines generated at the stepcut lathe, before and after concreting at the 304 Concretion Facility, f. Spent coolant from counterbore lathes in the 333 Building, g. Waste oil and hydraulic fluids that are known, or strongly suspected, to be contaminated with uranium, h. Salt crystals (copper fluorozirconate) from the bottom of the waste storage tanks in the 334-A Building, i. Acids (HNO ₃ , HF, and H ₂ SO ₄ mixtures) as a solution and sorbed on opal clay. There were no records of waste spills or leaks at the site. Note: Waste materials began being generated in 1943 with the construction and startup of this facility.
Closure Info:	Physical closure activities for the 303-K CWS were completed July 2002. Closure Certifications were prepared in accordance with the Washington Administrative Code (WAC) 173-303-610 and the approved 303-K Storage Facility Closure Plan, DOE/RL-90-04, Rev. 2A as amended by the Hanford Facility RCRA Permit, Part V, Chapter 14. The certifications attest that 303-K Storage Facility closure activities are complete and were performed in accordance with the approved closure plan. A Professional Engineer certified completion of closure on August 15, 2002. After closure activities were achieved and verified, Ecology-approved clean closure criteria for soils and structures. Ecology formally acknowledged the closure certification for the 303-K Storage Facility by letter, DOE/RL-02 RCA-0424, dated August 5, 2002.
	To complete the clean closure and in accordance with the closure plan, the entire 303-K Building was demolished. The rubble and excavated soil were designated and disposed of as low-level waste at the Hanford site Low Level Burial Grounds (LLBGs). After the site inspection, the soils were compacted and the site was backfilled with gravel.

Code:	304 CF	Classification:	Accepted
Names:	304 CF; 304 Concretion Facility	Reclassification:	Closed Out (11/30/1995)
Type:	Process Unit/Plant	Start Date:	1/1/1952
Status:	Inactive	End Date:	1/1/1995
Description:	The 304 Concretion Facility was designed and constructed in 1952. The main building is metal and rests on a concrete pad. The ceiling has exposed steel trusses (girders). The north and south ends of the building have sliding doors, and there are windows in the east side. Regular doors are located on the north and west sides. The building has no interior insulation or wallboard. Drainage to the process sewer is provided by a trench along the eastern wall, a sump along the western wall, a sink drain, and a floor drain. A metal change room was added on the east side of the building in 1972. The sliding metal doors are located in the north and west walls and a window is located on the east side of the change room. The walls and ceiling of this change room are insulated and covered by wallboard. There is a concrete pad on the north side of the building (WIDS Site 304 SA). During the history of the Facility, several exhaust and vent systems were used. The original system was composed of three roof vents powered by 58 cubic meters (2,050 cubic feet) per minute electric fans. This system was used from 1952 to the mid-1960's. The electricity was disconnected to the fans in 1971. When the building had furnaces for the melting of metals (1952 to the late 1950's), the furnace cooling air was exhausted		

through a 15.2 centimeter (6 inch) diameter exhaust pipe on the west side of the building. The exhaust pipe is still in place, but is sealed off in the sump (formerly a furnace pit). The first fume exhaust system was a 53.8 cubic meters (1,900 cubic feet) per minute Roto-clone exhauster and was used to exhaust acid and nitrogen oxide fumes from the nickel plating operations (late 1950's to mid-1960's). No monitoring capabilities existed on this exhaust system. The existing cyclone precipitator exhaust system replaced the plating operation exhaust system in 1971. Both exhausters were located on the concrete pad outside the east side of the building. The flow rate, manufacturer, and efficiency of the present cyclone exhaust system are unknown. The exhaust system was used to remove cement dust from the operator's work area when bags of cement were being emptied and the concrete mixer was in operation. After the air passed through the cyclone precipitator, it was discharged vertically approximately 3.66 meters (12 feet) above ground level. The discharge was sampled continuously for uranium particulates while the precipitator was in service. In addition to the exhaust systems described previously, the building contained a 939 square meters (10,000 square feet) per minute evaporative (swamp) cooler. Until approximately 1985, the swamp cooler was used to cool the building. The swamp cooler was located on the concrete pad outside the southeast corner of the building. The swamp cooler was removed in 1992. The Facility contains five drains that entered the process sewer. A floor drain near the cement mixer discharges to the sump where fines settled out. The sump has a removable screened standpipe, about 40.6 centimeters (16 inches) high, that overflowed into an underground drain line to the process sewer on the east side of the building. A water line discharged directly into the overflow pipe below the screen and was used when the concretion process was in operation. This flowing water (flow rate unknown) helped prevent the P-trap from plugging with concrete. Four other drains entered the main underground drain, including a drain from the east side floor trench, a drain from the sink in the southwest corner of the building, and overflow drain from the outside steam condensate quench sump on the east side of the building, and a drain from the swamp cooler on the exterior pad at the southeast corner of the building. The main underground drain slopes from the bottom of the sump to the process sewer. The elevation of the bottom of the main drain, where the drain passes under the east wall of the Facility, is about 116.1 meters (381 feet). The elevation of the bottom of the process sewer is about 115.5 meters (379 feet), and elevation of the Facility floor is about 117.7 meters (386 feet)

- Location:** The unit is located in the northwestern 300 Area on the south side of Ginko Street across from the 303-K, 314, and 313 Buildings.
- Release Description:** During concretion operations, the 304 Facility floor was washed down daily with water. Because the steel walls of the main building were not sealed to the concrete wall base until 1989, and there were numerous small holes in the walls, rinse water splashing against the steel walls might have carried contamination out of the building. In addition, there were no berms at the north and south doors to stop washdown water from leaving the building. The north fenced pad does not have a berm to contain spills or precipitation. The north sliding door normally was left open to allow forklift traffic for container transport. A billet fire in 1977 may have contributed to the spread of contamination within the building. In August 1977, high temperatures inside the 304 Facility (resulting from the failure of the cooling system) caused six concrete billets in 28.4 liter (7.5 gallon) containers to ignite. Uranium oxide and small amounts of zirconium oxide and copper oxide were formed by the burning billets. Cleanup water was drained through the drainage trenches into the process sewer. After the 1977 fire, concrete billets were cured initially in cold water cooling pans before being transported to the 303-K Facility where the final curing process took place.
- Process Description:** The 304 Concretion Facility consisted of a container storage area and a concretion system used to treat mixed waste and recyclable uranium scrap. The 304 Facility was in operation from 1952 to 1988. During this time, the following activities occurred: From 1952 to the late 1950's, the building was used as a pilot plant to fabricate aluminum-clad uranium cores by lead-dip canning process. From the late 1950's to the mid-1960's, the building was used as a pilot

plant to electroplate uranium with nickel. From the mid-1960's to 1971, the building was used to store engineering equipment and product chemicals. From 1971 to 1982 recyclable scrap uranium with zircaloy-2 and copper-silicon alloy chips and fines were concreted into billets. Beginning In 1977, the billets were cured in both the 304 Facility and 303-K Radioactive Mixed Waste Storage Facility (303-K Facility) before being shipped to Fernald, Ohio, for uranium recovery. From 1972 until 1986, beryllium/zircaloy-2 alloy and zircaloy-2 chips and fines were concreted in containers to reduce their ignitability. These containers were buried in the 200 Areas burial grounds. From 1975 to the spring of 1988, depleted uranium alloy chips and fines from Pacific Northwest Laboratory (PNL) were concreted into billets and returned to PNL for subsequent shipment to the 200 Areas burial grounds. In the spring of 1994, pyrophoric metal waste from dismantling of the 300 Area fuel processing equipment was concreted in drums to reduce ignitability. These drums were buried in a 200 Area burial ground. This is the final treatment activity planned for the 304 Facility. Waste treated in the 304 Facility was generated by processes in the 300 Area. The waste sources are summarized as follows. Beryllium/zircaloy-2 alloy and zircaloy-2 chips and fines that were stored temporarily at the 303-K Facility were concreted into containers to reduce their ignitability. From 1985, spent counterbore lathe coolant (an aqueous synthetic lubricant) from lathes in the 333 Building was stored at the 303-K Facility until it could be used as makeup water in the 304 Facility cement mixer during concretion of chips and fines. The coolant was a nonregulated material. The spent counterbore lathe coolant used for makeup water for concretion in the 304 Facility was Polar chip 350L, which was diluted with water 20 to 1. Besides uranium, copper-silicon alloy, zircaloy-2 alloy, and graphite particulate, the only other potential contaminant in the lathe coolant was AW Hydraulic Oil 32, used in the counterbore lathe. During concretion operations, the 304 Facility floor was washed down daily with water. Because the steel walls of the main building were not sealed to the concrete wall base until 1989 and there were numerous small holes in the walls, rinse water splashing against the steel walls might have carried contamination out of the building. In addition, there were no berms at the north and south doors to stop washdown water from leaving the building. The north fenced pad does not have a berm to contain spills or precipitation. The washing down of the floor is unlikely to have caused airborne contamination, because damp uranium saw fines and chips are too large and dense for easy air suspension. Uranium has a specific gravity of 18.9 and uranium oxides have a specific gravity of 7.3 to 10.9. Damp saw fines have a tendency to stick together and about 73 percent of new saw fines are greater than 100 mesh (150 microns). In addition, the cyclone precipitator was in operation at all times when the cement bags were emptied and the concrete mixer was in operation. During concretion operations, the north sliding door normally was left open to allow forklift traffic for container transport. A floor drain near the cement mixer discharged to the sump where fines settled out. The sump has a removable screened standpipe about 40.6 centimeters (16 inches) high that overflowed into an underground drain line to the process sewer on the east side of the building. A water line discharged directly into the overflow pipe below the screen and was used in the concretion process. This flowing water (flow rate unknown) helped prevent the P-trap from plugging with concrete, which happened at least twice during the operation of the 304 Facility. No radiation detectors were in the process sewer and no routine sampling of the process sewer from the 304 Building occurred. Sampling was done at the outflow from the combined 300 Area process sewer system. Once a year during the recyclable uranium concretion operation (1971 to 1982), a 3-day sample of the overflow pipe in the sump was taken to calculate a loss factor to the sewer for uranium chips and fines. The highly variable flow rate was calculated by adding a known dilute concentration of lithium nitrate (0.2 pound per gallon) at a known flow rate to the sump for a known sampling time. The change in lithium concentration and time would give the total volume of solution discharged from the sump. Until March 1975, all waste liquid chemicals in the fuels operation were discharged to the process sewer. Therefore, during the nickel-plating pilot plant operation (late 1950's to mid-1960's), waste chemicals from this operation in the 304 Facility would have entered the process sewer. Routine discharges of chemicals to the process sewer were terminated after March 1975. During concretion operations, the water that covered the uranium chips and fines, and 5 percent beryllium/zircaloy-2 chips in the incoming drums, were

drained into the process sewer after passing through the sump to settle out entrained solids. The water covering the chips and fines would have contained an unknown amount of cutting fluid from the lathe operations. Four different types of cutting fluids were used. In the summer of 1988, spent halogenated solvents consisting of perchlorethylene, 1,1,1-trichloroethane, and rinse water used in degreasing tanks in the fuels manufacturing process were stored at the 303-K and then moved to the 304 Facility for repackaging. Included in this repackaging effort was waste from the 300 Area paint and sign shop. Repackaging was accomplished by placement into new containers along with absorbent material. The containers were returned to the 303-K Facility. Handling and storage time for these spent solvents at the 304 Facility was less than 90 days. Ethyl acetate-bromine solutions generated from laboratory analysis work for uranium were occasionally mixed with the degreaser solvents. No spills were reported during this operation. It is recognized that several factors associated with operations may have resulted in contamination of the 304 Facility. These factors include use of the building to house pilot plants, concretion operations, the occurrence of a billet fire in 1977, repackaging of spent solvents and ethyl acetate-bromine solutions, and storage of spent counterbore lathe coolant inside the building and on the outside storage pad. One final concretion was run at the 304 Facility during the mid-1990's. This concretion run was used to treat and stabilize pyrophoric material generated during the final disassembly and removal of the fuels processing equipment. Prior to starting the final concretion run, all floor drains were to be plugged to prevent the entry of water. The concretion was done in the disposal containers to eliminate the need to use the cement mixer.

**Related Sites/
Structures:** Units associated with this site include the 304 Storage Area, the 300 Area Process Sewer, and internal process equipment.

Waste Type: Chemicals

**Waste
Description:** Radiological contamination (derived from building concretion and plating activities) on surfaces and in building piping may still be present. Hazardous wastes were addressed in the facilities RCRA closure plan.

The waste sources are described below.

Beryllium/zircaloy-2 alloy and zircaloy-2 chips and fines that were stored temporarily at the 303-K Facility were concreted into containers to reduce their ignitability.

From 1985, spent counterbore lathe coolant (an aqueous synthetic lubricant) from lathes in the 333 Building was stored at the 303-K Facility until it could be used as makeup water in the 304 Facility cement mixer during concretion of chips and fines. The coolant was a nonregulated material. The spent counterbore lathe coolant used for makeup water for concretion in the 304 Facility was Polar chip 350L, which was diluted with water 20 to 1. Besides uranium, copper-silicon alloy, zircaloy-2 alloy, and graphite particulates, the only potential contaminant in the lathe coolant was AW Hydraulic Oil 32, used in the counterbore lathe.

Once a year during the recyclable uranium concretion operation (1971 to 1982), a 3-day sample of the overflow pipe in the sump was taken to calculate a loss factor to the sewer for uranium chips and fines. The highly variable flow rate was calculated by adding a known dilute concentration of lithium nitrate 0.34 kilograms per liter (0.2 pounds per gallon) at a known flow rate to the sump for a known sampling time. The change in lithium concentration and time would give the total volume of solution discharged from the sump. No routine sampling of the process sewer from the 304 Building occurred.

Until March 1975, all waste liquid chemicals in the fuels operation were discharged to the process sewer. Therefore, during the nickel-plating pilot plant operation (late 1950's to mid-1960's), waste chemicals from this operation in the 304 Facility would have entered the process

sewer.

During concretion operations, the water that covered the uranium chips and fines, and 5 percent beryllium/zircaloy-2 chips in the incoming drums, were drained into the process sewer after passing through the sump to settle out entrained solids. The water covering the chips and fines would have contained an unknown amount of cutting fluid from the lathe operations. Four different cutting fluids were used.

In the summer of 1988, spent halogenated solvents consisting of perchloroethylene, 1,1,1-trichloroethane, and rinse water used in degreasing tanks in the fuels manufacturing process were stored at the 303-K Facility and then moved to the 304 Facility for repackaging. Occasionally, Ethyl acetate-bromine solutions generated from laboratory analysis work for uranium was mixed with degreaser solvents.

The maximum estimated inventory of containerized waste stored at the 304 Facility at any time was 40 containers. This total includes container sizes (not including overpacks) of 55, 30, and 7.5 gallons. Some of these containers contained labpacks, some were partially filled, and some were full. Up to 10 208 liter (55 gallon) containers could be concreted each day. An average of 9071.8 kilograms (20,000 pounds) of dangerous waste was concreted each year. The maximum amount stored inside was 2082 liters (550 gallons).

Closure Info: 304 CF and 304 SA were addressed as a group. The information below documents information for the group of sites.

The cleanup and closure strategy for the site was to decontaminate the interior of the 304 Building to remove known or suspected contamination, then to sample for the constituents of concern, and then to perform data analysis, with an evaluation to determine the required actions to meet closure criteria. Criteria for the 304 Concretion Facility was that the concentrations of potentially dangerous constituents treated, stored, or used not be present above the regulatory cleanup levels. If the potentially dangerous constituents are above action levels, then the evaluation was to determine the actions required. The evaluations could consider the type and extent to which the action levels were exceeded, and an assessment of health based risks. Generally, if the decontamination for dangerous constituents was not effective, the appropriate building section, floor, or pad was to be removed and properly disposed of as mixed waste. The radiological contamination at the 304 Concretion Facility was not addressed by the closure plan.

Phase I Decontamination was to vacuum to remove any loose contamination. Areas excluded from decontamination were the changeroom interior, all exterior surfaces of the 304 Building, and the exterior concrete and asphalt pads. All areas within the facility were vacuumed. No unusual incidents occurred.

Phase II decontamination was to damp wipe decontamination with a detergent solution to remove surface contamination. There were two areas that could not be decontaminated successfully, the sump and the trench. In both areas, the concrete on the sides and floor crumbled as it was wiped. The crumbling of the concrete prevented effective decontamination. There were approximately 75 millimeters (3 inches) of cement dust, sand, and chunks of semi-consolidated cement. The source of the sump material was the past concretion operations that used water to wash metallic fines and lose cement powder into the sump where the fines settled out. Both areas contained sampling points that were used to determine if any of the constituents of concern were present.

The facility connection to the Process Sewer is not part of the TSD (per the Closure plan).

Under Section 8.2 Postclosure Care of the 304 Concretion Facility Closure Plan (DOE/RL-90-03), the document states that the underlying soils and groundwater might have been

contaminated by waste generated during past practice operations in the 300 Area. All soil remediation will take place under the CERCLA remedial action process (WIDS Site 300-43). If the soil within the 304 Facility boundary is found to be contaminated from operations conducted in the 304 Facility, the 304 Facility will not be considered closed until the remediation under CERCLA is complete.

Code: 304 SA **Classification:** Accepted

Names: 304 SA; 304 Storage Area; 304 Building Storage Area **Reclassification:** Closed Out (11/30/1995)

Type: Storage **Start Date:** 1/1/1972

Status: Inactive **End Date:** 1/1/1986

Description: The 304 Storage Area is a concrete pad surrounded by asphalt on two sides.

Location: The unit is located in the northwestern 300 Area on the south side of Ginko Street across from the 303-K, 314, and 313 Buildings. The storage area is located on the north side of the 304 Building.

Process Description: The storage area was used to store potentially contaminated wastes generated in the fuel fabrication process.

Related Sites/Structures: The unit is associated with the 304 Concretion Facility (WIDS Site 304 CF).

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: No wastes are currently stored at the site. The area was previously used to store containers of potentially contaminated waste generated in the fuel fabrication process. The site was RCRA clean closed in 1995. Radiological contamination may be present on pad surfaces and in the surrounding soil.

Closure Info: 304 CF and 304 SA were addressed as a group. The information below documents information for the group of sites.

The cleanup and closure strategy for the site was to decontaminate the interior of the 304 Building to remove known or suspected contamination, then to sample for the constituents of concern, and then to perform data analysis, with an evaluation to determine the required actions to meet closure criteria. Criteria for the 304 Concretion Facility was that the concentrations of potentially dangerous constituents treated, stored, or used not be present above the regulatory cleanup levels. If the potentially dangerous constituents are above action levels, then the evaluation was to determine the actions required. The evaluations could consider the type and extent to which the action levels were exceeded, and an assessment of health based risks. Generally, if the decontamination for dangerous constituents was not effective, the appropriate building section, floor, or pad was to be removed and properly disposed of as mixed waste. The radiological contamination at the 304 Concretion Facility was not addressed by the closure plan.

Phase I Decontamination was to vacuum to remove any loose contamination. Areas excluded from decontamination were the changeroom interior, all exterior surfaces of the 304 Building, and the exterior concrete and asphalt pads. All areas within the facility were vacuumed. No unusual incidents occurred.

Phase II decontamination was to damp wipe decontamination with a detergent solution to remove surface contamination. There were two areas that could not be decontaminated successfully, the sump and the trench. In both areas, the concrete on the sides and floor crumbled as it was wiped. The crumbling of the concrete prevented effective decontamination.

There were approximately 75 millimeters (3 inches) of cement dust, sand, and chunks of semi-consolidated cement. The source of the sump material was the past concretion operations that used water to wash metallic fines and lose cement powder into the sump where the fines settled out. Both areas contained sampling points that were used to determine if any of the constituents of concern were present.

The facility connection to the Process Sewer is not part of the TSD (per the Closure plan).

Under Section 8.2 Postclosure Care of the 304 Concretion Facility Closure Plan (DOE/RL-90-03), the document states that the underlying soils and groundwater might have been contaminated by waste generated during past practice operations in the 300 Area. All soil remediation will take place under the CERCLA remedial action process (WIDS Site 300-43). If the soil within the 304 Facility boundary is found to be contaminated from operations conducted in the 304 Facility, the 304 Facility will not be considered closed until the remediation under CERCLA is complete.

Code:	305-B SF	Classification:	Accepted
Names:	305-B SF; 305-B Storage Facility	Reclassification:	Closed Out (6/28/2007)
Type:	Storage	Start Date:	1/1/1978
Status:	Inactive	End Date:	
Description:	The 305-B Building is a one story frame and steel building with a basement. It was constructed in 1952 and modified in 1954. In January 1978, a two story high-bay was added for waste storage.		
Location:	The 305-B building is located in the northwest corner of the 300 Area, on Alaska Street, south of the 305 Building and north of 314. The storage areas were located in the basement and in the high bay area of the building.		
Process Description:	The 305-B facility was used to store, segregate, repackage, and sample hazardous and radioactive mixed waste generated by Pacific Northwest National Laboratory (PNNL) Research Laboratories in the 300 Area. Upon receipt at the 305-B Storage Facility, waste was placed in proper storage areas, depending on waste type and quantity. Dangerous waste was stored on the first floor, in the high bay area. Four storage cells were constructed in the high bay to segregate incompatible waste (Acids and Oxidizers, Poisons and CRV's, Caustics and WSDW and Organics). Non-flammable Radioactive Mixed Waste was stored in the basement of the original building. The area is capable of segregating wastes in four 7.6 meter by 7.6 meter (5 foot by 5 foot) stainless steel container pans. Flammable radioactive mixed waste could not be stored in the basement. Flammable material was stored in the east portion of the building in a 2.1 by 2.1 by 2.1 meter (7 foot by 7 foot by 7 foot) flammable liquid storage module. When a sufficient amount of waste has been accumulated, waste is transported to a permitted offsite treatment/disposal facility. Prior to use as a treatment storage and disposal facility, the unit housed two test reactors that operated from the mid 1950's until 1978.		
Related Sites/Structures:	The building is associated with waste generated from Research and Development operations (Pacific Northwest National Laboratory) PNNL in the 300 Area.		
Waste Type:	Barrels/Drums/Buckets/Cans		
Waste Description:	The site is currently used to store hazardous and mixed waste.		
Waste Type:	Chemicals		
Waste Description:	Chemical and radiological contamination may be present in and around the facility, due to the operation of the Physical Constants Test Reactor and the Thermal Test Reactor that operated in		

the building prior to 1978. In 1978 the building became a waste assembly area/satellite storage area for the 300 Area Research and Development facilities in the 300 Area. Hazardous and radioactive waste has been stored, repackaged and/or consolidated (mostly in 55 gallon drums) in the 305-B building high bay and basement. The designed storage capacity is 30,000 gallons.

Code:	307 RB	Classification:	Accepted
Names:	307 RB; 307 Retention Basins	Reclassification:	None
Type:	Retention Basin	Start Date:	1/1/1953
Status:	Active	End Date:	
Description:	The facility consists of four open, epoxy-coated, concrete basins. Each basin has a nominal 94,500 liter (25,000 gallon) capacity. The Retention Process Sewer (RPS) ties into the basins on the north side, passing through a sample pit northwest of retention basin #1. The 300 Area Process Sewer and the Radioactive Liquid Waste Sewer (RLWS) drain from the south side of the basins.		
Location:	The 307 Retention Basins are located directly south of the 340 Building and the 340 Vault. The basins are part of the 340 Complex. They are inside the 340 Complex fence.		
Process Description:	The retention basins are fed by the Retention Process Sewer (RPS) and currently discharge to the 300 Area Process Sewer. All facilities currently tied into the RPS are equipped with in-line beta-gamma detectors at diverter stations in the basement of each building. The 308 Building, now disconnected, did not have in-line detectors. In 1996, the diverter station in 326 was upgraded and took over duties for both the 326 and 329 Buildings. In the event that a detector trips the alarm, all RPS waste is routed to the Radioactive Liquid Waste Sewer (RLWS) by valves at the diverter station. Waste in the basin is then sampled. In the event that sampling detects basin waste above discharge limits, valves at the retention basins enable operations personnel to route basin effluent to the RLWS. Since 1995, retention waste below discharge limits is released to the 300 Area Treated Effluent Disposal Facility (TEDF). From 1975 to 1994, retention basin releases went to the 316-5 Process Trenches. From 1963 to 1975, it was released to the process ponds (WIDS Sites 316-1 and 316-2). From 1953 to 1963, retention waste below discharge levels was released to the 307 Trenches (316-3). With the retirement of the RLWS in 1998, waste above the discharge limits is held in the retention basins until it can be transported to the 200 Area double-shell tanks. Prior to 1998, waste above the discharge criteria was discharged to the RLWS and 340 Vault tanks. The waste sent to the 340 Vault tanks was transported by tanker truck or rail to the 200 Area for storage or disposal.		
Related Sites/Structures:	The 300 Area Process Sewer (WIDS Site 300-15), the Retention Process Sewer (RPS) (WIDS Site 300-214), the Radioactive Liquid Waste Sewer (RLWS) (WIDS Site 300 RLWS), Retired Radioactive Liquid Waste Sewer (RRLWS) (WIDS Site 300 RRLWS), and the 340 Complex (WIDS Site 340 Complex) are all associated with the 307 Retention Basin operations. Generating facilities tied into the RPS include the 324, 325, 326, 327, and 329 Buildings. The 308 Building was isolated from the system in 1996. The 325 Building will be the last facility to be isolated from the RPS.		
Waste Type:	Process Effluent		
Waste Description:	The Retention Process Sewer line and the 307 Retention Basin systems (the 3707-F control shack, the RPS sample pit, 307 Trench and RLWS diversion control, and other ancillary equipment) were installed to collect "potentially" contaminated liquids from the sinks, drains and sumps of the laboratory facilities. During FY98, 12 million liters (3 million gallons) of liquid was received by the retention basins; none was diverted to the Radioactive Liquid Waste Sewer (RLWS). Liquid effluents that meet process sewer discharge criteria are released to the process sewer. Waste that exceeds discharge limits is held until it can be transported to the 200 Area double-shell tanks. Prior to October 1, 1998, waste above discharge limits was diverted to		

the 340 facility holding tanks.

Code: 309-TW-1 **Classification:** Accepted
Names: 309-TW-1; 309 Holdup Tanks; 309-TW Tank #1 **Reclassification:** None
Type: Storage Tank **Start Date:** 1/1/1960
Status: Inactive **End Date:** 1/1/1973

Description: Tank 309-TW-1 is the northernmost tank in the 309 Holdup Tank System. All three tanks are located in a rectangular, underground concrete vault. A chain-link fence surrounds the site. Pumps, vents, piping, a valve box and the top of the concrete vault are visible above grade. The tanks are empty and the line to the sewer is capped. Residual contamination is present in the tanks and piping.

Location: The tank is located at the north end of a concrete vault northeast of the 309 Building.

Process Description: Contaminated liquid waste from the operation of the reactor was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer.

Related Sites/Structures: Structures associated with the tank include the other two holdup tanks, the adjacent valve box, the 309 Building, and the 300 Area radioactive liquid waste sewer. WIDS Site 300-255 (309 Tank Farm Contaminated Soil) addresses the contaminated soil inside the 309 Tank Farm fence.

Waste Type: Process Effluent
Waste Description: The unit received aqueous nonhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor. Residual contamination may be present in the empty tanks.

Code: 309-TW-2 **Classification:** Accepted
Names: 309-TW-2; 309 Holdup Tanks; 309-TW Tank #2 **Reclassification:** None
Type: Storage Tank **Start Date:** 1/1/1960
Status: Inactive **End Date:** 1/1/1973

Description: Tank 309-TW-2 is the center tank in the 309 Holdup Tank System. All three tanks are located in a rectangular, underground concrete vault. A chain-link fence surrounds the vault. Pumps, vents, piping, a valve box and the top of the concrete vault are visible above grade. The tanks are empty and the line to the sewer is capped. Residual contamination is present in the tanks and piping.

Location: The tank is located at the center of a concrete vault on the north east side of the 309 Building.

Process Description: Contaminated liquid waste from the operation of the reactor was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer.

Related Sites/Structures: Structures associated with the tank include the other two holdup tanks, the adjacent valve box, the 309 Building, and the 300 Area radioactive liquid waste sewer. WIDS Site 300-255 (309 Tank Farm Contaminated Soil) addresses the contaminated soil inside the 309 Tank Farm fence.

Waste Type: Process Effluent
Waste Description: The unit received aqueous nonhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor. Residual contamination may be present in the tanks.

Code: 309-TW-3 **Classification:** Accepted

Names: 309-TW-3; 309 Holdup Tank; 309-TW Tank #3 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1973

Description: Tank 309-TW-3 is the southernmost tank in the 309 Holdup Tank System. All three tanks rest in a rectangular, underground concrete vault. A chain-link fence surrounds the vaults. Pipes and risers are visible above grade. The tanks are empty and the line to the sewer is capped. Residual contamination is present in the tanks and piping.

Location: The tank is located at the south end of a concrete vault on the northeast side of the 309 Building.

Process Description: Contaminated liquid waste from the operation of the reactor was pumped to the holdup tanks prior to discharge to the radioactive liquid waste sewer.

Related Sites/ Structures: Structures associated with the tank include the other two holdup tanks, the adjacent valve box, 309 Building, and the 300 Area radioactive liquid waste sewer. WIDS Site 300-255 (309 Tank Farm Contaminated Soil) addresses the contaminated soil inside the 309 Tank Farm fence.

Waste Type: Process Effluent

Waste Description: The unit received aqueous nonhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor. Residual contamination may be present in the tank.

Code: 309-WS-1 **Classification:** Accepted

Names: 309-WS-1; PRTR Ion Exchange Vault; Reactor Ion Exchange Pit; 309 Plutonium Recycle Test Reactor Ion Exchanger Vault **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1961

Status: Inactive **End Date:** 1/1/1969

Description: The 309-WS-1 Vault is a below grade, reinforced concrete structure containing two levels. The vault has connecting piping to the dome. The upper (main vault) level housed the ion exchangers (IX) used for moderator cleaning, while the lower (resin disposal) level was used to store spent columns. The lower vault has been cleaned of debris, decontaminated and coated with a fixative paint. The upper vault was cleaned of debris and swept clean. Access to the upper vault is through shielding blocks and access to the lower vault is through two concrete plugs.

Location: The unit is located on the northeast side of the 309 Building containment dome.

Process Description: Prior to deactivation, the unit was used to remove contaminants from the heavy water and shield cooling systems.

Related Sites/ Structures: The 309 Plutonium Recycle Test Reactor (PRTR) Building is the only structure associated with the vault.

Waste Type: Chemicals

Waste Description: Following deactivation activities, residual radiological contamination and chemical contamination from the ion exchange resin may be present on surfaces in the vault. Contaminants of concern are cesium-137 and strontium-90. The rainwater (in the lower vault) and ion exchange columns were removed in 1995.

Code: 309-WS-2 **Classification:** Accepted

Names: 309-WS-2; Ion Exchange Vault; PRTR Rupture Loop; RLAIIX; Rupture Loop Annex Ion Exchange Loop Vault; Rupture Loop Ion Exchange Pit **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1969

Description: The 309-WS-2 Ion Exchange Vault (RLAIIX) is an underground, reinforced concrete structure. The unit is divided into five stalls. Four stalls held horizontally configured ion exchange columns, while the fifth stall is covered by a steel plate. A drain in the fifth bay discharged to a sump in Room 20 of the 309 Building. A rain cover has been installed over the top of the vault to prevent water from entering the vault.

Location: The unit is located off of the northwest side of the 309 Containment Dome.

Process Description: The ion exchange columns were used to remove contaminants and fission fragments from the light water coolant.

Related Sites/Structures: The Fuel Element Rupture Test Facility, the Rupture Loop Annex (also known as Room 20), and the 309 Plutonium Recycle Test Reactor Building are associated with the unit.

Waste Type: Equipment

Waste Description: Stabilized radiological contamination is present on vault surfaces. Contaminants of concern are transuranics, cesium-137 and cobalt-60. Prior to stabilization, survey reports indicate radiological contamination levels were as high as 70,000 disintegrations per minute per square centimeter beta-gamma and 28,000 disintegrations per minute per square centimeter alpha and with contact dose rates up to 2.5 rem per hour. After cleanout and stabilization, contamination levels were less than 1,000 disintegrations per minute per square centimeter beta-gamma, less than background (3 counts per minute) alpha, and a dose rate of less than 0.5 millirem per hour.

Code: 309-WS-3 **Classification:** Accepted

Names: 309-WS-3; 309 Brine Tank **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1960

Status: Inactive **End Date:** 1/1/1969

Description: The unit has been backfilled, and grass has been planted above the tank. The Brine Tank is a below grade, rectangular concrete structure with two chambers. Access/loading ports were installed on the top of the tank. Inside the tank, four perforated transite pipes ran the length of the main chamber. The pipes were suspended in a gravel filter bed and covered by a layer of sand. The second chamber acted as a holding tank.

Location: The unit is located below grade, off the southwest corner of the 309 Building.

Process Description: The unit has been backfilled and is inactive. During use the container held salt that was slurried and pumped through plastic pipes to three brine tanks located in the basement of 309 Building. These tanks supplied process water used to cool several small heat exchangers for the reactor.

Related Sites/Structures: Structures associated with this unit include the brine tanks in the 309 Building basement, the reactor heat exchange systems, and the liquid transfer lines.

Waste Type: Chemicals

Waste Description: The unit stored brine salt to be used by the process water/brine tanks within the basement of the 309 Building.

Related Sites/ Structures: Structures associated with the tank include 311-TK-40, the 303-F Building, the Pipe Trench, the 300 Area Waste Acid Treatment System equipment in the Uranium Recovery Room of the 313 Building, and the 340 Facility.

Waste Type: Chemicals

Waste Description: The unit received waste solutions consisting of neutralized liquid from the nonrecoverable uranium stream and filtrate from processing of the uranium-bearing waste stream. The tank was used to decant liquid waste.

Closure Info: The site has been clean closed under the 300 Area WATS Partial Closure in 2001. It is covered under a RCRA Part A Permit Application, and the closure plan was filed with Ecology in 1990. A Decontamination and Decommissioning Plan has been issued for Phase III closure of the 300 Area Waste Acid Treatment System which includes this tank. Tank 311-TK-50 will remain in place after closure. It has been decontaminated in-place to a 'clean debris surface' standard. The stainless steel jacket and insulation will be removed to allow full inspection. The insulation will be sampled based on visual observations (of worst case matrix). Residue samples from tank TK-50 along with samples of the liquid/sludge drained from the piping and the pumps and filters (which were located in the 303-F Building) were used to characterize the tank TK-50 subsystem. The liquids which contained 8% solids had a pH of 10.4. ICP lab results for both liquids and solids samples reported less the regulatory limit (see WAC 173-303-090, Toxicity Characteristic List) for all RCRA metals. Similarly, the sample of solids was determined by TCLP to have less than the regulatory limit for all RCRA metals. A dried sample of process residue from inside tank TK-50 was analyzed and shown to be non-corrosive, contained no beryllium and included less than the regulatory limit for RCRA metals. A sample of the filter element contained in the upstream in-line filter housing was removed and sent to the lab for analysis. This information will be used to determine disposal or applicable WATS Phase III waste. The constituents contained in the filter element are expected to have been indicative of the materials processed during the final WATS operations, which were all managed in tank TK-50. The sample of the filter element was determined by TCLP to have less than the regulatory limit for all RCRA metals, a pH of 7.42, no detectable beryllium and no detectable PCBs.

Code:	313 CENTRIFUGE	Classification:	Accepted
Names:	313 Centrifuge; 313 CENTRIFUGE; 300 Area WATS	Reclassification:	Closed Out (12/6/2001)
Type:	Process Unit/Plant	Start Date:	1/1/1985
Status:	Inactive	End Date:	1/1/1997
Description:	This site has been clean closed under the 300 Area Waste Acid Treatment System (WATS) Partial Closure. The centrifuge was removed in 1997 and disposed of as low level solid waste.		
Location:	The centrifuge was located in the Uranium Recovery Room in the southern end of the 313 Building in the 300 Area.		
Process Description:	The centrifuge was installed in 1985 to reduce the solids content of the final neutralized waste prior to trucking out to the 200 Areas for disposal. Neutralized acid waste was pumped from 313-TK-2 through the centrifuge to 313-TK-11 and then via piping in the pipe trench to the waste storage tanks 311-TK-40 and 311-TK-50 in the 311 Tank Farm. The centrifuge solids were drummed and sent to 303-K for storage prior to burial as low-level solid waste. As needed, the stored waste solutions in Tanks 40 and 50 were recycled through in-line filters in the 303-F Building and back via the pipe trench to the Uranium Recovery Room in the 313 Building for additional solids removal. The 313 Centrifuge and the 313 Filter Press were both used during such recycle activities.		

Related Sites/ Structures: Structures associated with the unit include transfer lines, 313-TK-2, 313-TK-11, the 313 Filter

until pumped from the 313 Building to a 15,100 liter waste storage loadout tank (TK 40) in the 311 Tank Farm via piping in the pipe trench. The filter press was periodically opened to scrape the sodium diuranate solids from the canvas filter cloth on each filter press frame. The solids were put into 114 liter (30 gallon) drums and transferred to the 303-K Building (see 303-K CWSF) for storage pending shipment off-site for uranium recycle.

Related Sites/ Structures: Structures associated with the unit include the U-Bearing Acid storage tanks (TK 3 and TK4), the Caustic Feed Tanks (TK5 and TK6), the Neutralization and Precipitation Tank (TK7), the Filter Press Feed Tank (TK8), and the Filtrate Storage Tanks (TK 9 and TK-10) in the Uranium Recovery Room of the 313 Building, the neutralized liquid effluent storage and load-out tank (TK 40) in the 311 Tank Farm, and the 303-K Contaminated Waste Storage Facility. The 300 Area Waste Acid Treatment System Pipe Trench and the Process Sewer supported the operation of the 313 Filter Press. Contaminated soil under this facility is site UPR-300-38.

Waste Type: Chemicals

Waste Description: The unit treated recoverable and nonrecoverable uranium-bearing waste acid by separating solid and liquid phases. Residual radiological and chemical contamination may be present.

Closure Info: This site has been clean closed.

In December 1996, a Decontamination and Inspection Plan was issued for Phase 1 closure of the 300 Area Waste Acid Treatment System. The equipment in the Uranium Recovery Room in the 313 Building including the 313 Filter Press was removed and buried as low level solid waste in the 200 Area in 1997. During the Phase 1 work, the contaminated areas of the floors in the Uranium Recovery Room were cleaned by scabbling. A few small floor cracks, some exposed acid brick, and one construction joint connected to the soil beneath the facility were identified prior to performing the decontamination and inspection outlined in the plan for Phase 1 closure activities. Ecology completed an inspection of the cleaned site in October 1997 and agreed that removal was done in accordance with this plan. A RCRA closure plan was issued in 1990 for the 300 Area Waste Acid Treatment System which included the Uranium Recovery Operations in the 313 Building, with revisions in 1996 and 1999.

Code: 313 URO	Classification: Accepted
Names: 313 URO; Uranium Recovery Operations; 313 Uranium Recovery Operations	Reclassification: Closed Out (2/12/1999)
Type: Process Unit/Plant	Start Date: 1/1/1954
Status: Inactive	End Date: 1/1/1997
Description: In 1997, the 313 Uranium Recovery Operation process equipment and piping were removed and the concrete surfaces scabbled and decontaminated. Past practice sub-floor contamination remains to be addressed as well as the potential for some minor RCRA contributions to subfloor contamination.	
Location: The unit is located along the north wall of the Uranium Recovery Room in the south end of the 313 Building.	
Release Description: See the WIDS site that describes the unplanned releases (WIDS Site UPR-300-38) associated with this area. All of the RCRA/CERCLA releases identified for the soils in this area will be addressed as part of UPR-300-38. Also see WIDS Site UPR-300-44 which involved a leak in a section of the process sewer line that was detected in January 1985. This leak in the process sewer line downstream from the 313 URO could have allowed uranium-bearing waste spills to have reached the ground beneath the process sewer. Also see WIDS Site UPR-300-45, a waste transfer line leak to the pipe trench between the 313 URO and the 303-F Building. Because the pipe trench bottom has holes in it, this site leaked to the soil column.	

Process Description: The 313 Uranium Recovery Operations (URO) processed uranium-bearing acid wastes from the fuel fabrication processes to recover uranium for recycle. U-bearing acid wastes were received from the 313 Fuels Operations until 1971. From 1961 until shutdown in 1987, U-bearing waste acid solutions were transferred from tank TK-24 in the 333 Building to two outside storage tanks on the west side of the 333 Building. The U-bearing waste acid was pumped from the outside storage tanks via the pipe trench to the 313 Building tanks TK-3 and TK-4 in the Uranium Recovery Room. The uranium was recovered by precipitation and filtration. U-bearing acid waste was metered into TK-7 where sodium hydroxide (from Tanks 5 and 6) was added to neutralize the acid and precipitate uranium as sodium diuranate. The basic slurry was collected in tank TK-8 and pumped through a plate and frame filter (see 313 FP) to remove the uranium. The filtrate was collected in tanks TK-9 and TK-10 for storage and pumping to the 311 Tank Farm via the Pipe Trench. Periodically, the uranium solids were scraped off the removable canvas filter cloth into 30-gallon drums. The drums were taken to the 303-K Facility for storage pending off-site shipment for uranium recycle.

Related Sites/Structures: Facilities associated with the uranium recovery operation include two U-bearing Acid Waste storage tanks located outside the west wall of the 333 Building (flushed and disconnected), U-Bearing Waste Acid Storage tank (333-TK-24) inside the 333 Building (flushed and disconnected), the 311 Tank Farm (sodium hydroxide supply tank and the neutralized acid waste storage tanks TK-40 and TK-50, both flushed and disconnected), the 303-F Building (pumps, in-line filters, piping removed), and the Pipe Trench that contains piping which connected the 313 URO to the other facilities and processes and to the Process Sewer. Tanks 313-TK-5 and 313-TK-6 contained sodium hydroxide used in the neutralization and precipitation process.

Waste Type: Equipment

Waste Description: The equipment contained uranium-bearing acid wastes from fuel fabrication processes that were used to treat and recover uranium. All contaminated equipment was removed from the facility.

Closure Info: Tanks TK-5, TK-9, TK-10, and the filter press (WIDS Site 313 FP) are shared equipment with the Waste Acid Treatment System (WATS). This equipment was removed under a Decontamination and Inspection Plan for Phase 1 WATS closure activities. Ecology inspected the 313 WATS area in October 1997 and concurred that the work was completed in accordance with the Phase 1 Plan. All other 313 URO equipment was also removed in 1997.

Code: 313-TK-2	Classification: Accepted
Names: 313-TK-2; 300 Area Waste Acid Treatment System; 313 Waste Acid Neutralization Tank	Reclassification: Closed Out (12/6/2001)
Type: Neutralization Tank	Start Date: 1/1/1975
Status: Inactive	End Date: 1/1/1997

Description: This site has been clean closed under the 300 Area WATS partial closure in 2001. The 313-TK-2 Neutralization Tank was removed in 1997. The tank was part of the 300 Area Waste Acid Treatment System. The vertical, stainless steel, cylindrical tank was located within a bermed area with other uranium recovery and acid treatment equipment.

Location: The unit was installed inside a bermed area near the southwest interior corner of the 313 Building.

Process Description: From 1973 to 1988, Tank 313-TK-2 was used to neutralize chemical waste acid solutions with sodium hydroxide (caustic). The waste acid originated in zircaloy etching tanks in the 333 Building fuels fabrication process which was periodically batched out to spent acid storage tanks in the 334-A Facility. The waste acid was pumped through transfer lines (300-219) in the Pipe Trench (300-224) to Tank 313-TK-2 for neutralization. The neutralized etch waste in 313-

TK-2 was pumped in piping via the Pipe Trench to Tank 311-TK-40 in the 311 Tank Farm.

Related Sites/ Structures: Structures associated with this site include 334-A Building Tank Farm, the 311 Tank Farm, Tanks 311-TK-40 and 311-TK-50, the 313 Uranium Recovery Room, the 313-Centrifuge, the 303-F Facility, and the Pipe Trench (300-224), all of which are components of the 300 Area Waste Acid Treatment System.

Waste Type: Chemicals

Waste Description: The unit treated uranium-bearing acid waste by neutralization. Prior to removal of the tank, a precipitate cake was present in the bottom of the tank.

Closure Info: This site has been clean closed. A RCRA closure plan was issued in 1990 for the 300 Area Waste Acid Treatment System which included the Uranium Recovery Operations in the 313 Building. Revision 1 of the RCRA closure plan was submitted to Ecology in March 1996. Tank 313-TK-2 was removed in 1997 in accordance with the Decontamination and Inspection Plan for Phase 1 closure of the 300 Area Waste Acid Treatment System. Ecology inspected the cleanup site in October 1997 and concurred that the work was done in accordance with the D&IP Phase 1 plan.

Code: 315 RSDF **Classification:** Accepted

Names: 315 RSDF; 315 Retired Sanitary Drain Field **Reclassification:** Rejected (1/27/1999)

Type: Drain/Tile Field **Start Date:** 1/1/1950

Status: Inactive **End Date:** 1/1/1978

Description: The 315 RSDF is an abandoned septic tank and drain field. The location shown by maps and drawings is not marked in the field. The site is covered with a surface of gravel and cobbles and no vegetation. There are manhole covers with protective posts located in close proximity to the abandoned septic tank/drain field.

Location: The site is located in the eastern portion of the 300 Area, northeast of the 315 Water Filter Plant.

Process Description: The 315 RSDF received sanitary waste that originated in the 315 Water Filter Plant.

Related Sites/ Structures: The site was associated with the 315 Water Filter Plant Sanitary Sewer.

Waste Type: Sanitary Sewage

Waste Description: The unit received unknown amounts of sanitary wastes from the 315 Water Filter Plant.

The authors of the 300-FF-2 Operable Unit Technical Baseline Report speculated that water treatment chemicals may have been discharged to the site, but no supporting documentation for this has been found. According to Jim Day, Dyncorp Water Utilities and Support Services, the only chemicals used at the facility were alum (nonhazardous) and chlorine gas.

Code: 323 TANK 1 **Classification:** Accepted

Names: 323 Tank 1; 321 Building Underground Waste Tanks; 321 Tank Farm #3 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:**

Description: The 323 Tank 1 is not visible or accessible. It is encased in concrete with a minimum of 1 foot thickness to an outside surface. The tank (waste site) is a carbon steel horizontal tank on the

west side of three other (identical) tanks encased in a large block of concrete. The top of the concrete block was used as the floor for the installation of the 323 Building (lower level) in 1958. The embedded tank originally had two 4 inch diameter and one 20 inch diameter pipe nozzle connections from the top of the tank through the concrete surface. None of these pipe nozzles are presently visible. 323 Tank 1 is the westernmost tank of the four tanks in the concrete encasement beneath the 323 Building. The 323 Building is posted "Authorized Personnel Only." The roll-up door on the east side of the building is posted "Radioactive Material Area, Entry Requirements: Radiological Worker 1 Training (If Unescorted)" and "Caution, Overhead Areas Are Not Routinely Surveyed. Contact Radiological Control Prior To Entry. The 323 Building lower level is crowded with mechanical and thermal test equipment. Process cooling water drain trenches in the concrete floor drain to a sump which discharges to the area process sewer.

Location:	The site lies beneath the 323 Building, in the west central portion of the 300 Area.
Release Description:	According to BHI-00012, contamination in the soil surrounding the four tanks is possible. According to WHC-MR-0388, the soil around and beneath the four tanks and the tanks themselves are very contaminated with mixed wastes. Analyses of liquid and sludge samples from Tank 4 in 1987 reported uranium and aluminum in significant quantities. These contaminants would have been introduced during the period the tanks were used to support the 321 Building chemical process development operations prior to 1967. The source of reports that thorium was associated with the waste in the underground waste tanks may have been with reference to the disposal of lab waste solutions from the 3706 Building. In 1944, the "hot" sinks in the 321 Building laboratories were connected to the underground tanks to eliminate sources of fission activity and product contamination of the 300 Area pond. At the same time, it was planned to dispose of active waste from the 3706 laboratories by collecting the wastes in individual containers and emptying them into the "hot" sinks in the 321 Building. Thorium was used during process development tests in the 3706 Building laboratories. According to operating personnel contacted, thorium was not used in the 321 Building process development tests.
Process Description:	The carbon steel tank received neutralized uranium-bearing process waste and/or basic aluminum cladding contaminated waste solutions from the 321 Building, primarily from cold and hot pilot tests for the bismuth phosphate chemical separations process from 1944 to about 1946. Some neutralized uranium-bearing waste solutions were received from the 321 Building Tank Farm during the pilot plant tests for the REDOX process. Lesser quantities of process wastes containing fission products, uranium, plutonium, and laboratory chemicals were routed to the tank from the "hot sinks" in the 321 Building laboratories from 1944 to about 1954 during the development of the Bismuth Phosphate, Redox, Uranium Metal Recovery, PUREX, RECUPLEX, and Thorex processes and from lab scale tests on medical isotope extraction processes. Beginning in late 1944, "hot" wastes from the 3706 Building laboratories were carried to the 321 Building for disposal via the "hot sinks" to prevent contamination of the 300 Area Ponds.
Related Sites/ Structures:	The tank is associated with three other identical tanks in the same concrete encasement, the 323 Building (formerly the 321-A Building), the 321 Building, and the 3706 Building labs by way of the hot sink drains in the 321 Building labs.
Waste Type:	Process Effluent
Waste Description:	The tank received neutralized uranium-contaminated water and/or basic aluminum cladding waste solutions from reprocessing research and development activities in the 321 Building and the 3706 Building (via the hot sink drains in the 321 Building laboratories), including those related to bismuth phosphate chemical separations, REDOX, Uranium Metal Recovery, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. The tank was emptied in 1952 or 1953.

Code:	323 TANK 2	Classification:	Accepted
Names:	323 Tank 2; 321 Building Underground Waste Tanks; 321 Tank Farm #3	Reclassification:	None
Type:	Storage Tank	Start Date:	1/1/1944
Status:	Inactive	End Date:	
Description:	<p>The 323 Tank 2 is not visible or accessible. It is encased in concrete with a minimum of 1-foot thickness to an outside surface. The tank (waste site) is a carbon steel horizontal tank, one of four identical tanks encased in a large block of concrete. The top of the concrete block was used as the floor for the installation of the 323 Building (lower level) in 1958. The embedded tank originally had two 4-inch diameter and one 20-inch diameter pipe nozzle connections from the top of the tank through the concrete surface. None of these pipe nozzles are presently visible. 323 Tank 2 is the second tank from the west side of the concrete encasement beneath the 323 Building. The 323 Building is posted "Authorized Personnel Only." The roll-up door on the east side of the building is posted "Radioactive Material Area, Entry Requirements: Radiological Worker 1 Training (If Unescorted)" and "Caution, Overhead Areas Are Not Routinely Surveyed. Contact Radiological Control Prior To Entry. The 323 Building lower level is crowded with mechanical and thermal test equipment. Process cooling water drain trenches in the concrete floor drain to a sump which discharges to the area process sewer.</p>		
Location:	<p>The site lies below the 323 Building, in the western portion of the 300 Area.</p>		
Release Description:	<p>According to BHI-00012, contamination in the soil surrounding the four tanks is possible. According to WHC-MR-0388, the soil around and beneath the four tanks and the tanks themselves are very contaminated with mixed wastes. The source of reports that thorium was associated with the waste in the underground waste tanks may have been with reference to the disposal of lab waste solutions from the 3706 Building. In 1944, the "hot" sinks in the 321 Building laboratories were connected to the underground tanks to eliminate sources of fission activity and product contamination of the 300 Area pond. At the same time, it was planned to dispose of active waste from the 3706 laboratories by collecting the wastes in individual containers and emptying them into the "hot" sinks in the 321 Building. Thorium was used during process development tests in the 3706 Building laboratories. According to operating personnel contacted, thorium was not used in the 321 Building process development tests.</p>		
Process Description:	<p>The carbon steel tank received neutralized uranium-bearing process waste and/or basic aluminum cladding contaminated waste solutions from the 321 Building, primarily from pilot tests for the bismuth phosphate chemical separations process from 1944 to about 1946. Some neutralized uranium-bearing waste solutions were received from the 321 Building Tank Farm during the pilot plant tests for the REDOX process. Lesser quantities of process wastes containing fission products, uranium, plutonium, and laboratory chemicals were routed to the tank from the "hot sinks" in the 321 Building laboratories from 1944 to about 1954 during the development of the Bismuth Phosphate, Redox, Uranium Metal Recovery, PUREX, RECUPLEX, and Thorex processes and from lab scale tests on medical isotope extraction processes. Beginning in late 1944, "hot" wastes from the 3706 Building laboratories were carried to the 321 Building for disposal via the "hot sinks" to prevent contamination of the 300 Area Ponds.</p>		
Related Sites/ Structures:	<p>The tank is associated with the 323 Building, the 321 Building, and the 3706 Building by way of the 321 Building hot sink drains.</p>		
Waste Type:	Process Effluent		
Waste Description:	<p>The tank received neutralized uranium-contaminated water and/or basic aluminum cladding waste solutions from reprocessing research and development activities in the 321 Building and</p>		

the 3706 Building (via the hot sink drains in the 321 Building laboratories), including those related to bismuth phosphate chemical separations, REDOX, Uranium Metal Recovery, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. The tank was emptied in 1952 or 1953.

Code: 323 TANK 3	Classification: Accepted
Names: 323 Tank 3; 321 Building Underground Waste Tanks; 321 Tank Farm #3	Reclassification: None
Type: Storage Tank	Start Date: 1/1/1944
Status: Inactive	End Date:

Description: The 323 Tank 3 is not visible or accessible. It is encased in concrete with a minimum of 1-foot thickness to an outside surface. The tank (waste site) is a carbon steel horizontal tank, one of four identical tanks encased in a large block of concrete. The top of the concrete block was used as the floor for the installation of the 323 Building (lower level) in 1958. The embedded tank originally had two 4-inch diameter and one 20-inch diameter pipe nozzle connections from the top of the tank through the concrete surface. None of these pipe nozzles are presently visible. 323 Tank 3 is the third tank from the west side of the concrete encasement beneath the 323 Building. The 323 Building is posted "Authorized Personnel Only." The roll-up door on the east side of the building is posted "Radioactive Material Area, Entry Requirements: Radiological Worker 1 Training (If Unescorted)" and "Caution, Overhead Areas Are Not Routinely Surveyed. Contact Radiological Control Prior To Entry. The 323 Building lower level is crowded with mechanical and thermal test equipment. Process cooling water drain trenches in the concrete floor drain to a sump which discharges to the area process sewer.

Location: The site lies beneath the 323 Building, in the western portion of the 300 Area.

Release Description: According to BHI-00012, contamination in the soil surrounding the four tanks is possible. According to WHC-MR-0388, the soil around and beneath the four tanks and the tanks themselves are very contaminated with mixed wastes. The source of reports that thorium was associated with the waste in the underground waste tanks may have been with reference to the disposal of lab waste solutions from the 3706 Building. In 1944, the "hot" sinks in the 321 Building laboratories were connected to the underground tanks to eliminate sources of fission activity and product contamination of the 300 Area pond. At the same time, it was planned to dispose of active waste from the 3706 laboratories by collecting the wastes in individual containers and emptying them into the "hot" sinks in the 321 Building. Thorium was used during process development tests in the 3706 Building laboratories. According to operating personnel contacted, thorium was not used in the 321 Building process development tests.

Process Description: The carbon steel tank received neutralized uranium-bearing process waste and/or basic aluminum cladding contaminated waste solutions from the 321 Building, primarily from pilot tests for the bismuth phosphate chemical separations process from 1944 to about 1946. Some neutralized uranium-bearing waste solutions were received from the 321 Building Tank Farm during the pilot plant tests for the REDOX process. Lesser quantities of process wastes containing fission products, uranium, plutonium, and laboratory chemicals were routed to the tank from the "hot sinks" in the 321 Building laboratories from 1944 to about 1954 during the development of the Bismuth Phosphate, Redox, Uranium Metal Recovery, PUREX, RECUPLEX, and Thorex processes and from lab scale tests on medical isotope extraction processes. Beginning in late 1944, "hot" wastes from the 3706 Building laboratories were carried to the 321 Building for disposal via the "hot sinks" to prevent contamination of the 300 Area Ponds.

Related Sites/ Structures: The tank is associated with the 323 Building, the 321 Building, and the 3706 Building by way

Structures: of the 321 Building hot sink drains.

Waste Type: Process Effluent

Waste Description: The tank received neutralized uranium-contaminated water and/or basic aluminum cladding waste solutions from reprocessing research and development activities in the 321 Building and the 3706 Building (via the hot sink drains in the 321 Building laboratories), including those related to bismuth phosphate chemical separations, REDOX, Uranium Metal Recovery, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. The tank was emptied in 1952 or 1953.

Code: 323 TANK 4 **Classification:** Accepted

Names: 323 Tank 4; 321 Building Underground Waste Tanks; 321 Tank Farm #3 **Reclassification:** None

Type: Storage Tank **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1987

Description: The 323 Tank 4 is a horizontal, cylindrical, underground carbon steel tank. The tank has rounded ends. The concrete enclosure around the tank includes a drain trench below the length of the tank which empties into a concrete sump at the south end. The sump was used for tank leak detection. The tank is the easternmost tank in a series of four tanks that lie in a concrete enclosure beneath the 323 (321-A) Building. Pearson (1987) issued an inspection report which included a photo of the open access to the tank through the modified center manhole. The 323 Building is posted "Authorized Personnel Only." The roll-up door on the east side of the building is posted "Radioactive Material Area, Entry Requirements: Radiological Worker 1 Training (If Unescorted)" and "Caution, Overhead Areas Are Not Routinely Surveyed. Contact Radiological Control Prior To Entry."

Location: The underground tank is located beneath the 323 Building, in the western portion of the 300 Area.

Release Description: According to BHI-00012, contamination in the soil surrounding the four tanks is possible. According to WHC-MR-0388, the soil around and beneath the four tanks and the tanks themselves are very contaminated with mixed wastes.

Process Description: Between 1944 and 1945, the tank received neutralized uranium-bearing wastes from cold and hot bismuth phosphate pilot tests in the 321 building. Between 1945 and 1953, the tank received neutralized uranium-contaminated water and/or basic aluminum cladding waste solutions from reprocessing research and development activities in the 321 Building and the 3706 Building (via the hot sink drains in the 321 Building laboratories), including those related to bismuth phosphate chemical separations, REDOX, Uranium Metal Recovery, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. Between 1945 and 1953, the tank may have received uranium-contaminated water and acid solutions from reprocessing research and development activities in the 321 Building, including those related to bismuth phosphate chemical separations, REDOX, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. Between 1968 and 1987, the tank received waste from the 323 Building, including the hot cell drain, the cleanup box drain and overflow from the process water sump. The tank has not received waste since 1987.

Related Sites/Structures: The tank is associated with the 321 Building and the process sewer. It is also associated with the 323 hot cell, the cleanup box and the process water sump.

Waste Type: Process Effluent

Waste Description: Between 1945 and 1953, the tank received neutralized uranium-contaminated water and/or basic aluminum cladding waste solutions from reprocessing research and development

activities in the 321 Building and the 3706 Building (via the hot sink drains in the 321 Building laboratories), including those related to bismuth phosphate chemical separations, REDOX, Uranium Metal Recovery, PUREX, RECUPLEX, the Thorex program, and medical isotope extraction. The tank was emptied in 1952 or 1953. Between 1968 and 1987, the tank received waste from the 323 Building, including the hot cell drain, the cleanup box drain and overflow from the process water sump. The tank has not received waste since 1987. In 1987, the tank contained liquid and sludge. Significant uranium and aluminum was detected, but no thorium was detected in either the liquid or the sludge. The uranium and aluminum contamination would have entered the tank prior to 1967.

Code: 325 WTF **Classification:** Accepted

Names: 325 WTF; 325 Hazardous Waste Treatment Units; 325 Waste Treatment Facility **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1953

Status: Active **End Date:**

Description: The 325 Waste Treatment Facilities (WTF) consist of two sections. The first section, the shielded analytical laboratory, is located in Rooms 32, 200, 201, 201A, 202, and 203. The second section includes the hazardous waste treatment units, located in Rooms 520, 527A, and 528. All facilities are part of the 325 Building. The building is constructed of welded steel framework covered with fluted steel insulated panels. The first and second floors are steel deck, topped with concrete and vinyl. The roof is steel deck topped with tar and gravel.

Location: The 325 Waste Treatment Facilities are located in the 325 Building. The shielded analytical laboratory is located on the west side of the 325 Building. The hazardous waste treatment unit is located on the northeast side of the 325 Building.

Process Description: Mixed waste treatment in the shielded analytical laboratory includes the following processes: pH adjustment, ion exchange, evaporation, precipitation and solvent extraction, solids washing, phase separation, and solidification. The shielded analytical laboratory processes are conducted as small, bench-scale operations. Treatment processes conducted in the hazardous waste treatment units include: pH adjustment, ion exchange, carbon absorption, oxidation/reduction, evaporation, precipitation/filtration, phase separation, catalytic destruction, and solidification.

Related Sites/Structures: Structures associated with this unit include other 325 Laboratories, the 300 Area Process Sewer, 300 Area Radioactive Liquid Waste Sewer, the Physical and Chemical Treatment Test Facilities, the Thermal Treatment Test Facilities, and the Biological Treatment Test Facilities.

Waste Type: Chemicals

Waste Description: The waste treatment facilities treated radioactive mixed wastes generated in research and development activities. The 325 Waste Treatment Facility also served to test and evaluate the effectiveness of various waste treatment technologies.

Code: 331-C HWSA **Classification:** Accepted

Names: 331-C HWSA; 331-C Low Level Radioactive Storage Area; 331-C Hazardous Waste Storage Area **Reclassification:** Rejected (9/2/1998)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1972

Status: Inactive **End Date:** 1/1/1996

Description: The former 331-C HWSA is now a steel building and fenced laydown yard that is currently in use as a refrigeration maintenance shop, material storage area, laydown yard and radioactive

waste storage area. The 331-C building is divided into three sections. The southern portion of the 331-C building is currently empty. The mid section of the building is in use as a equipment and material storage area. The northern portion of the building is in use as a refrigeration maintenance shop. The maintenance shop contains a satellite accumulation area for the storage of used oil [less than 208 liters (55 gallons)]. On the east side of the building, a radioactive waste storage area was observed under the roofed area. In addition, several 208 liter (55 gallon) drums of propylene glycol was stored under the roofed area. The fenced laydown area contains equipment.

Location: The 331-C HWSA was located approximately 100 meters south of the 331 building inside 331-C, and in the storage yard on the east side of 331-C.

Release Description: No known spills or releases have been reported from this site.

Process Description: The 90-day storage pad was originally set up under RCRA for the management of hazardous waste generated from animal research in the 331 complex. In the late 1960's, 1500 dogs were exposed to either strontium-90 or radium-226. As the dogs died, their bones and tissues were tested for the movement and accumulation of isotopes. All bones and tissues were preserved in ethanol and saved for 30 years.

Related Sites/ Structures: The unit was related to the research and development activities in the 331 Complex.

Waste Type: Animal Waste

Waste Description: The site stored dog bones and tissues contaminated with strontium-90 and cesium-137 stored in 70% ethanol solution, nitric acid, formalin and regulated empty containers. Hardcopy waste disposal records, waste verification, waste inventory, packing slips, characterization summaries, offsite shipment, waste specification, land disposal notification and certification, waste manifest records are available for this site. (See hardcopy WIDS file). It appears that most of the waste disposed of onsite went to 218-W-4C and 218-W-5 Burial Grounds in the 200 West Area.

Waste Type: Misc. Trash and Debris

Waste Description:

Code: 332 SF	Classification: Accepted
Names: 332 SF; 332 Storage Facility; 332 Hazardous Waste Storage Area; 332 Interim Holding Facility; 332 Packaging Test Facility	Reclassification: Closed Out (4/21/1997)
Type: Storage	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1997

Description: The 332 Storage Facility was constructed as a less than 90 day storage facility. The building is a prefabricated, insulated metal structure erected on concrete footings. It is outfitted with explosion proof lighting, heating, and electrical outlets, as required for Uniform Building Code class H buildings, to permit the unrestricted storage of flammable and explosive materials. The floor is sloped toward an exterior wall sump fitted with a sump pump. Fireproof storage cabinets, a hood, and shelving were installed for dangerous waste storage. The building also includes a heater, fire alarm system, and alarm transmitter. The structure's outer dimensions are 6.1 meters (20 feet) by 6.1 meters (20 feet). A concrete slab extends 4.6 meters (15 feet) from the west side of the building. The slab is edged with a 15 centimeter (6 inch) curb to provide secondary containment and is surrounded by a 1.8 meter (6 foot) fence to prevent unauthorized access. The facility's storage design capacity was less than 6,800 liters (1,800 gallons) of

material.

Location: The building is located north of the 300 Area Sanitary Trenches (300-52) and east of 618-2.

Waste Type: Chemicals

Waste Description: The facility was used for the temporary storage (<90 day) of flammable and explosive materials.

Code: 333 ESHTSSA **Classification:** Accepted

Names: 333 ESHTSSA; 333 East Side Heat Treat Salt Storage Area **Reclassification:** Consolidated (2/12/1999)

Type: Storage **Start Date:** 1/1/1964

Status: Inactive **End Date:** 1/1/1987

Description: This waste site has been incorporated into the 618-1 Burial Ground waste site. The 333 ESHTSSA is an inactive storage area. The site included various locations inside the 333 fence where heat-treat salts were stored. It is now an open paved area near the southeast corner of the 333 Building. Several areas of the asphalt pavement have been painted over and posted fixed radiological contamination (WIDS Site UPR-300-17).

Location: The site includes waste stored in the fenced area east of the 333 Building in the northern part of the 300 Area. The heat-treat salts were stored on the paved area near the southeast corner of the building or in the adjacent area located over a portion of the 618-1 Burial Ground.

Process Description: The site was used to store containers of solidified heat-treat salt waste from the fuels fabrication facility.

Related Sites/ Structures: The site is associated with operations in the 333 Building. The site is also associated with the 618-1 Burial Ground since it is located adjacent to and possibly over the southwest corner of the Burial Ground.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: This area is no longer used for storing hazardous wastes. In the past, it stored containers of solidified waste heat-treat salts from the Fuels Fabrication Facility. The waste consisted of sodium chloride, potassium chloride, sodium nitrate, and potassium nitrate. Approximately, thirty to fifty 208-liter (55-gallon) drums accumulated each year.

The Site Was Consolidated With:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: 333 LHWSA **Classification:** Accepted

Names: 333 LHWSA; 333 Laydown Hazardous Waste Storage Area; 333 Laydown HWSA **Reclassification:** Consolidated (2/12/1999)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1971

Status: Inactive **End Date:**

Description: This waste site has been consolidated into the 618-1 Burial Ground waste site. The 333 LHWSA is a concrete and asphalt pad on the east side of the 333 Building. The unit is within the 333 Building fence, and a second locked fence surrounds the unit. The white conex box in this unit is the location of the present 90-day waste storage area. Currently this conex box is empty. The yellow boxes on the opposite side of the area contain low level radioactive waste.

Location: The unit is located east of the 333 Building, within the fence of the 333 Building. The 333

Building is in the northern part of the 300 Area.

Process Description: The area inside the fence was originally a material laydown area. Now this area contains wastes that are segregated into a 90-Day Storage Pad for hazardous wastes and a Radioactive Material Area for low level radioactive waste storage.

Related Sites/ Structures: The unit is related to the 333 Building Operations. This site is located over the 618-1 Burial Ground.

Waste Type: Misc. Trash and Debris

Waste Description: The fixed contamination area, i.e., concrete and asphalt, that was the result of storing radioactive materials in the past will be addressed as part of 618-1 Burial Ground. The Burial Ground underlies the 333 LHWSA.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The area typically contains corrosive and toxic metal wastes.

The Site Was Consolidated With:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: 333 WSTF

Classification: Accepted

Names: 333 WSTF; 333 WSWOT; 333 West Side Tank Farm; 333 West Side Uranium Bearing Acid Tanks; 333 West Side Waste Oil Tank

Reclassification: Interim Closed Out

Type: Storage Tank

Start Date: 1/1/1972

Status: Inactive

End Date:

Description: The site is an above grade tank farm containing three cylindrical tanks that stand upright within a concrete containment basin. The containment basin is attached to the outside wall of the 333 Building. One of the tanks is labeled "Non Contaminated Waste Oil - Flashpoint 455 degrees F." The two other tanks are labeled "Uranium bearing acid." The concrete containment basin is 6 meters (19.7 feet) by 4.2 meters (13.8 feet) with a depth of 0.4 meters (1.3 feet). Asphalt pavement surrounds the basin and the west side of the building. On this pavement there is a sign posting fixed radioactive contamination.

Location: The tank farm is located on the west side of the 333 Building, in the northern part of the 300 Area.

Process Description: The Waste Oil Tank temporarily stored oil from the extrusion press sump prior to shipment off site. When in use the process accumulated between 1892 and 3785 liters per year (500 to 1000 gallons per year). The Uranium Bearing Acid tanks temporarily stored spent acid from the 333 Building uranium acid etch process tanks. The spent acid was pumped from these storage tanks to the Uranium Recovery Operations (WIDS Site 313 URO) process in the 313 Building where the acid was treated for uranium recovery and recycling.

Related Sites/ Structures: The tanks are associated with operations in the 333 Building.

Waste Type: Oil

Waste Description: The Waste Oil Tank was used for storage of oil from the extrusion press sump. It was verified that the oil did not contain polychlorinated biphenyls and was not ignitable prior to removal. No known releases have been reported.

Waste Type: Chemicals
Waste Description: The Uranium Bearing Acid tanks stored spent acid containing uranium. The uranium was a recoverable asset for recycling.

Code: 333-TK-11 **Classification:** Accepted
Names: 333-TK-11; 333 Chromium Treatment Tank 2; 333 West Side Storage Tank for Uranium Bearing Acid **Reclassification:** Closed Out (12/6/2001)
Type: Storage Tank **Start Date:** 1/1/1961
Status: Inactive **End Date:** 1/1/1998

Description: This site has been clean closed under the 300 Area Waste Acid Treatment System (WATS) partial closure. 333-TK-11 was removed in 1998. It was a square uncovered metal tank. The unit was connected to the 300 Area Waste Treatment System by a polyvinyl chloride (PVC) drain line.

Location: The tank was located inside the 333 Building, west of the Pipe Trench.

Process Description: From 1983 to 1987, Tank 11 was used to treat waste acid by reducing chromium (VI) to chromium (III). The waste acid was drained to the 334-A Facility Storage Tanks.

Related Sites/Structures: The unit was related to the 333 fuel fabrication activities and the 300 Area Waste Acid Treatment System.

Waste Type: Chemicals
Waste Description: The tank was used to store spent etch acids (nitric and sulfuric acid with uranium in solution). The unit was also used to treat metal-bearing waste acids by reducing chromium (VI) to chromium (III).

Closure Info: This site has been clean closed. Tank 333-TK-11 was removed in 1998 pursuant to the Phase II Decontamination and Inspection Plan. Ecology inspected the cleanup site in August 1998. Ecology concurred that the work was done to the plan.

Code: 333-TK-7 **Classification:** Accepted
Names: 333-TK-7; 333 Chromium Treatment Tank 1; 333 West Side Storage Tank for Uranium Bearing Acid **Reclassification:** Closed Out (12/6/2001)
Type: Storage Tank **Start Date:** 1/1/1961
Status: Inactive **End Date:** 1/1/1998

Description: This site has been closed out. Tank 333-TK-7 was removed in 1998. Tank 333-TK-7 was a square, uncovered metal tank. The unit was connected to the 300 Area Waste Acid Treatment System by a polyvinyl chloride drain line. The tank was last used in 1987.

Location: The tank was removed in 1998; it was located inside the 333 Building, west of the pipe trench.

Process Description: From 1983 to 1987 the tank was used to treat waste acid by reducing chromium (VI) to chromium (III). The waste acid was drained via piping in the Pipe Trench to the tanks 334-TK-B and 334-TK-C in the 334-A tank pit.

Related Sites/Structures: The unit was related to tank 311-TK-11, the 333 fuel fabrication facility, the Pipe Trench, the 334-A Building and Tank Farm, and the 300 Area Waste Acid Treatment System (WATS).

Waste Type: Chemicals
Waste Description: The tank was used to store spent etch acids (nitric and sulfuric acid with uranium in solution). The unit was later used to reduce chromium (VI) to chromium (III) in metal-bearing waste acids.
Closure Info: This site was clean closed under the 300 Area WATS partial closure in 2001. The tank was removed pursuant to Phase II of the Decontamination and Inspection Plan. The tank removal site was inspected by Ecology in August, 1998 and written concurrence of the work done was received in September 1998.

Code: 334 TFWAST **Classification:** Accepted
Names: 334 TFWAST; Tank 4; 334 Tank Farm Waste Acid Storage Tank **Reclassification:** Closed Out (12/6/2001)
Type: Storage Tank **Start Date:** 1/1/1971
Status: Inactive **End Date:** 1/1/1988

Description: This site has been clean closed. The tank was taken out of service in 1986 and removed in 1988. The tank was a 27,710 liter (6000 gallon) Koroseal-lined mild steel tank. It was a vertical cylindrical tank installed on the upper level of the 334 Tank Farm structure, about 8 feet (2.4 meters) above ground level.

Location: The tank was the north elevated tank in the 334 Tank Farm, located on the east side of the 333 Building.

Release Description: See UO-86-01. At about 2200 hours on January 2, 1986, acid was found leaking from the waste acid storage tank (#4) located in the 334 Tank Farm. The leak drained to the process sewer which discharged to the 300 Area process trenches. The waste acid was pumped to another tank and at about 0100 hours on January 3, 1986, 60 gallons of 50 percent caustic was added to the process sewer. The pH meter strip chart for the 333 Building waste water indicated that an unusually low pH first occurred at about 1800 hours and by 0200 hours the pH readings in the waste water stream was back to normal. The pH did not get low enough during the event to trip the pH meter alarm. No acid spilled to the ground; it was all contained within the bermed concrete pad beneath the 334 Tank Farm which drained to the process sewer. Inspection of the tank indicated that the waste acid had corroded through the (Koroseal lined, mild steel) tank in several places about 10 percent down from the top of the tank. The operating staff reported that to the best of their knowledge since Tank 4 was placed in service about ten years earlier, it had never been filled the level at which failure occurred until this event

Process Description: Tank 334 TFWAST (TK-4) in the 334 Tank Farm was first used in 1973 to store the waste acid for the 300 Area Waste Acid Treatment System while waste acid storage tanks TK-B and TK-C were installed in the 334-A Building. After that time, TK-4 was used for emergency storage during periods when the acid neutralization equipment in the 313 Building was not in operation. When tank TK-4 was filled in January 1986, a leak developed near the top of the tank. The tank was drained at that time and removed in 1988.

Related Sites/Structures: The tank was related to the 334 Tank Farm, the 333 N Fuels zircaloy fuel etching process, the 300 Area Waste Acid Treatment System, and the Process Sewer.

Waste Type: Chemicals
Waste Description: The unit was intermittently used to store waste acids containing nonrecoverable uranium from the fuel fabrication process.
Closure Info: This site has been clean closed under the 300 Area Waste Acid Treatment System (WATS) partial closure. The 334 Tank Farm Waste Acid Storage Tank 4 was removed in 1988. The superstructure which held tank TK-4 will be decontaminated as required during the Phase 3

closure activities for the 300 Area Waste Acid Treatment System. The RCRA Closure Plan for the 300 Area Waste Acid Treatment System was submitted to Ecology in June 1990; Revision 1 of the closure plan was submitted in March 1996, and Revision 2 in July 1999.

Code:	334-A-TK-B	Classification:	Accepted
Names:	334-A-TK-B; 334-A Waste Acid Storage Tank 1	Reclassification:	Closed Out (12/6/2001)
Type:	Storage Tank	Start Date:	1/1/1975
Status:	Inactive	End Date:	1/1/1998
Description:	This site has been clean closed. The tank was removed in 1998. The horizontal 7570 liter (2000 gallon) tank was a high-density polyethylene tank resting on a steel saddle. The tank was one of three tanks in a 3 meter (10 foot) deep concrete pit below the 334-A Building. A cover has been installed over the pit and the cover sealed.		
Location:	The unit was located in the 334-A Tank Pit, east of the 333 Building.		
Process Description:	The tank stored spent etch acid from the 333 Building fuel fabrication process. Spent acid was drained from the 333 Building etch tanks (8 tanks with a total capacity of 7551 liters (1995 gallons) to Tank 334-A-TK-B via a 10.1 cm (4-inch) diameter PVC line (see 300-219) in the Pipe Trench (see 300-224). The waste acid was stored until treated by the 300 Area Waste Acid Treatment System. The waste acid was pumped via a 5.1 cm. (2-inch) diameter PVC line in the Pipe Trench to the 313-TK-2 neutralization tank in 313 Building. Spills from the tank into the concrete pit were contained and recovered. A spill alarm in the pit alerted operating personnel. No record was found of any contamination released outside the 334-A boundaries.		
Related Sites/Structures:	The unit is associated with the 334-A-TK-C, the 334-A Tank Pit, the 334-A Building, the Pipe Trench, the 333 Building etch tanks, the 300 Area Waste Acid Treatment System (WATS), and 300-21.		
Waste Type:	Chemicals		
Waste Description:	The unit was removed in 1998. It received waste acids from the fuel fabrication process. The waste contained nonrecoverable uranium, hydrofluoric, nitric, sulfuric, and chromic acids, and various metals.		
Closure Info:	This site was clean closed under the 300 Area WATS partial closure. Tank TK-B was removed in 1998 as part of the cleanup activities pursuant to the Decontamination and Inspection Plan issued for Closure Phase 2. The cleaned site was inspected by Ecology on August 25, 1998. Ecology verified that the Phase 2 work was performed in accordance with Ecology's "Clean Closure Guidance Document" method of a clean debris surface and later provided final approval of the Phase 2 closure.		

Code:	334-A-TK-C	Classification:	Accepted
Names:	334-A-TK-C; 334-A Waste Acid Storage Tank 2	Reclassification:	Closed Out (12/6/2001)
Type:	Storage Tank	Start Date:	1/1/1975
Status:	Inactive	End Date:	1/1/1998
Description:	This site has been clean closed. The tank was removed in 1998. The horizontal 7570 liter (2000 gallon) tank was a high-density polyethylene tank resting on a steel saddle. The tank was one of three tanks in a 3 meter (10 foot) deep concrete pit below the 334-A Building. A cover has been installed over the pit and the cover sealed.		
Location:	The unit was located in the 334-A Tank Pit, east of the 333 Building.		
Process	The tank stored spent etch acid from the 333 Building fuel fabrication process. Spent acid was		

Description: drained from the 333 Building etch tanks (8 tanks with a total capacity of 7551 liters (1995 gallons) to Tank 334-A-TK-C via a 10.1 cm (4-inch) diameter PVC line (see 300-219) in the Pipe Trench (see 300-224). The waste acid was stored until treated by the 300 Area Waste Acid Treatment System. The waste acid was pumped via a 5.1 cm. (2-inch) diameter PVC line in the Pipe Trench to the 313-TK-2 neutralization tank in 313 Building. Spills from the tank into the concrete pit were contained and recovered. A spill alarm in the pit alerted operating personnel. No record was found of any contamination released outside the 334-A boundaries.

Related Sites/ Structures: The unit is associated with the 334-A-TK-B, the 334-A Tank Pit, the 334-A Building, the Pipe Trench, the 333 Building etch tanks, and the 300 Area Waste Acid Treatment System.

Waste Type: Chemicals

Waste Description: The unit was removed in 1998. It received waste acids from the fuel fabrication process. The waste contained nonrecoverable uranium, hydrofluoric, nitric, sulfuric, and chromic acids in solution bearing metals in solution.

Closure Info: Tank TK-C was removed in 1998 as part of the cleanup activities pursuant to the Decontamination and Inspection Plan issued for Closure Phase 2. The cleaned site was inspected by Ecology on August 25, 1998. Ecology verified that the Phase 2 work was performed in accordance with Ecology's "Clean Closure Guidance Document" method of a clean debris surface and provided tentative approval of the Phase 2 closure. The site was clean closed as part of the 300 Area WATS partial closure in December 2001.

Code: 335 & 336 RSDF	Classification: Accepted
Names: 335 & 336 RSDF; 335 & 336 Retired Sanitary Drain Field	Reclassification: Rejected (2/12/1999)
Type: Drain/Tile Field	Start Date: 1/1/1973
Status: Inactive	End Date: 1/1/1978

Description: The 335 and 336 RSDF is a below grade waste site consisting of a septic tank and drainfield that have been abandoned in place. Only a riser from the septic tank is visible in the field. There is no evidence of a drainfield. The riser is a concrete pipe with an inner diameter of 20.5 centimeters (8.1 inches) covered by a metal grate. The riser is surrounded by metal posts and its top is approximately 18 centimeters (7.1 inches) above grade. The riser is 5.4 meters (17.7 feet) west of the manhole shown on M-3904, sheet 14, that is currently connected to the sanitary sewer. The area around the riser is sandy with some gravel and cobbles. Immediately south of the septic tank is a chained off area that is surrounded by metal posts and plastic chain. Inside the fenced off area are pipes, tanks, old equipment, and concrete and asphalt debris. There are no signs labeling the site or the adjacent chained off area.

Location: The site is located south of the southwest corner of the 335 Building.

Process Description: The unit disposed of sanitary waste generated in the 335 and 336 Buildings.

Related Sites/ Structures: The site was associated with the 335 and 336 Sanitary Waste Systems. The 335 and 336 Buildings were constructed to house experimental equipment for the study of the properties of sodium and the behavior of mechanical components to be operated in a sodium environment in support of FFTF development (through the late 1970's).

Waste Type: Sanitary Sewage

Waste Description: The unit received unknown amounts of sanitary wastes from the 335 and 336 Buildings.

Code: 340 CHWSA **Classification:** Accepted
Names: 340 CHWSA; 340 Complex Hazardous Waste Storage Area; 340 Complex HWSA **Reclassification:** Rejected (1/15/1999)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:**
Description: According to 340 Complex personnel, hazardous waste was staged for less-than-90-day storage at various locations throughout the 340 Complex yard. This includes a small concrete pad to the northeast of 340B, and the asphalt pad to the west of the 340 Building.
Location: Waste was staged at various locations inside the 340 Complex Yard.
Release Description: Per Bob Haggard, WMH Environmental Compliance Officer, there is no evidence of an actual or potential for a hazardous substance release.
Process Description: Hazardous waste was stored for less than 90 days at various areas throughout the 340 Complex yard.
Related Sites/ Structures: This storage area staged wastes related to 340 Complex operations.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: This area is no longer used to stage hazardous waste.

Code: 350 HWSA **Classification:** Accepted
Names: 350 HWSA; 350-D Hazardous Waste Staging Area; 350 Building Hazardous Waste Storage Area **Reclassification:** Rejected (2/24/1999)
Type: Storage Pad (<90 day) **Start Date:** 1/1/1982
Status: Active **End Date:**
Description: The 350 Hazardous Waste Staging Area is inside the 350-D Building and on an asphalt pad in front of the building.
Location: The staging area is located in the northeast corner of the fenced 350 Compound.
Process Description: The staging area is used to temporarily store hazardous wastes. Combustible liquids and PCB containing waste are stored inside the building. Used oil is stored in a 300-gallon (1140-liter) tank behind the 350-D Building. Other waste is stored on the pad in front of the building.
Related Sites/ Structures: The unit is associated with the 350 Plant and Operations Facility.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Typically, the area stores corrosive chemicals, used oils and PCB-contaminated oils. Oil containing PCBs from old ballasts is stored inside the 350-D building along with combustible liquids.

Code: 3712 USSA **Classification:** Accepted
Names: 3712 USSA; 3712 Building Uranium Scrap **Reclassification:** Interim Closed Out (8/16/2011)

Storage Area; 3712 Fuels Warehouse; 3712
Uranium Scrap Storage Area

Type: Storage **Start Date:** 1/1/1961

Status: Active **End Date:**

Description: This site has been remediated. The 3712 USSA was an active uranium metal storage unit. The building was a steel frame structure with metal siding and a metal roof. The unit had a concrete floor and foundation. There were "Radiologically Controlled Area" signs posted along the east side of the 3712 Building, just east of the railroad tracks. The "Radiologically Controlled Area" signs continue around the north side of the building. The building had four roll-up doors - one each on the north and south sides of the building and two on the west side. Signs next to the north roll-up door read "Caution, Fissile Materials," "Caution, Radiation Area And Contamination Area, Entry Requirements: Personnel Dosimeter (TLD), Radiological Work Permit (RWP)," and "No Uranium Enriched Above 1.25 Nor Any Other Fissile Material Allowed In This Facility." The posting by the east walk-in door was the same as the north roll-up door except the "Caution Radiation Area And Contamination Area" sign was replaced by a "Radiological Buffer Area" sign. The posting by the south roll-up door was similar to the north roll-up door, with some additions - "Stop! No Visitors, No Entry Without Management And ACES Approval" and "Contact HPT Prior To Entry 376-3311." There were no "Caution, Radiation Area And Contamination Area" posting by the south door. The "No Uranium Enriched Above 1.25" sign was appended by the phrase "Without Prior Approval Of Facility Supervisor." There were large concrete blocks outside the north roll-up door on the west side of 3712. The blocks were placed far enough away from the building to allow some access to this door. Posting by this door was not reviewed during the November 24, 1998, walkdown. A pair of metal pipes exit the east side of 3712 near the southeast corner and enter a square concrete structure (see photo). There is a process sewer manhole northeast of the northeast corner of the building. Drawing M-3904, sheet 2, revision 24, shows two underground process sewer lines running under the 3712 Building where they converge and continue towards the northeast.

Location: The unit was located on the east side of the 313 Building, south of 3720 and west of 306W.

Process Description: The building had been used to store uranium fuel elements, fuel fabrication components, and uranium scraps from the 313 and 333 fuel fabrication efforts.

Related Sites/ Structures: The unit is associated with the fuel manufacturing that occurred in the 313 and 333 Buildings.

Waste Type: Chemicals

Waste Description: The unit is used to store uranium fuel elements, components for fuel fabrication, concrete billets of ignitable uranium chips and fines, and uranium scrap. Contamination resulting from the 1979 and 1985 fires may be present in or on building surfaces.

Closure Info: Demolition of the above-grade 3712 Building structure was completed in January 2006 and remedial action of the 3712 USSA waste site, including the 3712 Building slab and foundation, was performed between June 3 and 15, 2010. The waste site was excavated to a depth ranging from approximately 1.0 m (3.3 ft) to 1.5 m (4.9 ft) below ground surface, resulting in approximately 999 bank cubic meters (1,307 bank cubic yards) or 2,167 metric tons (2,388 U.S. tons) of building slab and foundation debris and soil disposed at the Environmental Restoration Disposal Facility (ERDF) in the 200 Area of the Hanford Site. All material was direct loaded from the excavation; therefore, no waste staging piles were created. No overburden soil stockpiles are associated with the waste site. A post-excavation radiological survey for gamma and beta activity was conducted following the completion of remedial action to confirm that waste site excavation was complete. No elevated gamma activity was detected nor was elevated beta activity detected. A post-excavation civil survey for the excavation has been completed.

A geophysical investigation was not conducted at the 3712 USSA waste site because the 3712 Building concrete slab was in place at the start of the remediation activities.

Code: 3713 PSHWSA **Classification:** Accepted
Names: 3713 PSHWSA; 3713 Paint Shop Hazardous Waste Satellite Area **Reclassification:** Rejected (1/27/1999)
Type: Satellite Accumulation Area **Start Date:** 1/1/1984
Status: Inactive **End Date:** 1/1/1987
Description: Until 1987, the site was a hazardous waste satellite accumulation area. Today, the site is a concrete pad surrounded by a fiberglass and wood fence. There is a drain in the center of the pad. Items stored in this area include nonhazardous materials, such as ladders, hoses, and pipe. Currently, the 3713 Building is being used as a carpenter's shop.
Location: The site is outside the southeast door of the 3713 Building.
Process Description: The unit was used to temporarily store small quantities of hazardous waste.
Related Sites/Structures: The site was associated with the 3713 Paint Shop. The building is now the 3713 Carpentry Shop.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Hazardous wastes have not been accumulated at this facility since the paint shop was moved. The area contained small quantities of miscellaneous waste solutions. The waste was derived from paint shop operations.

Code: 3713 SSHWSA **Classification:** Accepted
Names: 3713 SSHWSA; 3713 Sign Shop Hazardous Waste Satellite Area **Reclassification:** Rejected (1/27/1999)
Type: Satellite Accumulation Area **Start Date:** 1/1/1984
Status: Inactive **End Date:** 1/1/1987
Description: Until 1987, the site was a hazardous waste satellite accumulation area. It is no longer in existence. No evidence of the satellite accumulation area is apparent.
Location: The staging area was located outside the north entrance of the 3713 Building.
Process Description: The staging area accumulated small quantities of nonsolvent waste from sign shop operations.
Related Sites/Structures: The unit was associated with the 3713 Sign shop. The 3713 Building is currently a carpenter's shop.
Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Hazardous wastes are no longer staged at this facility. The area accumulated miscellaneous small quantities of nonsolvent waste solutions from sign shop operations.

Code: 3718-F BS **Classification:** Accepted
Names: 3718-F BS; 3718-F Burn Shed **Reclassification:** Closed Out (8/1/1998)
Type: Process Pit **Start Date:** 1/1/1968
Status: Inactive **End Date:** 1/1/1998

- Description:** removed and all that remains is the concrete pad which it shared with other sites related to the 3718-F Alkali Metal Treatment and Storage Facility. The 3718-F Burn Shed was a 3.0-meter by 3.7-meter (10-foot by 12-foot) sheet metal enclosure with a 2.4 meter (8-foot) wide roll-up door. Small stirring ports and windows were placed on the north and west sides. To the east of the burn shed was a fume scrubber through which the gaseous emissions from the burning were processed. The burn shed and fume scrubber were connected by overhead ductwork. The burn shed and fume scrubber were built on a concrete pad. The pad was bermed on the north and south and sloped to the east. A channel on the east side routed any drainage to a floor drain which discharged to the process sewer.
- Location:** The unit was located in the 300 Area, east of the 324 Building. It shared a common fence with the 3717C, 335, 335A, and 336 Buildings. The burn shed was located on a concrete pad adjacent to the east side of the storage building (3718-F SF).
- Process Description:** When the facility was used, alkali metals were placed in burn pans, surrounded by fuel, and ignited with a torch inserted through a stirring port. The molten metals were stirred to allow for complete combustion. A water fog was then applied to the metals, completing the oxidation process. Effluents were neutralized and discharged to the process sewer.
- Related Sites/ Structures:** The unit is associated with the adjacent fume scrubber, the storage building (3718-F SF), and the treatment tanks (3718-F TT1 and 3718-F TT2).
- Waste Type:** Chemicals
- Waste Description:** Wastes treated at the unit included: sodium, lithium and sodium-potassium alloys. After burning, the remaining wastes would have consisted of alkali metal oxides and carbonates. Small quantities of reactive laboratory waste may also have been treated. All wastes have been removed.
- Closure Info:** 3718-F BS, 3718-F SF, 3718-F TT1 and 3718-F TT2 were addressed as a group. The information below documents information for the group of sites.

All structures associated with the 3718-F Alkali Metal Treatment Facility were removed during September 1996 and May 1998.

On February 24, 1998 it was agreed that DOE would perform a voluntary action to remove the drainage sump structure with from which the PCB contaminated sample was taken and to conduct soil sampling in the vicinity of the structure. Initial sampling was performed on March 17, 1998 to determine the levels of PCB's. Cleanup activities occurred between May 1, 1998 and May 6, 1998. During this time, three drain structures were removed. The drain to the process sewer at the northeast corner of the treatment pad was removed and the line connecting to the process sewer was plugged. The two drain sumps for the fume scrubber were removed as a unit because they were connected together with a metal brace. One drain sump was found to be open to soil at the bottom. The two structures were resting on an aluminum plate covered with a white encrustation (later determined to be corroded aluminum). All discolored soil was removed and drummed. Sampling of the drummed soil and the soil beneath the aluminum plate was performed.

Code: 3718-F SF	Classification: Accepted
Names: 3718-F SF; 3718-F Storage Facility; 3718-F Alkali Metal Treatment Facility	Reclassification: Closed Out (8/4/1998)
Type: Storage	Start Date: 1/1/1968
Status: Inactive	End Date: 1/1/1989
Description: The 3718-F Storage Facility consisted of a single-story building, an adjoining loading pad, and	

a concrete treatment pad. The storage building has been removed and all that remains is the concrete pad, which it shared with other sites related to the 3718-F Alkali Metal Treatment and Storage Facility. The 3718-F Storage Facility was designed and constructed in 1968, and redesigned and modified in 1973. The building, which measured 6.1 meters by 14.6 meters (20 feet by 48 feet), was constructed on a concrete pad. The gabled ends, roof, and siding were corrugated steel. The building had electric lights, electric space heaters, and two window air conditioning units. The northern half of the building was used as a storage area and the southern half was used as a work area. A concrete loading pad measuring 3.7 meters by 6.1 meters (12 feet by 20 feet) was located at the south end of the building. The 15-centimeter (6-inch) thick concrete treatment pad measuring 7.2 meters by 14.6 meters (25 feet by 48 feet) adjoined the east side of the building. A burn shed and fume scrubber (3718-F BS) and two treatment tanks (3718-F TT1 and 3718-F TT2) were located on the pad. The north and south ends of the pad are bermed and the pad slopes to the east. Along the east edge is a 7.6-centimeter (3-inch) wide by 7.6 centimeter (3-inch) deep trench. The trench was connected to a floor drain which discharged to the process sewer system. This design was intended to prevent runoff onto the surrounding soils.

Location: The unit was located in the 300 Area, east of the 324 Building. It shared a common fence with the 3717C, 335, 335A, and 336 Buildings.

Process Description: The 3718-F Storage Facility was used to store high purity alkali metals and alkali metal alloys to be used in laboratories. Before 1985, solutions from the treatment tanks were drained onto the concrete pad through a valve in the bottom of the tanks. The spent reagents would flow across the pad to the trough and from the trough to the 300 Area Process Sewer. Beginning in 1985, all spent alcohol solutions were packaged in approved containers and handled as dangerous waste. The used water continued to be drained to the process sewer until 1987 when the use of the treatment tanks was discontinued.

Related Sites/ Structures: The unit was associated with a burn shed and fume scrubber (3718-F BS) and two treatment tanks (3718-F TT1 and 3718-F TT2).

Waste Type: Chemicals

Waste Description: Hazardous wastes are no longer stored in this facility.

The wastes stored at the facility while in use consisted of sodium, lithium, and sodium alloys. Cleaning agents used within the treatment tanks and discharged to the concrete pad included water, methanol, isopropanol, and 2-butoxy ethanol (trade name Dowanol). Reaction products contained within the solutions included alkali oxides, alkali carbonates, and alkoxides (strong organic bases).

During cleanup, polychlorinated biphenyl (PCB) Aroclor 1254 contamination from an unknown source was identified in soil samples.

Closure Info: 3718-F BS, 3718-F SF, 3718-F TT1 and 3718-F TT2 were addressed as a group. The information below documents information for the group of sites.

All structures associated with the 3718-F Alkali Metal Treatment Facility were removed during September 1996 and May 1998.

On February 24, 1998 it was agreed that DOE would perform a voluntary action to remove the drainage sump structure with from which the PCB contaminated sample was taken and to conduct soil sampling in the vicinity of the structure. Initial sampling was performed on March 17, 1998 to determine the levels of PCB's. Cleanup activities occurred between May 1, 1998 and May 6, 1998. During this time, three drain structures were removed. The drain to the process sewer at the northeast corner of the treatment pad was removed and the line connecting to the process sewer was plugged. The two drain sumps for the fume scrubber were removed as

a unit because they were connected together with a metal brace. One drain sump was found to be open to soil at the bottom. The two structures were resting on an aluminum plate covered with a white encrustation (later determined to be corroded aluminum). All discolored soil was removed and drummed. Sampling of the drummed soil and the soil beneath the aluminum plate was performed.

Code: 3718-F TT1	Classification: Accepted
Names: 3718-F TT1; 3718-F Treatment Tank 1	Reclassification: Closed Out (8/4/1998)
Type: Storage Tank	Start Date: 1/1/1968
Status: Inactive	End Date: 1/1/1998

Description: The 3718-F Treatment Tank 1 (3718-F TT1) was a tank used to clean equipment contaminated with alkali metals by reacting the metals with alcohol. The tank has been removed and all that remains is the concrete pad which it shared with other sites related to the 3718-F Alkali Metal Treatment and Storage Facility. 3718-F TT1 was a long, narrow tank constructed of 0.3-centimeter (1/8-inch) stainless steel. The tank had a hinged solid cover and was supported by eight metal legs spaced in pairs at intervals along its length.

Location: The unit was located in the 300 Area, east of the 324 Building. It shared a common fence with the 3717C, 335, 335A, and 336 Buildings. The tank was located on a concrete pad adjacent to the east side of the storage building.

Process Description: Equipment contaminated with alkali metals was cleaned in an alcohol bath in the tank. The alcohol bath was used for confined quantities of sodium because the sodium-alcohol reaction was slower and easier to control. The reaction process took up to several days to complete, depending on the amount of sodium on the component and the presence of tight crevices which would minimize the surface area available for reaction. The reaction of the alkali metals with alcohol produced alkoxides, strong organic bases. Alcohols used in this process included methanol, isopropanol, and 2-butoxy ethanol (trade name Dowanol). Before 1985, solutions from the treatment tanks were drained onto the concrete pad through a valve in the bottom of the tanks. The spent reagents would flow across the pad to the trough and from the trough to the 300 Area Process Sewer. Beginning in 1985, all spent alcohol solutions were packaged in approved containers and handled as dangerous waste. The used water continued to be drained to the process sewer until 1987 when the use of the treatment tanks was discontinued.

Related Sites/ Structures: Structures associated with the unit include the other treatment tank (3718-F TT2), the burn shed and fume scrubber (3718-F BS), and the storage shed (3718-F SF).

Waste Type: Chemicals

Waste Description: Hazardous wastes are no longer treated in the tank. Wastes treated at the tank included sodium, lithium, and sodium-potassium alloys. Cleaning agents used within the treatment tank included methanol, isopropanol, and 2-butoxy ethanol (trade name Dowanol). The reaction products were alkoxides (strong organic bases).

Closure Info: 3718-F BS, 3718-F SF, 3718-F TT1 and 3718-F TT2 were addressed as a group. The information below documents information for the group of sites.

All structures associated with the 3718-F Alkali Metal Treatment Facility were removed during September 1996 and May 1998.

On February 24, 1998 it was agreed that DOE would perform a voluntary action to remove the drainage sump structure with from which the PCB contaminated sample was taken and to conduct soil sampling in the vicinity of the structure. Initial sampling was performed on March 17, 1998 to determine the levels of PCB's. Cleanup activities occurred between May 1, 1998

and May 6, 1998. During this time, three drain structures were removed. The drain to the process sewer at the northeast corner of the treatment pad was removed and the line connecting to the process sewer was plugged. The two drain sumps for the fume scrubber were removed as a unit because they were connected together with a metal brace. One drain sump was found to be open to soil at the bottom. The two structures were resting on an aluminum plate covered with a white encrustation (later determined to be corroded aluminum). All discolored soil was removed and drummed. Sampling of the drummed soil and the soil beneath the aluminum plate was performed.

Code:	3718-F TT2	Classification:	Accepted
Names:	3718-F TT2; 3718-F Treatment Tank 2	Reclassification:	Closed Out (8/4/1998)
Type:	Storage Tank	Start Date:	1/1/1968
Status:	Inactive	End Date:	1/1/1998
Description:	The 3718-F Treatment Tank 2 (3718-F TT2) was a tank used to clean equipment contaminated with alkali metals by reacting the metals with water. The tank has been removed and all that remains is the concrete pad which it shared with other sites related to the 3718-F Alkali Metal Treatment and Storage Facility. 3718-T TT2 was a 430-gallon (1,630-liter) tank constructed of 0.3-centimeter (1/8-inch) stainless steel. The tank was topped by a hinged screen cover.		
Location:	The unit was located in the 300 Area, east of the 324 Building. It shared a common fence with the 3717C, 335, 335A, and 336 Buildings. The tank was located on a concrete pad adjacent to the east side of the storage building.		
Process Description:	Equipment contaminated with alkali metals was cleaned in a water bath in the tank. The water was only used for small quantities of unconfined alkali metal because of the violence of the reaction. The reaction produced alkali metal hydroxides. Before 1985, solutions from the treatment tanks were drained onto the concrete pad through a valve in the bottom of the tanks. The spent reagents would flow across the pad to the trough and from the trough to the 300 Area Process Sewer. Beginning in 1985, all spent alcohol solutions were packaged in approved containers and handled as dangerous waste. The used water continued to be drained to the process sewer until 1987 when the use of the treatment tanks was discontinued.		
Related Sites/ Structures:	Structures associated with the unit include the other treatment tank (3718-F TT1), the burn shed and fume scrubber (3718-F BS), and the storage shed (3718-F SF).		
Waste Type:	Chemicals		
Waste Description:	Hazardous wastes are no longer treated in the tank. Wastes treated at the tank included sodium, lithium, and sodium-potassium alloys. Water was used as the cleaning agent and the reaction products were alkali metal hydroxides.		
Closure Info:	3718-F BS, 3718-F SF, 3718-F TT1 and 3718-F TT2 were addressed as a group. The information below documents information for the group of sites.		

All structures associated with the 3718-F Alkali Metal Treatment Facility were removed during September 1996 and May 1998.

On February 24, 1998 it was agreed that DOE would perform a voluntary action to remove the drainage sump structure with from which the PCB contaminated sample was taken and to conduct soil sampling in the vicinity of the structure. Initial sampling was performed on March 17, 1998 to determine the levels of PCB's. Cleanup activities occurred between May 1, 1998 and May 6, 1998. During this time, three drain structures were removed. The drain to the process sewer at the northeast corner of the treatment pad was removed and the line connecting to the process sewer was plugged. The two drain sumps for the fume scrubber were removed as

a unit because they were connected together with a metal brace. One drain sump was found to be open to soil at the bottom. The two structures were resting on an aluminum plate covered with a white encrustation (later determined to be corroded aluminum). All discolored soil was removed and drummed. Sampling of the drummed soil and the soil beneath the aluminum plate was performed.

Code:	3746-D SR	Classification:	Accepted
Names:	3746-D SR; 3746-D Silver Recovery; 3746-D Silver Recovery Process	Reclassification:	Rejected (1/27/1999)
Type:	Process Unit/Plant	Start Date:	1/1/1984
Status:	Inactive	End Date:	1/1/1996
Description:	The 3746-D Silver Recovery unit is a piece of equipment located in the 3746-D Building, a Quonset hut. The electrolytic portion of the silver recovery unit is present, however, the ion exchange columns are not. The recovery unit is currently inactive. A large white basin drains into the sanitary sewer system and is the only drain in the building. This drain is not part of the 3746-D Silver Recovery equipment.		
Location:	The unit is located inside the 3746-D Building. The 3746-D Building is on the west side of Alaska Street, next to the 3705 Building.		
Process Description:	The unit was used to recycle corrosive, silver-bearing photochemical wastes generated by Pacific Northwest National Laboratory Photo Processing Operations. Silver-bearing liquid was run through an electrolytic unit to remove the majority of the silver. The depleted liquid was run through an ion exchange column to remove more silver. From 1984 to 1992, process effluent was discharged to the sanitary sewer. During this time period, the effluent was tested against discharge limits. Until 1992, effluent that was within discharge limits was poured down a sanitary drain. From 1992 through September 1996, effluent was shipped off site. The unit has been inactive since October 1, 1996, when Lockheed Martin Services, Inc., took over photographic operations.		
Related Sites/Structures:	The unit is associated with the 3746-D Building, and the Lockheed Martin Services, Inc. photo-processing operations.		
Waste Type:	Chemicals		
Waste Description:	Corrosive silver containing waste photochemicals used to be processed to reclaim silver. During 1993, 7,721 liters (2,040 gallons) of photochemical waste was processed to recover 209.2 kilograms (1,139.686 troy ounces) of silver.		

Code:	400 FD1A	Classification:	Accepted
Names:	400 FD1A; 4717 Reactor Service Building HVAC Condensate; Injection Well #1A; Miscellaneous Stream #14; 400 Area French Drain 1A	Reclassification:	Rejected (12/15/1998)
Type:	French Drain	Start Date:	1/1/1979
Status:	Active	End Date:	
Description:	The unit is a 1.5 meter (5 foot) long, 1.2 meter (4 foot) diameter concrete or vitrified clay pipe filled with gravel. It is in a vegetation-free, gravel covered field south of the 403 Building and cannot be identified visually. The site is not located in a depression or a contaminated area.		
Location:	The site is located between the 403 and 4703 Buildings, about 10.1 meters (33 feet) west of waste site, WIDS Site Code 400 FD1B.		

Process Description: The Heating, Ventilation, and Air Conditioning (HVAC) system collects condensate from the air on the coils of the unit. The condensate is collected by the HVAC unit and drained to the french drain.

Related Sites/ Structures: The site is associated with the 4717 Reactor Service Building.

Waste Type: Water

Waste Description: Reports conflict about effluents received by the unit which may have received demineralizer backwash; Heating, Ventilation, and Air Conditioning (HVAC) system condensate from the 4717 Facility Reactor Service Building; and/or water and detergents. The flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD1B

Classification: Accepted

Names: 400 FD1B; 4703 Building (FFTF Control Building) HVAC Condensate; Injection Well #1B; Miscellaneous Stream #15; 400 Area French Drain 1B

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or polyvinyl chloride (PVC) pipe filled with gravel. It is in a vegetation free, gravel covered field and cannot be identified visually. The site is not located in a depression or contaminated area.

Location: The site is located south of the 403 Building and approximately 10 meters (33 feet) east of WIDS Site 400 FD1A.

Process Description: The Heating, Ventilation, and Air Conditioning (HVAC) system collects condensate from the air on the coils of the unit. The condensate is collected by the HVAC unit and drained to the french drain.

Related Sites/ Structures: The site is associated with the 4703 Building (FFTF Control Building).

Waste Type: Water

Waste Description: Reports conflict about effluents discharged to this unit which may receive sump water; Heating, Ventilation, and Air Conditioning (HVAC) condensate from the 4703 Building; and/or water and detergent solutions. The flow rate as less is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD2

Classification: Accepted

Names: 400 FD2; 4621E Building HVAC Condensate and Stormwater; Injection Well #02; Miscellaneous Stream #16; 400 Area French Drain 2

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or polyvinyl chloride (PVC) pipe filled with gravel. The above ground portion is a 0.9 meter (3 foot) long, 15.2

centimeter (6 inch) diameter rusted metal pipe capped with a metal plug and surrounded with landscaping rocks and shrubs. The site is not located in a depression or contaminated area.

Location: The site is located 3.05 meters (10 feet) south of 4710 Building and 6.1 meters (20 feet) east of that building's southwest corner. It is 7.6 centimeters (3 inch) north of a paved sidewalk.

Process Description: The site receives both stormwater runoff and Heating, Ventilation, and Air Conditioning (HVAC) condensate. The HVAC system collects condensate from the air on the coils of the unit. The condensate is collected by the HVAC unit drained to the french drain.

Related Sites/ Structures: The site is associated with the 4621E Building.

Waste Type: Water

Waste Description: Reports conflict about effluents discharged to this unit. It may have received stormwater; and Heating, Ventilation, and Air Conditioning (HVAC) system condensate from the 4621E Auxiliary Equipment Building; and/or water and detergent solutions. The "Inventory of Miscellaneous Streams", Revision 3, lists the sources as stormwater and potable water. This document lists the flow rate as less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD3

Classification: Accepted

Names: 400 FD3; 408A East Dump Heat Exchanger Stormwater; Injection Well #03; Miscellaneous Stream #17; 400 Area French Drain 3

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or vitrified clay pipe filled with gravel. The above ground portion is two rusty metal pipes. One is 0.61 meters (2 feet) long and 8.9 centimeters (3.5 inches) in diameter. The other is 0.91 meters (3 feet) long and 11.4 centimeters (4.5 inches) in diameter. Each pipe is capped with a metal plug. The unit is surrounded by four 1.2-meter (4-foot) high yellow metal posts and is in a gravel-covered, vegetation-free field.

Location: The site is located 14.6 meters (42 feet) east of the southeast corner of the 408-A East Dump Heat Exchanger (DHX) outside the protected area fence.

Waste Type: Stormwater Runoff

Waste Description: The site receives stormwater from the 408-A Dump Heat Exchanger (DHX). The flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD4

Classification: Accepted

Names: 400 FD4; 491E Heat Transport Building Stormwater and HVAC Condensate; Miscellaneous Stream #18; 400 Area French Drain 4

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or vitrified clay pipe filled with gravel. The above ground portion is a 0.91 meter (3 foot) long, 11.4-centimeter (4.5-inch) diameter, rusted metal pipe protruding from the middle of a gravel-covered field. It is surrounded by four 1.2-meter (4-foot) tall yellow metal posts. Each of the posts has had a 20-

centimeter (8-inch) diameter PVC (polyvinyl chloride) pipe measuring 2.0 meters (6 feet 8 inches) in length placed over it. The white PVC pipes have been marked with three horizontal, yellow stripes.

Location: The site is located approximately 44 meters (144.3 feet) southeast of the 491-E building and approximately 19 meters (62.3 feet) north of the 4713A building.

Process Description: The site receives both stormwater runoff and Heating, Ventilation, and Air Conditioning (HVAC) condensate. The HVAC system collects condensate from the air on the coils of the unit. The condensate is collected by the HVAC unit and drained to the french drain.

Related Sites/ Structures: The site is related to the 491-E Building.

Waste Type: Water

Waste Description: Reports conflict about effluents discharged to this unit. It may receive dilute condensate; floor drain effluent and effluent from the 491-E Heat Transport Building consisting of stormwater from the roof of HTS-E, condensate from the building's Heating, Ventilation, and Air Conditioning (HVAC) system, rheostat water, and non-regulated quantities of sodium carbonate. The "Inventory of Miscellaneous Streams", Revision 3, lists the streams as HVAC condensate and storm water. The flow rate is less than 0.038 liters per minute (less than 0.01 gallons) per minute.

Code: 400 FD5

Classification: Accepted

Names: 400 FD5; 408 South Building Stormwater and Condensate; Injection Well #05; Miscellaneous Stream #19; 400 Area French Drain 5

Reclassification: Rejected (12/15/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.2-meter (4-foot) diameter 1.5-meter (5-foot) long concrete or polyvinyl chloride (PVC) pipe filled with gravel and located in a gravel and cobble covered field. The visible portion of the unit is two rusted metal stand pipes. On pipe is 38.1-centimeters (15 inches) tall by 11.4 centimeters (4.5 inches) in diameter and the other is 15.2 centimeters (6 inches) tall by 20.3 centimeters (8 inches) in diameter. Surrounding the unit are two 1.2-meter (4-foot) tall yellow metal posts. Both stand pipes have a metal cap.

Location: The site is located 39.6 meters (130 feet) south of the 408-C West Dump Heat Exchanger (DHX) and southwest of the Reactor Containment Building. This location is on the west side of the 491W Heat Transport Building.

Process Description: The site receives both stormwater runoff and heat exchanger condensate from the 491W Heat Transport Building. The heat exchanger system collects condensate from the air on the coils of the unit. The condensate is collected by the heat exchanger unit and drained to the french drain.

Related Sites/ Structures: The site is related to the 408 South Building and the 491-W Heat Transport Building.

Waste Type: Water

Waste Description: Reports conflict about effluents discharged to the unit, which may receive stormwater; dump heat exchanger effluent; and rheostat water containing non regulated quantities of sodium carbonate from the 408-B Dump Heat Exchanger (DHX) and the 491-W Heat Transport Building; condensate from building air cooling systems, solutions of water and detergent. The "Inventory of Miscellaneous Streams", Revision 3 lists the streams as heat exchanger

condensate and stormwater. This document states that this stream receives the heat exchanger condensate formerly routed to Miscellaneous Stream #20 (WIDS Site Code 400 FD6). The document lists the flow rate as less than 0.08 liters per minute (0.02 gallons per minute).

Code:	400 FD6	Classification:	Accepted
Names:	400 FD6; 408C West Dump Heat Exchanger Sump Stormwater; Miscellaneous Stream #20; 400 Area French Drain 6	Reclassification:	Rejected (12/15/1998)
Type:	French Drain	Start Date:	1/1/1979
Status:	Inactive	End Date:	1/1/1995
Description:	The site was a 1.2-meter (4-foot) diameter, 1.5-meter (5-foot) long, concrete or vitrified clay pipe, filled with gravel and cobble, and located in a gravel and cobble covered field. The above ground portion had three rusted metal pipes, one 0.9 meters (3 feet) tall, one 0.61 meters (2 feet) tall, and the third 0.3 meters (1 foot) tall. All three had metal caps. The unit was surrounded by four 1.2-meter (4-foot) high yellow metal marker posts. The location of the site is now under the Sodium Storage Facility (Building 402). The site was abandoned in place. The site is not accessible.		
Location:	The site is located under the 402 building, 24.4 meters (80 feet) south of the 408C West Dump Heat Exchanger (DHX), 34.4 meters (113 feet) west of the 408B South Dump Heat Exchanger (DHX), and 16.8 meters (55 feet) northwest of 400 Area French Drain 5 (WIDS Site Code 400 FD5).		
Related Sites/ Structures:	The site was associated with the 408C West Dump Heat Exchanger.		
Waste Type:	Water		
Waste Description:	Reports conflict about effluents discharged to this unit. It may have received stormwater from the 408-C West Dump Heat Exchanger (DHX), condensate from building air cooling systems, floor drain effluent, and/or other stormwater. The Inventory of Miscellaneous Streams, Revision 3 lists the flow as less than 0.038 liters (0.01 gallons) per minute.		

Code:	400 FD7	Classification:	Accepted
Names:	400 FD7; 453C Switch Gear Pad Stormwater; 4621W Auxiliary Equipment Building HVAC Condensate and Stormwater; Injection Well #07; Miscellaneous Stream #21; Miscellaneous Stream #27; 400 Area French Drain 7	Reclassification:	Rejected (12/15/1998)
Type:	French Drain	Start Date:	1/1/1979
Status:	Active	End Date:	
Description:	The unit is a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or polyvinyl chloride (PVC) pipe filled with gravel. Drawing H-4-14647 shows the site to be in the middle of a paved area northwest of the Fast Flux Test Facility (FFTF) Reactor Containment Building, south of some water tanks. The unit has a 15.2 centimeter (6 inch) diameter metal pipe with a metal cap at grade in its center. The french drain is not visible from the surface. It is paved over with asphalt. Drawing H-4-152050 show both the 453-C Building and 4621-W Building connected to it by pipelines.		
Location:	The site is located 15.2 meters (50 feet) north of the 408C West Dump Heat Exchanger (DHX) and on the west side of the 4621W Auxiliary Equipment Building.		
Related Sites/ Structures:	The site is related to the 453C Switch Gear Pad and the 4621W Auxiliary Equipment Building.		

Structures:**Waste Type:** Water

Waste Description: The site receives potable and stormwater from several sources. It receives stormwater from the 453-C Switch Gear Pad; effluent from the 4621W Auxiliary Equipment Building, that includes condensate from Heating, Ventilation, and Air Conditioning (HVAC) coolers, water from roof and floor drains and stormwater. The flow rate for the streams from the 4621W Building is less than 0.038 liters per minute (0.01 gallons per minute). The flow rate for the stormwater runoff from the 453C Switch Gear Pad is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD8**Classification:** Accepted

Names: 400 FD8; 4621W Auxiliary Equipment Building HVAC Condensate; Injection Well #08; Miscellaneous Stream #22; 400 Area French Drain 8

Reclassification: Rejected (12/3/1998)**Type:** French Drain**Start Date:** 1/1/1979**Status:** Active**End Date:**

Description: The unit is a 1.2-meter (4-foot) diameter, 1.5-meter (5-foot) long concrete or polyvinyl chloride (PVC) pipe filled with gravel. Drawing H-4-14647 shows the site to be located in an asphalt covered area. The site is capped by a 20.3-centimeter (8-inch) diameter metal stand pipe with a metal lid at grade.

Location: The site is located south of the 484 Building, 7.6 meters (25 feet) east and slightly south of the 482B/T-87 Storage Tank. The site is on the southwest side of the 4621W Building.

Process Description: The Heating, Ventilation, and Air Conditioning (HVAC) system collects condensate from the air on the coils of the unit. The condensate is collected by the HVAC unit and drained to the french drain.

Related Sites/Structures: The site is related to the 4621W Auxiliary Equipment Building.

Waste Type: Water

Waste Description: The site receives Heating, Ventilation, and Air Conditioning (HVAC) condensate from the 4621W Auxiliary Equipment Building. The flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400 FD9**Classification:** Accepted

Names: 400 FD9; 481 Pumphouse Sanitary Water and Salt Water; Injection Well #09; Miscellaneous Stream #23; 400 Area French Drain 9

Reclassification: Rejected (12/3/1998)**Type:** French Drain**Start Date:** 1/1/1979**Status:** Active**End Date:**

Description: The unit consists of a 1.5-meter (5-foot) long, 1.2-meter (4-foot) diameter concrete or vitrified clay pipe filled with gravel. The above grade structure is a rusted metal stand pipe 12.7 centimeters (5 inches) in diameter and 30.5 centimeters (1 foot) tall. It is located in a vegetation free, gravel covered field, and is surrounded by three 1.2-meter (4-foot) tall yellow steel posts

Location: The site is located approximately 39.6 meters (130 feet) north of the 408-C West Dump Heat Exchanger (DHX) and southwest of the 482A/T-58 and 482B/T-87 Water Tanks.

Related Sites/ Structures: The site is related to the 481 Pumphouse.

Waste Type: Water

Waste Description: The site receives sanitary water from pump seal leaks, and salt water from water softener back flushing from the 481 Pumphouse. The flow rate is less than 0.038 liters per minute (0.01 gallons per minute)

Code: 400 FD10

Classification: Not Accepted

Names: 400 FD10; 482A Building - T-58 Stormwater; Injection Well #10; Miscellaneous Stream #25; 400 Area French Drain 10

Reclassification: None

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The site is either a concrete or vitrified clay pipe filled with gravel (H-4-14647). The disposal structure is not visible in the field. The drawing (H-4-14647) states that the drywells shall be located in the field so that they are 12.2 meters (40 feet) minimum from the nearest building line and 3.05 meters (10 feet) minimum from utilities and other structures. The pipe (cast iron soil) invert is to the top of the french drain. Connections (elbows) are made with 45 degree laterals. The top of the french drain is covered by a polyethylene sheet and a 5.1-centimeter (2-inch) thick redwood or cedar wooden cover. The feed pipe is a 10.2 centimeter (4 inch) diameter steel pipe (drain line) with metal grate cover that is flush with the surrounding concrete paved area. The feed pipe drain is located at the base of a set of concrete steps leading to the equipment room for the 482A/T-58 Water Storage Tank. The Water Storage Tank is a concrete structure with a subgrade equipment room and concrete steps leading to the equipment room.

Location: The french drain is located 12.2 meters (40 feet) west and slightly north of the 482A/T-58 Water Storage Tank.

Process Description: The site is used to receive stormwater runoff from the storage tank and the floor drain located at the base of the steps leading to the equipment room.

Related Sites/ Structures: The site is associated with the 482A/T-58 Water Storage Tank and the equipment room for this same structure. A similar structure exists for the 482B/T-87 Water Storage Tank. The french drain associated with the 482B/T-87 Water Storage Tank is WIDS Site Code 400 FD10A.

Waste Type: Stormwater Runoff

Waste Description: The site receives stormwater runoff from the 482A/T-58 Water Storage Tank and Equipment Room Structure. The flow rate is less than 0.038 liters (0.01 gallons) per minute.

Code: 400 FD10A

Classification: Not Accepted

Names: 400 FD10A; 482A Building -T-87 Stormwater; Injection Well #10A; Miscellaneous Stream #24; 400 Area French Drain 10A

Reclassification: None

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The site is either a concrete or vitrified clay pipe filled with gravel (H-4-14647). The disposal structure is not visible in the field. The drawing (H-4-14647) states that the drywells shall be located in the field so that they are 12.2 meters (40 feet) minimum from the nearest building line and 3.05 meters (10 feet) minimum from utilities and other structures. The pipe (cast iron soil

) invert is to the top of the french drain. Connections (elbows) are made with 45 degree laterals. The top of the french drain is covered by a polyethylene sheet and a 5.1 centimeter (2 inch) thick redwood or cedar wooden cover. The feed pipe is a 10.2 centimeter (4 inch) diameter steel pipe (drain line) with metal grate cover that is flush with the surrounding concrete paved area. The feed pipe drain is located at the base of a set of concrete steps leading to the equipment room for the 482B/T-87 Water Storage Tank. The Water Storage Tank is a concrete structure with a subgrade equipment room and concrete steps leading to the equipment room.

Location: The french drain is located 6.4 meters (21 feet) northwest of the 482B/T-87 Water Storage Tank.

Process Description: The site is used to receive stormwater runoff from the storage tank and the floor drain located at the base of the steps leading to the equipment room.

Related Sites/ Structures: The site is associated with the 482B/T-87 Water Storage Tank and the equipment room for this same structure. A similar structure exists for the 482A/T-58 Water Storage Tank. The french drain associated with the 482A/T-58 Water Storage Tank is WIDS Site Code 400 FD10.

Waste Type: Stormwater Runoff

Waste Description: The site receives stormwater runoff from the 482B/T-87 Water Storage Tank and Equipment Room Structure. The flow rate is less than 0.038 liters (0.01 gallons) per minute.

Code: 400 PPSS

Classification: Accepted

Names: 400 PPSS; 4608 Percolation Pond; 4608B Control Structure and Process Sewer Sampling Site; 4904 Process Sewer Main; 4904 Process Sewer System; 400 Area Process Pond and Sewer System

Reclassification: None

Type: Pond

Start Date: 1/1/1979

Status: Active

End Date:

Description: This site is the 400 Area Secondary Cooling Water (400 Area Process Sewer). The unit consists of underground piping, a control structure, and two percolation ponds known as 4608B and 4608C. The control structure, located near the 4607 Sanitary Sewer septic tank, is a corrugated metal building. A 30.5 centimeter (12 inch) main pipeline carries effluent from the 400 Area to the control structure, then northeast to the percolation ponds. Five 15.2 centimeter (6 inch) diameter pipes discharge process water from the four contributing facilities (see Process Description) into the main pipe (two pipes from FMEF, and one pipe each from the other three facilities). The ponds are 30.5 meters (100 feet) long, 15.3 meters or 23 meters (50 feet or 75 feet) wide, and 1.2 meters (4 feet) deep. The process sewer pipeline empties into a diversion box that is built into the wall that separates the two ponds. Each pond is connected to the diversion box by a 35.6 centimeter (14 inch) vitrified clay pipe. The ponds are enclosed by an 2.4 meter (8 foot) chain-link fence that has an unlocked, open gate. Each pond appears as a vegetation covered area that is recessed 1.2 to 1.8 meters (4 to 6 feet). The sampling location for the process sewer is contained in the flow metering hut (4608B) located just north of the northern fence line of the 400 Area. The following is a list of source contributors and their status. Numbering/naming conventions, e.g., FMEF-352, 36B, 4M-92-00240/M are specific to facility locations, systems, and Engineering Change Notice/Work Package within the FFTF Complex. Note that some of the original source contributors have been plugged or bermed to prevent cooling water from entering the process sewer.

15	Floor Drain - FMEF-404	
36B system drain plugged.	16	Floor Drain - FMEF-238
	36B system drain plugged.	
17	Floor Drain - FMEF	Routed to 36B system.
18	Floor Drain - FMEF-307	
36B system drain plugged.	19	Floor Drain - FMEF
	20	Floor Drain - FMEF
	21	Floor Drain - FMEF
	36B	

system drain plugged. 22 Floor Drain - FMEF Routed to 36B system. 23 Floor Drain - FMEF 36B system plugged by 4M-92-00240/M. 24 Floor Drain - FMEF-204 36B system plugged by 4M-92-00240/M. 25 Floor Drain - FMEF-206 36B system plugged by 4M-92-00240/M. 26 Floor Drain - FMEF Routed to 36B system. 27 Floor Drain - FMEF Routed to 36B system. 28 Floor Drain - FMEF-300 36B system plugged by 4M-92-00240/M. 29-42 Floor Drain - FMEF-352 36B system plugged by 4M-92-00240/M. 44-47 Floor Drain - FMEF Bermed to prevent spills from discharging to process sewer. 49-51 Floor Drain - FMEF Bermed to prevent spills from discharging to process sewer. 60 Equipment Drain Bermed to prevent spills from discharging to process sewer. 62 Floor Drain 0 MASF-HB Drain has been permanently plugged. 63 Floor Drain - MASF-HB Bermed to prevent spills from discharging to process sewer. 64 Air Compressor Cooling Water - MASF-ER Bermed under 4A-92-00065/W. 65 Equipment Drain - MASF-ER Bermed under 4A-92-00065/W. 66 Floor Drain in 481-A A rubber plug has been installed on the drain cover under 4F-92-00940/W. 67 Sanitary Water Pump Leakage - 481-A Drains service pump seal; 4 inch collars have been installed. 68 Equipment Drain - 481-A Drains service pump seal; 4 inch collars have been installed. 69 Equipment Drain - 481-A Drains service pump seal; 4 inch collars have been installed. 70 Janitor Sink - 481-A Drains service pump seal; 4 inch collars have been installed.

Location: The site is located approximately 610 meters (2000 feet) north, northeast of the 400 Area.

Process Description: There are four facilities in the 400 Area that contribute to the 400 Area Secondary Cooling Water (400 Area Process Sewer). Fast Flux Test Facility (FFTF) The FFTF is a sodium-cooled test reactor that was used for nuclear research. The reactor's high neutron flux level and neutron energies allowed accelerated testing of fuels and materials. The reactor operated from 1980 to April 1, 1990, when it was ordered into standby status by the U. S. Department of Energy (DOE). In a December 15, 1993 memorandum, the DOE directed its Richland Operations Office to initiate action to place the FFTF in a radiologically and industrially safe shutdown condition. The processes that contribute to the 400 Area Process Sewer are the auxiliary system cooling towers and a batch discharge. The cooling towers reduce the heat generated in the equipment supporting the FFTF auxiliary systems. There is no contact between the piping of the cooling towers and any radioactive liquid, waste, or nuclear materials in the reactor. Adjacent to the cooling tower pad is a building containing water treatment equipment, water quality monitoring instrumentation, and process control for blowdown valves associated with the cooling towers. This system is adjacent to the reactor containment and service buildings within the 400 Area Property Protection Area. Fuels And Materials Examination Facility (FMEF) The FMEF was designed and constructed as a secure, multistoried structure with the capability of handling low and high exposure radioactive materials. Because of program and funding changes, most of the specialized equipment was never installed and radioactive material has never been introduced into the FMEF. The FMEF currently is used for administrative offices. The processes that contribute to the 400 Area Process Sewer are the auxiliary systems cooling towers and batch discharges from the 36B system and the 36D system. Originally, the 36D system was intended to contain radioactive waste. However, with the change in mission for the FMEF, this system has not been used for holding radioactive waste. Engineering documents have been formally changed to reflect the correct status of the 36D system. The cooling system at the FMEF is also a non-contact cooling water system similar to the unit for the FFTF. Maintenance and Storage Facility (MASF) The MASF, located in the 400 Area Property Protection Area, consists of a main building and a two story service wing. The purpose of MASF is to provide maintenance, repair, and storage areas for radioactive and/or specialized maintenance equipment used in support of the FFTF or other onsite activities. The contributors to the 400 Area Process Sewer are floor and equipment drains located in the bay

area. Batch discharges from the large diameter cleaning vessel (LDCV) and bearing cooling water from mitigation pump test runs also are discharged to the process sewer. 481-A Water Pumphouse The 481-A Water Pumphouse was constructed to provide space for a diesel driven fire pump and two sanitary water pumps. An equipment drain associated with sanitary water pump packing leakage contributes to the 400 Area Secondary Cooling Water. The discharges for each facility are described below. Fast Flux Test Facility (FFTF) The FFTF has one continuous discharge from the cooling towers, which is non-contact cooling water, and one batch discharge, which is condensate from the heating and ventilation (H&V) units. The cooling tower continuous stream is composed of tower sump blowdown (for conductivity control) and sump overflow. The cooling towers provide cooling to the Cooling Water System, which in turn provides cooling to the following various auxiliary systems, incontainment chill water system, excontainment chill water system, radioactive argon processing system and contaminated air processing system, Mobiltherm lite cooling system, and the liquid rheostat cooling system. These auxiliary cooling systems, cool systems that directly support operation of the reactor plant, and the interim decay and storage (IDS) vessel and are explained in greater detail in the following. A portion of the sodium contained in the reactor vessel is routed to a cold trap (CT), through the reactor overflow line (part of the reactor sodium level control system), for removal of impurities. The CT is cooled by a sodium potassium eutectic metal (NaK) system that, in turn, is cooled by an oil system containing Mobiltherm lite oil. The Mobiltherm cooling system is cooled by the Cooling Water System. The Mobiltherm cooling system has been drained of oil and the oil has been removed from the site. Cooling water is blocked from the Mobiltherm/cooling water heat exchanger by closed valves. This portion of the cooling water system is no longer active. The reactor is cooled by three liquid sodium loops with each loop consisting of a primary and a secondary loop. Each primary and secondary loop contains a main circulating pump to provide motive force for the liquid sodium coolant. Each pump has a liquid rheostat in series with the field windings to control the speed of the pump. The liquid rheostat contains sodium carbonate (3,407 liters) in a 2 to 3 percent weight solution. Because of the heat generated in the rheostat, the sodium carbonate solution must be cooled. Cooling water is applied to a liquid rheostat/cooling water heat exchanger (one per rheostat) to remove the heat generated during operation. The rheostats are located in air atmosphere cells in the heat transport buildings of FFTF. The rheostats do not come into contact with any form of radioactive contamination or field. The IDS vessel contains liquid sodium that is circulated to remove the decay heat from expended fuel elements stored in the vessel. The sodium loop is cooled by the NaK loop, which in turn is cooled by a Mobiltherm cooling system. The Mobiltherm cooling system has been drained of oil and the oil has been removed from the site. Cooling water is blocked from the Mobiltherm/cooling water heat exchanger by closed valves. This portion of the cooling water system is no longer active. The radioactive argon processing system (RAPS) processes radioactive argon used a cover gas for the reactor. The contaminated air processing system (CAPS) processes the inert gas (nitrogen) used in cells that contained primary system sodium. The RAPS and CAPS compressors are cooled by the RAPS and CAPS cooling water system. This system removes the heat of compression and motor heat from the compressors. The RAPS and CAPS cooling water system is cooled by the Cooling Water System through the RAPS and CAPS/cooling water heat exchanger. The RAPS and CAPS cooling water system has been shut down, although the system still contains the ethylene glycol/water solution. The inert cells containing primary sodium coolant are cooled by inert gas blowers. The blowers take a suction on the inert cells and discharge the gas through a heat exchanger and return the gas to the cell. Incontainment chill water cools the inert gas blowers, using an ethylene glycol solution. The chill water is 'chilled' by use of Freon cycle chillers. The chillers are cooled by the cooling water system. The cells outside of containment are cooled by various H&V units. The H&V units are cooled by excontainment chill water using an ethylene glycol solution. The chill water is 'chilled' by use of Freon cycle chillers. The chillers are cooled by the cooling water system. All the cooling water systems (A-G) contain a 40 percent solution of ethylene glycol that is routed to the cooling towers. The cooling towers are galvanized steel, closed-loop evaporation cooling through cooling coils in the cooling towers. Water is sprayed over the coils as air is blown up through the cooling coils to the

recirculated ethylene glycol solution. The eight cooling towers each have a sump capacity of 7,570 liters (2,000 gallons). The water in the cooling tower sumps is treated chemically with a biocide (Dearborn 702), a microbiocide (sodium hypochlorite), and a scale inhibitor (Dearborn 878). Scale formation is created by the increasing concentration of naturally occurring salts (typically calcium carbonate) resulting from the evaporation process of the cooling towers. The electrical conductivity of the water in the sumps is monitored and when the conductivity approaches 1,200 micromhos, automatic valves open to discharge water. This allows the addition of fresh water to lower the conductivity to approximately 900 micromhos. Fuel and Materials Examination Facility (FMEF) The FMEF has four routine contributors, three discharges from the FMEF cooling towers and one from the pressure relief valve drain to the process water supply system in the mechanical contributors, 36B system and the 36D system. The 36D system originally was intended to contain radioactive waste. However, with the change in mission for the FMEF, this system has not been used for its intended purpose. Waste water from the fire testing system and a lunchroom sink are the only discharges to the 36D system. Both systems contain two 22,712 liter tanks, the 36B system tanks are fiberglass and the 36D system tanks are stainless steel. Both systems have overflow systems and recirculating lines. The 36B system can discharge to either the process sewer or the 36D system. A computer automatically shifts valves to the other tank when one tank is full. At this time, a technician secures a sample from the full tank and the sample is analyzed as required in the sampling and analysis plan. With approval of the analysis results, 12,113 liters (maximum of the pumping system) are discharged to the process sewer. The 36D system operates similar to the 36B system except the contents only can be sent to the liquid waste loadout room. Presently, a fire hose is connected to the line in the liquid waste loadout room and the contents are sent to the barrel washer pad, which is connected to the process sewer. Each system would discharge no more than once every three months. The three cooling towers at the FMEF are identical to the cooling towers located at the FFTF and are operated under the same conditions. The same Dearborn chemicals are added to the water in the FFTF and FMEF cooling towers.

Maintenance and Storage Facility (MASF) The MASF has one routine contributor to the process sewer from the process equipment room air compressor. Two infrequent contributors are from the LDCV and bearing cooling water from mitigation pump test runs. These vessels currently are being used for the testing of new pumps. Water is added to the LDCV and discharged from the vessel to control the heat generated by the pumps. Testing occurs on an irregular basis, but no more frequently than once per month. The discharge to the Process Sewer is monitored for radioactive contamination by an online monitor. Should radiation be detected, a diversion valve opens to discharge the process sewer water into the MASF radioactive waste system. The Process Sewer is protected from cross-contamination by a check valve downstream of the diversion valve and by piping elevation differences. The radioactive liquid waste system is a gravity drain system located about 1.22 meters below the process sewer.

481-A Pumphouse The 481-A Pumphouse has one routine contributor associated with water pump packing leakage from the sanitary water pumps. The other drains have moats around the drains to prevent accidental discharge.

- Related Sites/ Structures:** Primarily, the site is associated with underground piping (known as the 4904 Process Sewer System), 4608-B Control Structure and Process Sewer Sampling Station, and two percolation ponds (4608-B and 4608-C).
- Waste Type:** Process Effluent
- Waste Description:** The process sewer, which empties into the process ponds, is for discharge of water from cooling systems and nonsanitary drains and sumps in the 400 Area facilities, including the Fast Flux Test Facility (FFTF). Water from the FFTF and FMEF cooling towers contains nonregulated quantities of algicides and other treatment chemicals, including a biocide (Dearborn 702), a microbiocide (sodium hypochlorite), and a softening agent (Dearborn 878). Chemicals used for secondary cooling water testing (Dearborn Code 550, 562, 595, 899, 904) are also present in unregulated quantities. Effluent flow varies from approximately (10 gallons per minute) in

winter months to approximately (50 gallons per minute) in peak summer months.

The following waste streams are produced from each of the listed processes.

Process Name	Waste Stream Name
1. FFTF Cooling Water	Cooling Water System
2. FMEF Cooling Water	Cooling Water System
3. FFTF Containment H & V	Moisture Condensate from Ambient Air
4. FMEF Containment H & V	Moisture Condensate from Ambient Air
5. Paint Shop Spray	Filter Water from H & V
6. MASF Large Diameter Cleaning Vessel	Pump Water for Testing of Mitigation Pump
7. MASF Bearing Cooling Water	Bearing Cooling Water from Pump Test Runs
8. FMEF Retention Water	System 36B
9. FMEF Waste System	System 36D

Notes:

The water used in the cooling towers is recycled through the system 2.5 times or until the conductivity reading has reached 1,200 umhos. The chemical containers for the cooling tower treatment are rinsed out and the rinsate is added to the cooling tower sump.

The FFTF and FMEF recycle lubricants offsite.

The total water usage at the site is 471,232.5 liters per day (124,500 gallons per day) (average) and 727,477 liters per day (192,200 gallons per day) (maximum). The water source is a Hanford Site well designated as a drinking water well (Well 499-S1-8J).

Code: 400 RFD	Classification: Not Accepted
Names: 400 RFD; 400 Area Retired French Drains	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:
Description: The sites cannot be positively described, although most french drains in the 400 area are 1.5 meter (5 foot) long, 1.2 meter (4 foot) diameter concrete or vitrified clay pipes filled with gravel.	
Location: The site(s) are purported to be located in various locations within the 400 area.	
Waste Type: Water	
Waste Description: The retired french drains received unknown amounts of water used during construction for washing components prior to installation. The combined hazardous chemical inventory for the drains reportedly includes 40 kilograms of sodium dichromate. Based on reviews of available technical information, this information has not been substantiated.	

Code: 400 RSP	Classification: Accepted
Names: 400 RSP; 400 Area Retired Sanitary Pond	Reclassification: Rejected (12/15/1998)
Type: Pond	Start Date: 1/1/1972
Status: Inactive	End Date: 1/1/1979
Description: This site was one component of a sanitary sewer system that supported the temporary facilities during construction of the FFTF. The site was a sanitary sewer pond that has been backfilled and is not visible. It currently appears as a vegetation-free, cobble-covered area. Originally, the site was 152 meters (500 feet) long and (152 meters) (500 feet) wide. Three square unlabeled manholes that provided access to the sanitary sewer pipelines (now abandoned in	

place) are located in the area and each manhole is adjacent to two 9 meter (3 foot) high metal posts.

Location: The site is located west of the 4706 building.

Related Sites/ Structures: The site was related to Portable Sanitary Sewage Treatment Plant (retired) (WIDS Site 400-9), sanitary sewer pipelines that remain in place, and retired septic tanks.

Waste Type: Sanitary Sewage

Waste Description: The unit received 45,420 liters (12,000 gallons) per day of aqueous wastes from a portable sanitary sewage treatment plant that was located several hundred feet away from the pond. Nonhazardous sludges were taken offsite for disposal while the plant and pond were operating.

Code: 400 RST	Classification: Accepted
Names: 400 RST; 400 Area Retired Septic Tanks	Reclassification: Rejected (1/27/1999)
Type: Septic Tank	Start Date: 1/1/1979
Status: Inactive	End Date: 1/1/1983

Description: Three septic tanks are shown on drawing H-4-152051 and are listed as inactive waste disposal units in the Hanford Site Waste Management Units Report. There are no signs to mark the septic tanks. Surface features in the locations indicated on the drawing include two steel manhole covers near the southeast portion of 4702. One lid was partially covered with gravel. It is bolted down in the center and has perforated holes around its perimeter. The second manhole cover is posted with a "Danger: Limited Access, Confined Space, Class II" sign. On the east side of the center wing of 4702 Building is a 0.6 meter (2 foot) square concrete pad with a white 10 centimeter (4 inch) diameter PVC vent pipe protruding from the center. On the west side of the 4702 Building is a steel manhole that is surrounded by four yellow posts. It is also posted with a Confined Space, Class II sign. South of this manhole (on the west side of 4702 Building) is another 0.6 meter (2 foot) square concrete pad with a white 10 centimeter (4 inch) diameter PVC vent pipe protruding from the center.

Location: The tanks are located on the south and west sides of the 4702 Building. The building is surrounded by vegetation-free, cobbles. Two tanks are on the south side of the building and one is on the west side near the northwest corner of 4702. The first tank is located approximately 40 feet (12.2 m) west of the southeast wing of the 4702 building. The second tank is located approximately 5 feet (1.5 m) east of the building's central wing. The third tank is located approximately 5.5 meters (18 feet) west of 4702 and east of the 4734-D building.

Waste Type: Sanitary Sewage

Waste Description: The units received unknown amounts of sanitary wastes from office buildings.

Code: 400 SBT	Classification: Not Accepted
Names: 400 SBT; Cooling Tower Overflow Trench; 400 Area Retired Sand Bottom Trench; 400 Area Sand Bottom Trench	Reclassification: None
Type: Trench	Start Date: 1/1/1979
Status: Inactive	End Date:

Description: A concrete-lined trench 61 meters (200 feet) long, 1 meter (3 feet) wide, and 0.3 meters (1 foot) deep, covered with steel grating. The site collects overflow water from the 483 Cooling Tower pad and directs it to the process sewer. There is no known contamination or postings at the site.

Location: The site is located north of the 483 Cooling Tower concrete pad running in an east to west

direction. BHI-00012, Rev. 00, Figure 4-34, 300-FF-2 Operable Unit Technical Baseline report, shows the cooling tower overflow trench approximately 0.9 meters (3 feet) from the building.

Related Sites/ Structures: The site is related to the 483 Cooling Towers and process sewer.

Waste Type: Water

Waste Description: The 400 Area Sand Bottom Trench reportedly received an unknown amount of non-hazardous cooling tower blowdown. Site personnel state that the Cooling Tower Overflow Trench continues to receive non hazardous blowdown, also known as secondary cooling water. Secondary cooling water contains non-regulated quantities of a biocide, a microbiocide, and a softening agent. Chemicals used for secondary cooling water testing are also present in non regulated quantities.

Code: 400 SS

Classification: Accepted

Names: 400 SS; 4608 Sanitary Sewer; 4608 SS; 400 Area Sanitary Sewer

Reclassification: Rejected (1/27/1999)

Type: Septic Tank

Start Date: 1/1/1983

Status: Inactive

End Date: 1/1/1998

Description: The unit is a septic tank with a 11,355 liter (3000 gallon) capacity. The surface features of the septic tank were two fiberglass manhole covers. One of the manhole covers was posted with a "Danger: Confined Space" sign. The area is covered by vegetation.

Location: The septic tank is located southwest of FMEF and the MO-353 office trailer, outside the security fence. The site is inside (east end) an area enclosed by a light weight post and chain. The chained area measures 30.5 by 36.6 meters (100 feet by 120 feet).

Process Description: The septic system was installed to service the mobile office trailers located south of FMEF, the Fuels and Materials Examination Facility (FMEF).

Related Sites/ Structures: The septic system was associated with Trailers MO-353, MO-378, MO-379, and MO-908.

Waste Type: Sanitary Sewage

Waste Description: Site personnel report the unit may have received waste from the T-100, T-101, T-102, T-103, T-104, T-105, T-106, T-107, T-108, and T-109 trailers. The tank received 2,839 liters (750 gallons) of sanitary waste each day. Effluent from this septic tank was discharged to the 4608 Sanitary Tile Field.

Closure Info: The tank was abandoned in June 1998. No samples were taken because the tank serviced only office trailers.

Code: 400 STF

Classification: Accepted

Names: 400 STF; 4608 Sanitary Tile Field; 4608 STF; 400 Area Sanitary Tile Field

Reclassification: Rejected (1/27/1999)

Type: Drain/Tile Field

Start Date: 1/1/1983

Status: Inactive

End Date: 1/1/1998

Description: The sanitary tile field is located within and at the west end of a vegetation-covered area that is bounded by steel posts and barricade chain. The 4608 Sanitary Sewer septic tank (400 SS) is on the east end of the chained area. The chained area is posted with a blue-and-white sign that

reads "No Vehicles--Septic Field." The tile field has no surface features.

Location: The tile field is located in the southwest corner of the 400 Area, outside the security fence. It is inside an area bounded by light weight post and chain that measures 30.5 meters (100 feet) by 36.6 meters (120 feet) .

Related Sites/ Structures: The tile field is associated with the 400 SS septic tank (WIDS Site 400 SS) and the office trailers MO-353, MO-378, MO-379, and MO-908. The mobile office trailers are now unoccupied.

Waste Type: Sanitary Sewage

Waste Description: The unit received liquid wastes from the 4608 Sanitary Sewer septic tank. Site personnel report the tank and tile field may have received wastes from the T-100, T-101, T-102, T-103, T-104, T-105, T-106, T-107, T-108, and T-109 trailers.

Code: 400-1

Classification: Accepted

Names: 400-1; 400-1 Dump Site

Reclassification: Rejected (12/15/1998)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is an area of soil mounds containing waste material. The mounds vary in content from backfill material (soil and rocks) to chunks of concrete, red volcanic landscaping rocks, metal piping, rebar, chunks of asphalt, and signs. The mounds are from 0.6 to 1.5 meters (2 to 5 feet) high. Some are partially covered with natural vegetation. The entire site is raised approximately 1.5 meters (5 feet) above the perimeter road that surrounds the 400 Area.

Location: The site is located near the northeast corner of the 400 Area, outside the perimeter fence. It is approximately 69 meters (228 feet) from the fence corner.

Waste Type: Construction Debris

Waste Description: The site contains piles of soil, concrete and rubble, a small amount of miscellaneous materials such as traffic markers and landscape rocks, and a few pieces of concrete asbestos board. Approximately 6 half 208 liter (half 55 gallon) drums (cut in half) are also present.

Code: 400-2

Classification: Not Accepted

Names: 400-2; Concrete Batch Plant

Reclassification: None

Type: Process Unit/Plant

Start Date: 1/1/1972

Status: Inactive

End Date:

Description: The site is a vegetation-free, cobble-covered area that is surrounded by a 2.4-meter (8-foot) high chain-link fence. A concrete building foundation is located at the southwest corner of the fenced area, with rebar and wooden supports protruding from its surface. Several material staging areas contained raw materials for the concrete production. They are open ended, concrete walled bins, located near the building foundation. There is a metal lined pit inside the fenced area that has been used to train employees to use fire extinguishing equipment.

Location: The site is located just north of the perimeter road that runs along the 400 Area's north side, and east of several railroad tracks.

Related Sites/ Structures: The site was associated with the construction of the FFTF.

Code: 400-3

Classification: Not Accepted

Names: 400-3; Miscellaneous Stream #732; 400 Area Drainage Trench; 400 Area Storm Drain Outfall Trench; 400 DT

Reclassification: None

Type: Trench

Status: Active

Description: This trench emerges just north of the perimeter road, at the northeast corner of the 400 Area, and travels north-northeast for approximately 90 meters (300 feet). The sides of the trench are covered with cobblestones, and the bottom is covered with cobblestones and sand. At its starting point near the perimeter road, the trench is 9 meters (30 feet) wide and 6 meters (20 feet) deep. There is no obvious end to the trench, as it narrows down and eventually becomes an area of disturbed vegetation.

Location: The trench is located west of the 400-1 dump site, at the northeast corner of the perimeter of the 400 Area..

Waste Type: Stormwater Runoff

Waste Description: Site personnel report that the unit receives storm runoff from various drains throughout the 400 Area. The Inventory of Miscellaneous Streams Report (DOE/RL-95-82) states this trench receives less than 0.038 liters per minute (0.01 gallons per minute) of stormwater runoff.

Code: 400-4

Classification: Accepted

Names: 400-4; Suspected Burial Ground (East of FFTF)

Reclassification: Rejected (12/3/1998)

Type: Burial Ground

Status: Inactive

Description: The site visit done in 1994 to support the 300-FF-2 Operable Unit Technical Baseline Report indicated the site appeared to possibly be a closed burial ground that had been covered with soil. Large mounds of soil are located on the north side of a flat area that measures approximately 30 by 15 meters (100 by 50 feet). The soil has been mounded approximately 3 to 6 meters (10 to 20 feet) above the surrounding terrain. Vegetation on the mound is sparse. In 1994, some waste, such as a glove and an electrical cable, were partially visible.

Location: The site is located northeast of the 400 Area.

Waste Type: Misc. Trash and Debris

Waste Description: A small amount of visible surface debris. A glove and an electric cable.

Code: 400-5

Classification: Accepted

Names: 400-5; Septic Tank or Cistern

Reclassification: Closed Out (12/3/1998)

Type: Septic Tank

Status: Inactive

Description: Prior to 1998, a concrete pipe emerged from the ground approximately 6 meters (20 feet) north of a building foundation. The pipe had an inside diameter of 0.6 meters (2 feet) and was loosely covered with a wooden cover. It dropped approximately 4.6 meters (15 feet) into a concrete or concrete-lined circular vault. On September 16, 1998, the site was backfilled with sand slurry. It is currently surrounded by "Caution" tape.

Location: The site is located north of the perimeter road that runs along the north side of the 400 Area, on the outside of the perimeter fence.

Process: The 300-FF-2 Technical Baseline report states the vault may have been a septic tank or cistern

Description: used in the 1970's during the construction phase of the 400 Area. The Limited Field Investigation Report indicates the adjacent building foundation may have been a testing laboratory for testing concrete cores. The small structure that is also located in this vicinity is assumed to have been a sample preparation and concrete curing room. Remnants of concrete cores were observed around the building foundation and the cistern. At the time the samples were taken, a hose was inside the tank that may have been used to pump out the contents when the operation was abandoned. The floor of the tank contained sand and animal nesting material.

Code: 400-6 **Classification:** Accepted

Names: 400-6; Material Dumping Area (North of FFTF); Material Dumping Area and Building Foundation **Reclassification:** Rejected (12/3/1998)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a building foundation, sidewalks, and construction and demolition debris. The concrete building found is approximately 23 meters (75 feet) long and 7.6 meters (25 feet) wide. A portion of the building remains standing. That portion is made of painted concrete blocks with a corrugated metal roof. The floor slopes to a centered drain. Lumber at the site indicates that the rest of the building may have been of wood construction.

Location: The site is located north of the perimeter road that runs along the north side of the 400 Area, outside the perimeter fence.

Process Description: During the 300-FF-2 Limited Field Investigation (1995), a closer inspection of the area determined the building foundation was a testing laboratory for concrete cores. The small structure is assumed to have been a sample preparation and concrete curing room. There are numerous remnants of concrete cores around the area.

Related Sites/Structures: A cistern or septic tank is located within this area, adjacent to the building foundation. It is listed in the WIDS Database as sitecode 400-5.

Waste Type: Construction Debris

Waste Description: Debris scattered randomly at the site includes glass, metal, bricks, and wood from the building; wooden pallets; chunks of concrete; metal scraps; concrete core samples; and other construction materials. Surplus concrete and asphalt were also poured in an area at the north end of the site.

Code: 400-7 **Classification:** Accepted

Names: 400-7; 4607 Sanitary Sewer; 4607 Sanitary Sewer Septic Tank; 4607 SS; 4607 SSST **Reclassification:** Rejected (1/27/1999)

Type: Septic Tank **Start Date:** 1/1/1978

Status: Inactive **End Date:** 1/1/1997

Description: The unit is surrounded by an 2.4 meter (8 foot) high chain-link fence that is topped with three strands of barbed wire. The gate is unlocked and open. The top of a concrete structure with six metal access hatches is located on the west side of the fenced area. The hatches are marked with "Confined Space" signs. The septic tank inlet, which appears to be a circular concrete tank, is located approximately 3 meters (10 feet) from the south end of the concrete structure, just outside of the fence. Hanford Drawing, H-4-38162, Civil Drawing Index Plot Plan, shows the various components of the system. They are the 4607 Septic Tank (WIDS Site 400-7, 4607 Leaching Field (WIDS Site 400-12), 4607 Sanitary Sewer Lagoon (WIDS Site 400-11). Note that this drawing shows the percolation ponds that belong to the process sewer system (WIDS

Site 400 PPSS).

Location: The septic tank is located north of the 400 Area perimeter road, outside the fence. It is just west of the access road to the 4608-B and C Percolation Ponds.

Related Sites/ Structures: The site is associated with underground lines, including the 4903 Sanitary Sewer Main, that runs throughout the 400 Area. The 4607 Sanitary Tile Field (WIDS Site 400-12) and the 4607 Sanitary Sewer Lagoon (WIDS Site 400-11) are also associated with this septic tank.

Waste Type: Sanitary Sewage

Waste Description: Site personnel report that this unit receives all sanitary wastes from 400 Area buildings except the wastes from a few trailers serviced by the 4608 Sanitary Sewer. The tank was designed to handle a flow rate of 230,000 liters per day (60,000 gallons per day). Reported flow rates include 23,000,000 liters per year (6,000,000 gallons per year), 57,000 liters per day) 15,000 gallons per day, 42,000 to 49,200 liters per day (11,000 to 13,000 gallons per day) of effluent, and 87,400 liters per day (23,100 gallons per day) of "influent and effluent." From 1978 to 1986, effluent was discharged through an underground 20 centimeter (8 inch) PVC pipe to the 4607 Sanitary Tile Field.

Code: 400-8

Classification: Accepted

Names: 400-8; Construction Material Dumping Area (North of FFTF)

Reclassification: Rejected (12/3/1998)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: Currently, the dumping area appears as a field that is a partially covered with vegetation and strewn with debris. The debris consists primarily of construction and demolition waste. There are no boundaries to clearly define the size of the dumping area.

Location: The site is located north of the perimeter road that runs along the 400 Area's north side. It is northwest of the 405 Reactor building.

Related Sites/ Structures: The site was associated with the construction of the FFTF.

Waste Type: Construction Debris

Waste Description: Material dumped at the site includes tires, concrete rubble, metal fencing, rebar, metal grating, sheet metal, piping, and metal scraps.

Code: 400-9

Classification: Accepted

Names: 400-9; 400 Area Retired Portable Sanitary Sewer Treatment Plant; 400 RPSSTP

Reclassification: Rejected (12/3/1998)

Type: Sanitary Sewer

Start Date: 1/1/1972

Status: Inactive

End Date: 1/1/1979

Description: The site was a temporary sanitary sewage treatment plant. There is no visible evidence from the surface of the underground lines that remain in place, the removed treatment plant, or the backfilled pond.

Location: The site is located just east of the 4701-C Guard Station site.

Related Sites/ Structures: 400 Area Retired Sanitary Pond and Underground Lines Associated with the 400 Area Retired Portable Sanitary Sewage Treatment Plant.

Waste Type: Sanitary Sewage

Waste Description: treatment plant was transferred through underground lines to the pond, which was located just west of the current 4706 Building site. An unknown amount of that effluent leaked from sanitary sewer manholes and the outfall prior to late 1975 or early 1976. Nonhazardous sludges from the treatment plant were hauled offsite for disposal.

Code: 400-10 **Classification:** Not Accepted

Names: 400-10; 453B Switch Gear Pad Stormwater; Injection Well #11; Miscellaneous Stream #26; 400 Area French Drain #11; 400 FD11 **Reclassification:** None

Type: French Drain **Start Date:** 1/1/1979

Status: Active **End Date:**

Description: The site is a french drain. The visible portion is a 38 centimeter (15 inch) tall metal pipe, 10 centimeters (4 inches) in diameter. On two sides are 20.32 centimeter (8 inch) tall metal bars that are connected by a cross member. The drain is surrounded by four 1.2 meter (4 foot) tall yellow steel posts and is in the middle of a gravel covered field. The pipe is capped with a metal plug that has a raised square on top.

Location: The drain is located approximately 52.4 meters (172 feet) south of the 408C West Dump Heat Exchanger (DHX), and (21.3 m) west of the 408B South Dump Heat Exchanger (DHX), and southeast of WIDS Site 400 FD5. This location is west of the 453B switch gear pad and south of the 402 Building.

Related Sites/ Structures: The site is related to the 453-B Switch Gear Pad.

Waste Type: Stormwater Runoff

Waste Description: The unit receives stormwater from the 453-B Switchgear Pad. The flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400-11 **Classification:** Accepted

Names: 400-11; 4607 Sanitary Sewer Lagoon; 4607 SSL; 400 Area Wetlands **Reclassification:** Rejected (1/27/1999)

Type: Pond **Start Date:** 1/1/1986

Status: Inactive **End Date:** 1/1/1996

Description: The site is a sanitary sewer lagoon that is currently dry. It has been backfilled and vegetated with grasses. The north and west sides are slightly depressed, but the south and east sides slope upward to the surrounding terrain. The adjacent terrain is covered with sagebrush and tumbleweeds. Signs are still present around the perimeter of the lagoon that state "Treated Sewage". Shortly after the 4607 Sanitary Sewer and the 4607 Sanitary Tile Field began operating in 1978, sanitary effluent began surfacing in the location of the drain field and overflowing into a natural depression nearby. In 1986, the drain field failed completely, causing effluent to overflow through a manhole and enter the depression through a drainage ditch. A valve pit diversion box was subsequently installed to divert the waste stream to the natural depression. It became known as the 4607 Sanitary Sewer Lagoon and the 400 Area Wetlands. The lagoon was deepened, a berm was constructed around it. The existing drainage ditch was backfilled.

Location: The lagoon is located northeast of the 4607 Sanitary Sewer septic tank (400-7) and southwest of the 4608-B and C Percolation Ponds (400 PPSS).

Related Sites/ Structures: The lagoon was associated with the 4607 Sanitary Sewer (WIDS Site 400-7), 4607 Sanitary

Tile Field (WIDS Site 400-12), and the 4903 Sanitary Sewer Main.

Waste Type: Sanitary Sewage

Waste Description: From 1986 to 1996, all sanitary effluent from the 4607 Sanitary Sewer has been discharged from the septic tank to the lagoon. Reported flow rates include 23,000,000 liters per year (6,000,000 gallons per year) in 1987, 57,000 liters per day (15,000 gallons per day) in 1989, 42,000 to 49,200 liters per day (11,000 gallons per day to 13,000 gallons per day) in 1992, and 87,400 liters per day (23,100 gallons per day) of influent and effluent in 1993. The theoretical combined evapotranspiration and percolation rate of the pond, based upon the 1993 flow rate is 187 liters per square meter per day (4.6 gallons per square foot per day).

Code: 400-12

Classification: Accepted

Names: 400-12; 4607 Sanitary Tile Field; 4607 STF; 4608A Leaching Field; 4608A Sanitary Sewer Leaching Field

Reclassification: Rejected (1/27/1999)

Type: Drain/Tile Field

Start Date: 1/1/1978

Status: Inactive

End Date: 1/1/1986

Description: There are no visible surface features to identify this tile field. The tile field consisted of perforated 10 centimeter (4 inch) diameter PVC pipe that discharged sanitary effluent by gravity. The pipe sloped 0.25 meters for every 30.5 meters (3 inches for every 100 feet) of length. The tile field was filled with 0.3 meters (3 feet) of gravel and was covered with "untreated building paper." Approximately 490 meters (1,600 feet) of PVC pipe connected the tile field with the 4607 Sanitary Sewer septic tank. Per Curt Clement, Dyncorp, the drain/tile field was abandoned in-place years ago when it originally failed. The tie-in has been plugged.

Location: The tile field was located north of the 400 area, outside the security fence and west of the fenced 400 Area Process Ponds.

Process Description: Effluent discharged from the septic tank through an underground PVC pipe to the 4607 Sanitary Tile Field. Numerous problems were encountered with the tile field. Septic tank effluent repeatedly surfaced in the area of the tile field and overflowed into a natural depression nearby (site code 400-11). In 1986, the drain field failed completely, causing effluent to overflow through a manhole and enter the depression through a drainage ditch. A valve pit diversion box was installed to permanently divert the waste stream to the depression.

Related Sites/Structures: The tile field is associated with the 4607 Sanitary Sewer (WIDS Site 400-7), 4607 Sanitary Sewer Lagoon (WIDS Site 400-11), and 4903 Sanitary Sewer Main.

Waste Type: Sanitary Sewage

Waste Description: The 4607 Sanitary Sewer received all sanitary wastes from 400 Area buildings except the wastes from a few trailers serviced by the 4608 Sanitary Sewer. Between 1978 and 1986, the tile field received liquid effluent from the 4607 Sanitary Sewer septic tank. The tank may have received effluent at a rate of 23,000,000 liters per year (6,000,000 gallons per year) in 1987, 57,000 liters per day (15,000 gallons per day) in 1989, 42,000 to 49,200 liters per day (11,000 to 13,000 gallons per day) in 1992, and 87,400 liters per day (23,100 gallons per day) in 1993.

Code: 400-13

Classification: Accepted

Names: 400-13; Waste Dumping Site (East of FFTF)

Reclassification: Rejected (12/15/1998)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a dumping area. Debris has been dumped in several areas, scattered over an area

occupying approximately 1.2 hectares (3 acres). One of the dumping areas was possibly fenced in the past, since two corners are framed by wooden posts with fallen fence rails and chicken-wire fencing.

Location: The site is located northeast of the 400 Area, on the east side of a dirt access road. The unit is accessible by a dirt road that begins at the northeast end of the Fast Flux Test Facility (FFTF) Visitor Center parking lot.

Related Sites/ Structures: The site is believed to be related to the construction of FFTF.

Waste Type: Misc. Trash and Debris

Waste Description: Tree limbs, bags of leaves, and other debris are scattered in several locations along the east side of the dirt access road. Additional areas further away from the road contain fire bricks, black rubber gloves, metal buckets, rusted tin cans, broken glass jars, electrical wiring, metal mesh screening, caulking guns, wood scraps, large chunks of building concrete, semi-circular wooden wall sections, and other waste materials.

Code: 400-14

Classification: Accepted

Names: 400-14; Burn Pit (East of FFTF)

Reclassification: Rejected (12/15/1998)

Type: Burn Pit

Start Date:

Status: Inactive

End Date:

Description: The 1994 site visit that supported the 300-FF-2 Technical Baseline Report stated the site was a large burn pit containing some visible, fire-scarred debris at the east end. Blown-in tumbleweeds were piled within the pit and some natural vegetation had begun to grow along the pit's walls. The unit's appearance indicated it has not been used for some time.

Location: The site is located northeast of the 400 Area, outside the facility fence. The pit is east and southeast of a waste dumping area (WIDS Site Code 400-13), and is southeast of a suspected burial ground (WIDS Site Code 400-4). The unit is accessible by a dirt road that begins at the northeast end of the Fast Flux Test Facility Visitor Center parking lot.

Waste Type: Misc. Trash and Debris

Waste Description: Fire-scarred metal mesh screening, rags, wood scraps, and fire bricks are visible within the pit, particularly at its east end.

Code: 400-15

Classification: Not Accepted

Names: 400-15; Diesel Fuel Tank Fitting Leak

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1994

Description: The site was a petroleum unplanned release, discovered during the removal of two fuel tanks 400-FS-40 and 400-FS-4. One tank held diesel fuel and one tank held unleaded gasoline.

Location: The release site is located in the southwest corner of the 400 Area Fire Station (4704-S) parking lot.

Process Description: The tanks served as unleaded gasoline and diesel fuel storage tanks for the 400 Area fire station. The tanks, which were installed in 1986, were double-wall fiberglass construction. Each had a capacity of 1,892.5 liters (500 gallons). Prior to excavation of the two tanks, a site check was performed, which did not reveal any evidence of surficial contamination. The general condition of the fueling station was clean and appeared to be well maintained. Excavation for removal of the tanks was initiated on 5/9/1994. Removal of the concrete pad

covering the tanks revealed hydrocarbon staining around both pump lines. No staining was evident above the tank structures. Inspection of the tanks after removal indicated that the integrity of both tanks was good. In addition, there was no indication from the tank wall surfaces or the soil directly around the tanks that leakage had occurred. Once the tanks were removed, soil samples were collected for laboratory analysis from the tank excavations, the spoils piles, and the soil around the pump piping. Excavation of the soil was initiated by the subcontractor who was removing the storage tanks. This excavation resulted in the removal of the contaminated soil at the site. The soil contamination found under the tanks and pump island were cleaned up and safely stored for later treatment. Soil samples were obtained and sent for independent laboratory analysis. The completion date for this activity was 5/25/1994. By August 1994, the 15.2 meter (50 foot) long and 9.1 meter (30 foot) wide tanks were removed. The excavation pit had been backfilled nearly to grade with clean soil and covered with gravel. All signs, barricades, and piles of soil had been removed.

Related Sites/ Structures: The site was related to tanks 400-FS-40 and 400-FS-41 and the 400-39 bioremediation pad.

Waste Type: Oil

Waste Description: Two empty underground tanks were unearthed and moved from this site on May 10, 1994. One of the tanks had held diesel fuel, and the other had held unleaded gasoline. The soil underneath was discovered to have been contaminated with fuel. Approximately, 400 cubic yards of contaminated soil was excavated and removed to a bioremediation pit. Maximum soil concentrations were 4,500 parts per million (milligrams per kilogram) and 660 parts per million (milligrams per kilogram) for diesel and gasoline respectively. The soil sampling results indicated that at a depth of (30 feet), gasoline concentration was less than 20 parts per million and the diesel concentration was less than 50 parts per million. These limits were below the regulatory limits of WAC 173-340. As a result, the hole was backfilled with clean soil.

Code: 400-16

Classification: Accepted

Names: 400-16; 4831 Flammable Storage Facility; 4831 FSF

Reclassification: Rejected (12/3/1998)

Type: Storage

Start Date:

Status: Inactive

End Date:

Description: The unit is a yellow, corrugated metal building and a fenced concrete pad to the south. The pad is 6.1 meters (20 feet) wide and 15.2 meters (50 feet) long, surrounded by a 1.8 meter (6 foot) high chain-link fence with a locked gate. The building is about 6.1 meters (20 feet) high, 6.1 meters (20 feet) wide, and 15.2 meters (50 feet) long. A walk-in door and a roll-up door, located on the south side of the building, allow access from the building to the fenced area.

Location: The building borders a portion of Texas Street's east end, and is south of the 4831 LHWSA.

Process Description: The building is used to store flammable or combustible products, including lubricants and alcohols.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: In 1994, signs indicated that the fenced area contains nonregulated empty drums, nonregulated waste, and used oil. No hazardous chemicals were stored on the outdoor pad. In 1998, all nonregulated waste containers were removed from the outdoor concrete pad. This pad is no longer used for nonregulated waste or empty containers. The building is used to store flammable or combustible products including lubricants and alcohols.

On 9/8/1998, the facility and nonregulated waste storage pad were walked down by Mr. T. A.

Dillhoff (FFTF Environmental Compliance Officer). There was some rust staining on the concrete pad, but no evidence of any chemical leakage

Code: 400-17 **Classification:** Accepted

Names: 400-17; Buried Construction Waste Area; Buried Construction Waste Area #1 **Reclassification:** Rejected (12/15/1998)

Type: Burial Ground **Start Date:** 1/1/1977

Status: Inactive **End Date:** 1/1/1979

Description: The site is a burial ground. The area shown on SK-4-81543 as a construction waste burial ground is partially covered by the 4843 Building and the 4843 Laydown Area. There is no visible evidence of a burial ground at this location. Areas surrounding the 4843 facilities appear as vegetation-free, gravel-covered fields.

Location: The site is located northwest of the 451-B Substation and FMEF. It is partially underneath the 4843 Building and the 4843 Laydown Area.

Related Sites/ Structures: The site is associated with the construction of the Fast Flux Test Facility (FFTF).

Waste Type: Construction Debris

Waste Description: Site employees report that construction wastes were buried in this unit from "about 1977" to "about 1979."

Code: 400-18 **Classification:** Accepted

Names: 400-18; Buried Construction Waste Area; Buried Construction Waste Area #2 **Reclassification:** Rejected (12/15/1998)

Type: Burial Ground **Start Date:** 1/1/1972

Status: Inactive **End Date:** 1/1/1974

Description: The site is a burial ground. The area shown on SK-4-81543 as a construction waste burial ground is partially covered by the 4831 Flammable Storage Facility. There is no visible evidence of a burial ground at this location. The area is now a vegetation-free, gravel-covered field.

Location: The site is located northeast of the 451-B Substations and FMEF. It is partially underneath the 4831 Flammable Storage Facility and the 4831 Laydown Hazardous Waste Storage Area (4831 LHWSA).

Related Sites/ Structures: The site is associated with the construction of the Fast Flux Test Facility (FFTF).

Waste Type: Construction Debris

Waste Description: Site employees report that construction wastes were buried in this unit from "about 1972" to "about 1974."

Code: 400-19 **Classification:** Accepted

Names: 400-19; 400-30; 440 Building 90-Day Waste Accumulation Area; Hazardous Waste Temporary Storage Facility **Reclassification:** Rejected (12/15/1998)

Type: Storage Pad (<90 day) **Start Date:** 1/1/1993

Status: Active

End Date:

Description: This facility consists of a tan-painted clearspan steel structure on a concrete pad. The structure's south, west, and north sides consist of steel siding, and its east side consists of 2.4 meter (8 feet) high metal chain-link fencing with two locked gates. It has a weather tight, zinc-coated steel roof with skylights and a full length roof vent. A 13 centimeter (5 inch) high and 15 centimeter (6 inch) wide concrete containment berm runs along the east side of the foundation. The facility's southeast corner is a fenced-off area, designated on drawings as a "Spill Cleanup Equipment Area," that is 3.0 meters (10 feet) long and 2.9 meters (9.67 feet) wide. Its concrete floor is raised about 15 centimeters (6 inches) from the building foundation. A section of this area is used to store clean empty drums for use as waste containers.

Location: The site is located south of the 4713-C Building and within the FFTF protected area fence.

Related Sites/ Structures: This unit replaced the 4831 LHWSA in December 1993.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The 4831 LHWSA was used to stage oils and other hazardous wastes, including solvents and ethylene glycol. Empty drums that had previously held cooling water treatment chemicals, such as the acutely hazardous Endcor 4690, were also staged at the site. The 440 HWTSE (WIDS Site Code 400-19) replaced the 4831 LHWSA as the 400 Area's less-than-90-day storage area for hazardous wastes. In August 1994, the main portion of the facility contained a white box, labeled "Spill Kit," along with wooden crates and metal cabinets. The "Spill Cleanup Equipment Area" contained several 208 liter (55 gallon) drums.

Code: 400-20

Classification: Not Accepted

Names: 400-20; Altitude Valve Pit T-58; Miscellaneous Stream #31

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site was listed as a french drain located under Altitude Valve Pit T-58. This site is the source location for WIDS Site 400 FD10. Stormwater runs into the drain at the bottom of the stairs and is routed to the french drain, 400 FD10.

Location: The Altitude Valve Pit T-58 is located beneath the 482-A Water Storage Tower.

Related Sites/ Structures: The site is associated with 482-A, Water Storage Tank T-58, and WIDS Site 400 FD10.

Code: 400-21

Classification: Not Accepted

Names: 400-21; Altitude Valve Pit T-87; Miscellaneous Stream #32

Reclassification: None

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site was listed as a french drain located under Altitude Valve Pit T-58. This site is the source location for WIDS Site 400 FD10A. Stormwater runs into the drain at the bottom of the stairs and is routed to the french drain, 400 FD10A.

Location: The Altitude Valve Pit T-87 is located beneath the 482-B Water Storage Tower.

Related Sites/ Structures: The site is associated with the 482-B Water Storage Tower, Water Storage Tank T-87, and WIDS Site 400 FD10A.

Code: 400-22 **Classification:** Not Accepted
Names: 400-22; Altitude Valve Pit T-330 French Drain; Miscellaneous Stream #30 **Reclassification:** None
Type: French Drain **Start Date:**
Status: Active **End Date:**
Description: The site was listed as a french drain located under Altitude Valve Pit T-330. No french drain exists at this location. The waste stream discharges directly to the process sewer. A drain was visually identified by opening the hatch cover and seeing a drain located in the southeast corner of the pit. Water was observed on the floor of the pit. The site is located within a confined space preventing further description of the site at the time of the inspection.
Location: The 482-C Water Storage Tower and the T-330 Altitude Valve Pit are located north of the 481-A building and west of the 4713-D building.
Related Sites/ Structures: The site is associated with the 482-C Water Storage Tower and the T-330 Water Storage Tank.

Code: 400-23 **Classification:** Accepted
Names: 400-23; 480-A Pump House French Drain; Miscellaneous Stream #34; Well Pump P-14 French Drain **Reclassification:** Rejected (12/3/1998)
Type: French Drain **Start Date:**
Status: Active **End Date:**
Description: The site is a square opening in the concrete floor of the 480-A Pumphouse. The site receives leakage from the P-14 Pump. An open 10.2 centimeters (4 inch) diameter pipe was observed at the bottom of the site. The site was dry at the time of the inspection.
Location: The 480-A pumphouse is located northeast of the 4713-C building, and northwest of the 437 building. The site is located inside the pumphouse.
Process Description: The 400 Area receives raw water from groundwater wells. Normally, Well 499-S1-8J is the active well that supplies raw water to the water storage tanks (T-330, T-87, T-58). Pump P-16 is associated with Well 499-S1-8J and by changing the valve positions, water can be pumped to any of the three water storage tanks. Groundwater wells, 499-SO-8 and 499-SO-7, and their associated pumps, P-14 and P-15 respectively, serve as backup water supply to the 400 Area.
Related Sites/ Structures: The site is associated with the 480-A Pumphouse, Well 499-SO-8, Pump P-14 and the Water Storage Tanks (T-330, T-87, and T-58). Pump P-16 is associated with WIDS Site Code 400-25, Pump P-15 is associated with WIDS Site Code 400-24, and Pump P-14 is associated with WIDS Site Code 400-23.
Waste Type: Water
Waste Description: The french drain receives pump packing leakage from the P-14 well pump. The normal flow rate is 0.038 liters per minute (0.01 gallons per minute).

Code: 400-24 **Classification:** Accepted
Names: 400-24; Miscellaneous Stream #35; Well Pump P-15 French Drain **Reclassification:** Rejected (12/3/1998)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a rectangular opening in the concrete floor of the 480-B Pumphouse. The site receives leakage from the P-15 Pump. An open 10.2 centimeter (4 inch) diameter pipe was observed at the bottom of the site. The site was dry at the time of the inspection.

Location: The site is located inside the 480-B Pumphouse. The 480-B is located northeast of the 437 Building.

Process Description: The 400 Area receives raw water from groundwater wells. Normally, Well 499-S1-8J is the active well that supplies raw water to the water storage tanks (T-330, T-87, T-58). Pump P-16 is associated with Well 499-S1-8J and by changing the valve positions, water can be pumped to any of the three water storage tanks. Groundwater wells, 499-SO-8 and 499-SO-7, and their associated pumps, P-14 and P-15 respectively, serve as backup water supply to the 400 Area. Pump P-16 is associated with WIDS Site Code 400-25, Pump P-15 is associated with WIDS Site Code 400-24, and Pump P-14 is associated with WIDS Site Code 400-23.

Related Sites/ Structures: The site is associated with the 480-B Pumphouse, Well 499-SO-7, Pump P-15 and the Water Storage Tanks (T-330, T-87, and T-58). Pump P-16 is associated with WIDS Site Code 400-25, Pump P-15 is associated with WIDS Site Code 400-24, and Pump P-14 is associated with WIDS Site Code 400-23.

Waste Type: Water

Waste Description: This french drain receives groundwater well water leakage from pump P-15. The flow rate for this french drain is less than 0.038 liters per minute (0.01 gallons per minute).

Code: 400-25

Classification: Accepted

Names: 400-25; Miscellaneous Stream #36; Well Pump P-16 French Drain

Reclassification: Rejected (12/3/1998)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is an active french drain constructed of concrete and covered with a steel lid. There is no known contamination at the site, and there were no postings. The site is actively receiving water. The water level in the french drain was 0.46 meters (1.5 feet) deep at the time of the inspection (10/5/1998).

Location: The french drain is located northwest of the 4713-D building and east of the P-16 Pump House.

Process Description: The 400 Area receives raw water from groundwater wells. Normally, Well 499-S1-8J is the active well that supplies raw water to the water storage tanks (T-330, T-87, T-58). Pump P-16 is associated with Well 499-S1-8J and by changing the valve positions, water can be pumped to any of the three water storage tanks. Groundwater wells, 499-SO-8 and 499-SO-7, and their associated pumps, P-14 and P-15 respectively, serve as backup water supply to the 400 Area.

Related Sites/ Structures: The site is associated with the 480-D Pumphouse, P-16 Pump, Well 499-S1-8J, and the Water Storage Tanks (T-330, T-87, T-58). Pump P-16 is associated with WIDS Site Code 400-25, Pump P-15 is associated with WIDS Site Code 400-24, and Pump P-14 is associated with WIDS Site Code 400-23.

Waste Type: Water

Waste Description: The french drain receives groundwater well pump packing leakage from the P-16 pump. The well is used to supply drinking and process water for the 400 Area. The flow rate is less than

0.038 liters per minute (0.01 gallons per minute).

Code: 400-26 **Classification:** Not Accepted
Names: 400-26; 451-A Substation and B/N Plant French Drain **Reclassification:** None
Type: French Drain **Start Date:** 1/1/1979
Status: Active **End Date:**
Description: This site consists of two drains located in the bottom of Electrical Manhole #1. These drains remove stormwater.
Location: Electrical Manhole #1 is located in the southeast corner of the 451 Substation.
Related Sites/Structures: The site is associated with the 451-A Substation and 400 Area B/N Plant.
Waste Type: Stormwater Runoff
Waste Description: This unit receives intermittent discharges of stormwater from the 451-A Substation and the 400 Area B/N plant. It has a normal flow rate of zero.

Code: 400-28 **Classification:** Not Accepted
Names: 400-28; FFTF Dichlorodifluoromethane Releases **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Active **End Date:**
Description: The sites are "fugitive airborne emissions" from eight centrifugal chiller units at the Fast Flux Test Facility (FFTF). These units are used to provide cooling for personnel and equipment. Each chiller unit contains up to 3,000 pounds of dichlorodifluoromethane.
Release Description: The refrigerant dichlorodifluoromethane, or R-12, has reportedly been released in airborne emissions from the eight chiller units at the Fast Flux Test Facility (FFTF). Approximately, 1000 pounds of refrigerant are released each year (Dahl -1991). In Fiscal Year 1998, the R-12 refrigerant in all eight chillers was replaced with R-134A, which is nonhazardous and non-ozone depleting.
Waste Type: Chemicals
Waste Description: The waste released was dichlorodifluoromethane, R-12, refrigerant. In Fiscal Year 1998, the R-12 refrigerant was replaced by R-134A. This information was reported by the FFTF Technical Point of Contact.

Code: 400-29 **Classification:** Not Accepted
Names: 400-29; FFTF PCB Containing Transformers **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The sites are the 19 electrical transformers within the Fast Flux Test Facility (FFTF) complex containing polychlorinated biphenyls (PCBs). All of the transformers are/were located within buildings or on the roof of buildings. Five of the transformers have been removed and disposed of in accordance with Toxic Substances Control Act (TSCA) regulations.
Location: All of the 19 transformers were located within the Fast Flux Test Facility (FFTF) Complex. 14

of the transformers remain in place at the FFTF Complex. 5 of the transformers have been removed.

Release Description: Past releases from the transformers "involved limited seepage from sample ports due to improperly installed fittings" (WHC-EP-0475-1). Additionally, some routine operations result in the release of small amounts of PCBs to the environment. The exact locations of the leakage are unknown, and it is unknown whether or not all 19 transformers were involved. WHC-EP-0475-1 states 0.0 pounds as the quantity of chemical released per year for these 19 transformers. All seepage and drips were cleaned up when discovered.

Waste Type: Oil

Waste Description: The waste is transformers containing polychlorinated biphenyl oils (Type is Askarel).

This Site has the Following SubSites:

Code: 400-29:1

Names: 400-29:1; Transformer X-5

Code: 400-29:2

Names: 400-29:2; Transformer X-6

Code: 400-29:3

Names: 400-29:3; Transformer X-7

Code: 400-29:4

Names: 400-29:4; Transformer X-9

Code: 400-29:5

Names: 400-29:5; Transformer X-10

Code: 400-29:6

Names: 400-29:6; Transformer X-11

Code: 400-29:7

Names: 400-29:7; Transformer X-12

Code: 400-29:8

Names: 400-29:8; Transformer X-13

Code: 400-29:9

Names: 400-29:9; Transformer X-14

Code: 400-29:10

Names: 400-29:10; Transformer X-25

Code: 400-29:11

Names: 400-29:11; Transformer X-26

Code: 400-29:12

Names: 400-29:12; Transformer X-28

Code: 400-29:13

Names: 400-29:13; Transformer X-29

Code: 400-29:14

Names: 400-29:14; Transformer X-30

Code: 400-29:15

Names: 400-29:15; Transformer X-59

Code: 400-29:16
Names: 400-29:16; Transformer X-98
Code: 400-29:17
Names: 400-29:17; Transformer X-100
Code: 400-29:18
Names: 400-29:18; Transformer X-101
Code: 400-29:19
Names: 400-29:19; Transformer X-117

Code: 400-29:1 **Classification:** Not Accepted
Names: 400-29:1; Transformer X-5 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer is located in Room 308 of the 4621E Building, 550 Level.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:2 **Classification:** Not Accepted
Names: 400-29:2; Transformer X-6 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer is located in Room 367 of the 4621W Building, 550 Level.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:3 **Classification:** Not Accepted
Names: 400-29:3; Transformer X-7 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer is located in Room 331 of the 4621E Building, 580 Level.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:4 **Classification:** Not Accepted
Names: 400-29:4; Transformer X-9 **Reclassification:** None
Type: Control Structure **Start Date:**

Status: Active

End Date:

Description: The transformer was located on the Roof of the 4621W Building, 580 Level. This transformer has been removed.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:5

Classification: Not Accepted

Names: 400-29:5; Transformer X-10

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer was located on the Roof of the 4621W Building, 580 Level. This transformer has been removed.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:6

Classification: Not Accepted

Names: 400-29:6; Transformer X-11

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located in Room 449 of the 491E Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:7

Classification: Not Accepted

Names: 400-29:7; Transformer X-12

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located in Room 452 of the 491W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:8

Classification: Not Accepted

Names: 400-29:8; Transformer X-13

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located in Room 457 of the 491W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:9

Classification: Not Accepted

Names: 400-29:9; Transformer X-14

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located on the Roof of the 4621W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:10

Classification: Not Accepted

Names: 400-29:10; Transformer X-25

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located on the Roof of the 4621W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:11

Classification: Not Accepted

Names: 400-29:11; Transformer X-26

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer is located on the Roof of the 4621W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:12

Classification: Not Accepted

Names: 400-29:12; Transformer X-28

Reclassification: None

Type: Control Structure

Start Date:

Status: Active

End Date:

Description: The transformer was located in Room 303 of the 4621E Building, 533 Level. This transformer has been removed.

The SubSite is Part Of:

Code: 400-29

Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:13 **Classification:** Not Accepted
Names: 400-29:13; Transformer X-29 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer was located in Room 365 of the 4621W Building, 550 Level. This transformer has been removed.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:14 **Classification:** Not Accepted
Names: 400-29:14; Transformer X-30 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer was located in Room 431 of the 491-W Building, 531 Level. This transformer has been removed.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:15 **Classification:** Not Accepted
Names: 400-29:15; Transformer X-59 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer is located in Room 457 of the 491W Building, 580 Level.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:16 **Classification:** Not Accepted
Names: 400-29:16; Transformer X-98 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Active **End Date:**
Description: The transformer is located in Room 457 of the 491W Building, 550 Level.

The SubSite is Part Of:

Code: 400-29
Names: 400-29; FFTF PCB Containing Transformers

Code: 400-29:17 **Classification:** Not Accepted

batch transfers from FFTF by way of transfer lines connecting the two facilities. The sodium will be stored in the SSF until transferred to the Sodium Reaction Facility (SRF) for treatment.

Related Sites/ Structures: The facility is related to the Fast Flux Test Facility (FFTF) and will be related to the Sodium Reaction Facility (SRF), not yet constructed.

Code: 400-32 **Classification:** Accepted
Names: 400-32; Construction Dry Well; U.G. Drywell - North **Reclassification:** Rejected (12/3/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site is a large gravel filled excavation that is labeled on drawing H-4-152051 as "U.G. Drywell". The drywell is a subsurface structure and is not visible at the surface.
Location: The site is located west of the 483 Building.
Related Sites/ Structures: The site was associated with the construction of the Fast Flux Test Facility (FFTF).
Waste Type: Water
Waste Description: The gravel filled excavation was used to dispose of water that collected in the bottom of the 400 Area foundation excavations during construction.

Code: 400-33 **Classification:** Accepted
Names: 400-33; Construction Dry Well; U.G. Drywell - South **Reclassification:** Rejected (12/3/1998)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site is a large gravel filled excavation that is labeled on drawing H-4-152051 as "U.G. Drywell". The dry well is a subsurface structure and is not visible at the surface.
Location: The site is located west of the 408-C Building.
Related Sites/ Structures: The site is associated with the construction of the Fast Flux Test Facility (FFTF).
Waste Type: Water
Waste Description: The gravel filled excavation was used to dispose of water that collected in the bottom of the 400 Area foundation excavations during construction

Code: 400-34 **Classification:** Not Accepted
Names: 400-34; Miscellaneous Stream #733; Northwest Surface Water Drainage Ditch **Reclassification:** None
Type: Ditch **Start Date:** 1/1/1982
Status: Inactive **End Date:**
Description: A surface water drainage system made of a series of ditches and culverts is shown on drawing H-4-155518 and on H-4-150029. The ditch is shown to be northwest of the 437 building, measuring approximately 700 feet in length and exiting the northwest corner of the 400 Area. It

was determined that this drainage ditch was never constructed.

Location: The ditch was supposed to be located outside of the northwest corner of the 400 Area perimeter fence.

Code: 400-35 **Classification:** Not Accepted

Names: 400-35; Miscellaneous Stream #734; Southwest Surface Water Drainage Ditch **Reclassification:** None

Type: Ditch **Start Date:** 1/1/1982

Status: Active **End Date:**

Description: A surface water drainage system exits the southwest section of the 400 Area. This system collects surface water runoff from the area west of the Reactor Area. The system is a series of underground culverts and exposed, cobble ditches. It measures approximately 2750 feet in length. It exits the southwest corner of the reactor, area near the 4790 Patrol Headquarters building, as an underground pipeline. It turns south for approximately 229 meters (750 feet) along Grant Ave. It exists the security fence and runs along the FMEF parking area. It then turns to the west along Alabama Blvd. until it reaches the desert southwest of 400 Area.

Location: This drainage system is located partly inside and partly outside the southwest section of the 400 Area.

Waste Type: Stormwater Runoff

Waste Description: The unit collects storm water runoff from the west section of the 400 Area Reactor Area.

Code: 400-39 **Classification:** Accepted

Names: 400-39; 400 Area Bioremediation Pad; 400 Area Soil Cell **Reclassification:** Rejected (11/22/2004)

Type: Surface Impoundment **Start Date:** 1/1/1994

Status: Inactive **End Date:**

Description: The site is a bermed, mound of soil with a visible plastic liner. It is marked with a sign that says Keep Out- Petroleum Contaminated Soil.

Location: The site is located east of the 4704-S building.

Process Description: Remediation of the soil from the diesel tank leak (see sitecode 400-15) was accomplished using aeration/bioremediation in accordance with the June 21, 1994 letter provided by the State of Washington Department of Ecology (Ecology). The contaminated soil was placed in a plastic lined, bermed bioremediation pit, located 61 meters (200 feet) west of the tank excavation site. Fertilizer, water, and bacteria were added to the soil. More fertilizer and water were added daily, and the soil was tilled under for aeration. The bioremediation process was estimated to take 45 to 90 days.

Waste Type: Oil

Waste Description: The bioremediation pad contains petroleum contaminated soil that was found when the fire station fuel tanks 400-FS-40 and 400-FS-41 were removed (see sitecode 400-15).

Code: 400-40 **Classification:** Accepted

Names: 400-40; 403 Building Fuel Storage Facility **Reclassification:** None

(FSF); 4718 ISA; 400 Area Interim Storage Area (ISA); 400 Area Waste Management Unit

Type: Storage

Start Date:

Status: Active

End Date:

Description: The 400 Area Waste Management Unit consists of two parts. The Fuel Storage Facility (FSF) is a one level reinforced concrete substructure covered by a steel frame, metal sided high bay building. The 400 Area Interim Storage Area (ISA) is a 156 by 75 meter (513 by 247 foot) fenced area with perimeter lighting.

Location: The two parts of the 400 Area Waste Management Unit are located in the northeast portion of the 400 Area. Both are north and east of the reactor building.

Process Description: The 403 Fuel Storage Facility (FSF) is capable of storing various types of mixed waste, but as of the effective date of the Part A Permit, only two steel boxes containing sodium contaminated Core Component Pots (CPP) are stored in the 403 FSF. The concrete pad in the fenced Interim Storage Area had been used for dry cask storage, but will not necessarily be used for storing additional mixed waste management.

This Site has the Following SubSites:

Code: 400-40:1

Names: 400-40:1; 403 Building Fuel Storage Facility

Code: 400-40:2

Names: 400-40:2; 400 Area Interim Storage Area (ISA)

Code: 400-40:1

Classification: Discovery

Names: 400-40:1; 403 Building Fuel Storage Facility

Reclassification: None

Type: Storage

Start Date:

Status: Active

End Date:

Description: The Fuel Storage Facility (FSF) is a one level reinforced concrete substructure covered by a steel frame, metal sided high bay building.

The SubSite is Part Of:

Code: 400-40

Names: 400-40; 403 Building Fuel Storage Facility (FSF); 4718 ISA; 400 Area Interim Storage Area (ISA); 400 Area Waste Management Unit

Code: 400-40:2

Classification: Discovery

Names: 400-40:2; 400 Area Interim Storage Area (ISA)

Reclassification: None

Type: Storage

Start Date:

Status: Active

End Date:

Description: The 400 Area Interim Storage Area (ISA) is a 156 by 75 meter (513 by 247 foot) fenced area with perimeter lighting.

The SubSite is Part Of:

Code: 400-40

Names: 400-40; 403 Building Fuel Storage Facility (FSF); 4718 ISA; 400 Area Interim Storage Area (ISA); 400 Area Waste Management Unit

Code: 403 FD **Classification:** Accepted

Names: 403 FD; 403 French Drain; Discharge Point from the 403 Building; Miscellaneous Stream #37; 400 Area Drain Discharge from 403; 400 Area French Drain Discharge from 403 **Reclassification:** Rejected (12/15/1998)

Type: Injection/Reverse Well **Start Date:** 1/1/1979

Status: Active **End Date:**

Description: Previously, this discharge point was mistakenly described as a french drain. A 1996 site visit has confirmed that the discharge point is a pipe exiting the northeast side of the 403 Building. The effluent follows an asphalt trough to a drain in the pavement. The pavement drain is part of the 400 Area Stormwater Collection System (reference H-4-38972 and H-4-158520).

Location: The site is located on the east side of the 403 Building, just south of the northeast corner.

Process Description: Heating, Ventilation, and Air Conditioning (HVAC) condensate and other liquids flow to a sump inside the 403 building. A sump pump pumps the liquid through the pipe that exits the building.

Related Sites/ Structures: The site is related to the 403 Building and the 400 Area

Waste Type: Water

Waste Description: The unit may receive, or may have received air washer blowdown, Heating, Ventilation, and Air Conditioning (HVAC) system condensate, and stormwater from the 403 building, as well as janitorial solutions of water and detergents. The site has been removed from the active list of the "Inventory of Miscellaneous Streams", Revision 3, because the site does not discharge to an engineered disposal unit. The site is part of the 400 Area Stormwater Collection System.

Code: 427 HWSA **Classification:** Accepted

Names: 427 HWSA; 427 Building Fuel Cycle Plant Hazardous Waste Storage Area; 427 Building Fuels and Materials Exam. Facility HWSA **Reclassification:** Closed Out (12/3/1998)

Type: Satellite Accumulation Area **Start Date:** 1/1/1985

Status: Inactive **End Date:**

Description: Currently, the site described as the active Reusable Oil and Empty Drum Storage Area appears as a concrete pad approximately 9.1 meters (30 feet) long and 4.6 meters (15 feet) wide surrounded by a 2.1 meter (7 foot) high chain link fence with a locked gate.

Location: The site was located north of the 427 Building and 4.6 meters (15 feet) inside the Fuels and Materials Examination Facility (FMEF) perimeter fence.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The FMEF hazardous waste engineer indicates the Reusable Oil and Empty Drum Staging Area is used to stage containers of oils and lubricants, as well as empty drums. One report describes the 427 HWSA as a staging area for oils and lubricants. That description fits the Reusable Oil and Empty Drum Staging Area. However, another report states that the 427 HWSA was used as a staging area for ethylene glycol and ammonium hydroxide.

Code: 437 MASF **Classification:** Accepted

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility **Reclassification:** Closed Out (9/11/2003)

Type: Maintenance Shop **Start Date:** 1/1/1982

Status: Active **End Date:**

Description: MASF consists of a main building and a two-story service wing. It is a large concrete and rust-colored corrugated metal siding building (See photo #2). DOE/RL-88-21 shows the Dangerous Waste Permit Application was Closed on 9/11/2003.

Main Building

The above grade portion of the main building is constructed of structural steel shapes. The first 3.05 meters (10 feet) elevation of the above grade exterior walls is made of 30.5 centimeters (12 inch) thick precast concrete panels containing 10.2 centimeters (4 inches) of sandwiched insulation. The remaining exterior walls above the 3.05 meter (10 foot) elevation are steel panels. Roof construction is a factory Mutual Class 1 rated insulated metal deck. The building substructure, including all the below grade cells, is concrete.

The building is designed and constructed to seismic Zone 2 requirements and wind pressure of 25 pounds per square foot.

The concrete lower exterior building wall panels were established by designed to maintain external radiation levels less than 0.2 mrem/h in accordance with DOE Standards for Radiation Protection (Chapter XI of DOE Order 5480.1).

The main building is divided equally into high and low bay sections with heights of 32 meters (105 feet) and 14.9 meters (49 feet). The entire area within the facility is serviced by a 60 ton overhead bridge crane with a 10 ton auxiliary hoist. The high bay section is serviced by a 200 ton overhead bridge crane with a 25 ton auxiliary hoist and includes repair/maintenance floor space and six below grade shielded cells for specialized storage, sodium cleaning, and maintenance services. The high bay also includes a Cask Decontamination and Maintenance Facility (CDMF) to clean and reconfigure the T-3 Shipping Casks. The low bay section includes storage, staging floor space, and the Decontamination Areas I and II shielded enclosure for low level decontamination of small tools, components, and miscellaneous equipment. The low bay also includes a Contaminated Equipment Repair Shop (CERS) for repair of decontaminated Interim Examination and Maintenance (IEM) Cell components. A 10 ton monorail hoist in the low bay supports the Decontamination Areas for handling components/equipment transported to and from the Decontamination Areas. A Shielded Cell Transfer Cask (SCTC), the SCTC air bearing carriage assembly, and the associated support structure are used for equipment transfers into and out of Decontamination Areas through the 1.01 meter (40 inch) diameter ceiling port.

Crane controls for the 200 ton crane, the 60 ton crane and the 10 ton monorail are from individual manual pendants. Protective interlocks are incorporated into the crane control circuits to prevent interference of the 200 ton, 60 ton crane, or the 10 ton hoist.

The two story service wing is physically separated from the main building by a concrete/concrete block structural wall, fire wall, and shield wall. The process equipment room, process control room, personnel support areas, health physics office, and main lobby are located on the first floor of the service wing. Personnel support areas include the monitoring room, clothing issue, change rooms, and lavatories. Two 18,925 liters (5,000 gallon) stainless steel radioactive waste storage tanks are located in a concrete shielded cell beneath the process equipment room.

Service Wing

The second floor of the service wing includes the mechanical equipment room, office space, and lunch/conference room. The mechanical equipment room contains the heating, ventilating, and air conditioning (HVAC) equipment including the air handling unit, return air fan, return air HEPA filters, and the energy recovery unit.

The loadout facility, attached to the west end of the service wing is a concrete shielded enclosure that is physically separated from the service wing by a concrete shield wall. The loadout facility is used for the transfer of radioactive liquid waste from the radioactive waste storage tanks to Hanford Site tank cars for transportation to the site disposal facilities.

Support Services

A railroad spur comes from the FFTF west track and extends through the main building, terminating at the north end of the building. A second railroad spur is provided from the loadout facility to the FFTF main track north of the MASF.

Separate water supply lines are installed from the 400 Area water system to the building to provide both fire and sanitary water services. All post indicator valves in the fire water supply piping are supervised circuit valves.

A 13.8 kV underground feeder and duct bank is installed from Substation 451-B to the MASF outdoor substation transformer which provides a 480/277-V, 3-phase, 4-W, 60 Hz building electrical service.

Low voltage drawout switchgear is used for distribution and control of building power. Each power circuit breaker has a solid state tripping device for either delayed, instantaneous, or ground fault tripping characteristics. Motor loads are fed from a motor control center. Lighting, receptacles, and other loads are fed from panelboards.

The facility is surrounded by a grounding grid. All building steel and equipment are connected to the grid. The instrumentation system uses a separate analog system that ties directly into the FFTF analog ground grid.

The MASF has a lightning protection system.

Sanitary water and fire protection water are supplied from separate mains to the building. A reduced pressure backflow preventer assembly is installed between the sanitary water and process water systems to protect the sanitary water supply.

The sanitary sewer collects effluent waste from the sanitary fixtures and floor drains in the personnel support areas. The process sewer collects nonradioactive liquid from all areas of the facility. The primary source of nonradioactive water discharged to the process sewer is the sodium removal system.

All contaminated liquid waste in the facility is discharged into radioactive liquid waste tanks. The stored radioactive liquid waste is transferred to a railroad tank car in the loadout facility for disposal.

The Heating, Ventilation and Air Conditioning (HVAC) System supports all areas of the facility. The direction of air flow, pressure differentials and duct arrangement minimize the potential spread of contamination or the accumulation of inert gas, and potentially contaminated areas are maintained negative with respect to the outside atmosphere.

The MASF HVAC System consists of a supply air system, a return air system, and an exhaust air system. All recirculated air or exhaust air from the facility passes through a bank of HEPA filters, and the filtered air is isokinetically sampled and continuously monitored for radioactive contamination

- Location:** The site is located in the northeast corner of the 400 Area, 152 meters (500 feet) north of the Fast Flux Test Facility (FFTF) complex, and west of the railroad track serving the FFTF Reactor Containment Building.
- Process Description:** MASF is a multipurpose service center that supports the specialized maintenance and storage requirements of the 400 Area facilities. MASF provides the capability for sodium film removal, decontamination, repair, and storage of nonfuel components and hardware for the Fast Flux Test Facility (FFTF), Fuel Storage Facility and other major 400 Area facilities. Work in the MASF includes handling items that are radioactive due to neutron activation and items that are contaminated with pyrophoric sodium metal (liquid). Transuranic materials, in the form of fuel, are not permitted in the building.

- Waste Type:** Chemicals
- Waste Description:** The chemicals to be handled in MASF are of a typical industrial nature. These include organic acids for decontamination and caustic solutions and inorganic acids for regenerating demineralizer resins. The chemicals will be handled in fume hoods and areas appropriately vented and exhausted through a scrubber, demister, dryer and HEPA filters. Caustic rinse water from sodium cleaning operations will be present in the sodium cleaning vessels and piping systems.

- Waste Type:** Process Effluent
- Waste Description:** This facility is currently being used for the decontamination of radioactive and/or sodium contaminated FFTF equipment, the repair of contaminated manipulators from the FFTF Reactor Containment Building, the staging of large pieces of equipment to be stored, repaired, or tested; and the temporary storage of low level radioactive solid and liquid wastes prior to shipment.

Radioactive liquids are generated in the sodium cleaning vessel operation and Decontamination Areas. All radioactive liquids from the cleaning vessels and Decontamination Areas discharge into the radioactive waste tanks. The radioactive liquid in the tank(s) can be transferred to a liquid waste tank car in the shielded loadout facility for disposal. The capability to transfer radioactive liquids from the cleaning vessels directly to the tank car is also provided. All liquid can be discharged from the tank car through a filter to remove radioactive particles. To minimize the potential for spillage during loadout, overflow lines are provided from the tank car to the radioactive waste tanks. In the event of spillage, a collection basin in the floor also drains back to the waste tanks. The loadout facility is isolated during filling operations to minimize personnel exposure. Personnel exits are located at the north and south ends of the facility for rapid egress if required. The facility is maintained at a negative pressure with respect to the atmosphere to prohibit any inadvertent release of contaminants to the environs.

Components or equipment containing a sodium film or small residual deposits of sodium can be transported to MASF for disposition. All sodium wetted components can be handled in inerted casks or containers and stored in inerted vessels in below grade cells. All sodium wetted components can be cleaned prior to repair/maintenance or other disposition.

This Site has the Following SubSites:

- Code:** 437 MASF:1
Names: 437 MASF:1; HVAC
- Code:** 437 MASF:2
Names: 437 MASF:2; Protective Systems

switchover from the operating to the idle pump is provided in the event of pump or system malfunction. Suitable interlocks prevent the simultaneous operation of heating and cooling systems. Self-contained HEPA filters, with prefilters, are installed as close as practical to the source of potential contaminants to minimize contamination of duct work. HEPA filters are tested at HEHF prior to installation, in place prior to system operation, and at least every two years thereafter. The HEPA filters are installed as single units or manifolded in filter banks and can be changed out as individual units without shutting down the HVAC System. Differential pressure gages are installed across HEPA filters to indicate filter loading. High differential pressure alarms are located on the HVAC control panel for all HEPA filters in the facility, except the CDMF filters. The HVAC air flow control panel and temperature control panel are located in the mechanical equipment room. The HVAC air flow control system can be operated in a manual or automatic mode. The temperature control system operates in the automatic mode. Any off-normal condition will alarm at the HVAC control panel and the process control room panel. All potentially contaminated areas are maintained at a negative pressure with respect to the environment and with respect to adjacent less contaminated areas to minimize the spread of potential contamination. Low range, high sensitivity differential pressure instrumentation provides indication and annunciation to the HVAC control panel, for those areas where contamination potential is greater. In addition, local alarm and indication are provided for those areas of greatest potential for contamination. Smoke detectors are installed in the HVAC return and in selected exhaust ducts upstream from HEPA filters, and these initiate an alarm at the fire alarm control panel (FACP) if smoke is detected in the HVAC exhaust or return ducts. In the event of a smoke/fire alarm, the supply fan automatically shuts down. The return air recirculation damper to AH-I closes, and the return air is exhausted from the building. Both the return and exhaust fans will continue to operate to exhaust smoke from the facility. An indicated radiation level above a preset limit in the return or exhaust duct isokinetic sampling and radiation monitoring system will initiate a visible and audible alarm in the process control room to alert personnel to the off normal condition. An assessment of the cause of the alert alarm condition will be made to determine the need and nature of the required corrective action. In the event that the indicated radiation levels in either the return or exhaust duct exceeds the preset high-alarm limit, the HVAC system supply, return and exhaust fans and dampers will automatically shut down (regardless of smoke/fire alarm conditions) to preclude any potential release of radioactive contamination to the environment or dispersal of contaminants to other areas of the facility. The isokinetic sampling monitor alarm setpoints are established in accordance with applicable requirements. The isokinetic radiation monitoring panel is located in the mechanical equipment room, adjacent to the HVAC control panels.

The SubSite is Part Of:

Code: 437 MASF

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility

Code: 437 MASF:2

Classification: Accepted

Names: 437 MASF:2; Protective Systems

Reclassification: Closed Out (9/11/2003)

Type: Maintenance Shop

Start Date:

Status: Active

End Date:

Description: Instrumentation and Control System The instrumentation control system (ICS) provides integrated control and instrumentation for the process system. The sodium removal, nitrogen, steam, contaminated waste, process water, process sewer, and demineralized water are subsystems of this system. Selected process system components located in administratively controlled areas are monitored and controlled in the process control room. The process control panel has visible and audible alarm annunciators. The process control operator takes corrective action for alarm conditions. For key parameters, backup automatic action is initiated if the operator fails to respond to the alarm condition. Alarm windows are grouped by systems to aid

the operator in quickly identifying the problem and facilitating corrective action. **Fire Protection System** The MASF fire protection system is designed in accordance with Fire Zone 3, Type II N requirements of the Uniform Building Code. The repair and storage area is classified as a Group B, Division 4 occupancy and the two-story service wing as a Group B, Division 2 occupancy. The wet pipe sprinkler system and fire detection/alarm system are designed and installed in accordance with National Fire Protection Association (NFPA) requirements, for ordinary hazard, Group 2 occupancy. All equipment and devices have the Factory Mutual Engineering Corporation approval or are listed for the use intended by the Underwriters Laboratory, Inc. Fire protection system alarm devices are zoned and arranged to provide a local fire alarm and fire zone identification at the fire alarm control panel (FACP). HVAC duct smoke detectors initiate an alarm at the FACP in the event of smoke detection. All FACP alarms are transmitted directly to the Hanford Site central fire station. The system also detects any trouble condition such as an inoperative alarm circuit, a closed post indicator valve or a normal power failure and transmits a trouble signal to the FACP and the central fire station. Hose stations are installed in the repair and storage area in accordance with NFPA requirements. **Radiation Monitoring System** A radiation monitoring system provides radiation surveillance throughout the facility and alarms in the event of above normal radiation levels. The radiation monitoring system consists of remote area monitors, continuous air monitors, and fixed room air samplers. All liquid and gaseous effluents are monitored to prevent releases of radioactivity to the environment. The local area gamma-radiation monitors visibly and audibly alarm locally and process radiation monitors alarm in the process control room in the event that radiation levels exceed pre-established radiation limits. Hand and shoe counters are installed at all established exits from potentially contaminated areas to control the possible spread of contamination to other building areas. **Oxygen-Deficient Atmosphere** The principal inert gas present in the MASF is nitrogen, although an argon inerted component cask or container may be shipped to MASF providing the possibility that argon gas could also be present in the facility. Oxygen deficiency monitors are located in confined areas such as the mechanical service tunnel, Large Diameter Cleaning Vessel (LDCV) cell, test cell, Decontamination Areas I and II, and all stairwells where an oxygen deficient atmosphere might occur. The monitors provide an audible and visible alarm. HVAC supply and exhaust ducting is arranged to ensure maximum circulation to prevent the accumulation of nitrogen or argon gas in confined areas. **Breathing Air System Alarms** Visible and audible alarms are provided at each breathing air station to indicate low air pressure and compressor trouble. The process control room has audible and visual alarms for low pressure, high compressor temperature and loss of alarm power. **Door Annunciators** Limit switches are located at all exterior personnel doors, with the exception of the main lobby door and the process equipment room personnel door. The limit switches indicate that a door is opened and that the contamination control boundary may have been compromised. The limit switches initiate a visible and audible alarm in the process control room. **Emergency Lighting** Battery powered emergency lights are strategically located throughout facility and in all stairwells and at exits to permit safe egress from the building in the event of a power failure.

The SubSite is Part Of:

Code: 437 MASF

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility

Code: 437 MASF:3

Classification: Accepted

Names: 437 MASF:3; Decontamination Areas

Reclassification: Closed Out (9/11/2003)

Type: Maintenance Shop

Start Date:

Status: Active

End Date:

Description: Decontamination Areas I and II The Decontamination Area shielded enclosure in the main building contains two separate shielded areas, Decontamination Area I and Decontamination

Area II. Surface contaminated articles such as tools, small valves, and mechanical components are cleaned and packaged for storage, disposal, or repair. A 5 ton monorail is provided for material handling in the Decontamination Areas. Operation of the 5 ton monorail in both Decontamination Areas is by radio control. Decontamination Area I is used for semi-remote or spray cleaning and hands-on spray cleaning of contaminated equipment using hot or cold water, steam, and suitable detergents. Two shield windows are installed in the Decontamination Area I shield walls. Work stations, which include all penetrations necessary for the semi-remote spray cleaning of equipment, are provided at each window location. Access to Area I is through a 1.01 meter (40 inch) diameter port in the ceiling via the Shielded Cell Transfer Cask (SCTC). A 1 ton jib crane and electric hoist are provided on the west wall of Decontamination Area I to relocate equipment to a position clear of the 1.01 meter (40 inch) ceiling port, allowing "turn key" operation. A door from Area II to Area I allows equipment and personnel access. Interim Examination and Maintenance (IEM) Cell equipment transfers to and from Decontamination Area I are accomplished using the SCTC, the SCTC Air Bearing Carriage Assembly, and the associated support structure located outside and over the Decontamination Area I cell. The SCTC consists of a shielded cask, an 8 ton hoist and cover assembly, a gas system for cask inerting and purging, and a closure valve. The SCTC is lifted by an overhead crane from the Maintenance Equipment Transport System to the Air Bearing Carriage Assembly and then moved via the carriage to a position over the Decontamination Area I 1.01 meter (40 inch) diameter ceiling port. The carriage is a platform with four air cushion pads and a control system for the air pads. To support the carriage and the SCTC, a support structure is provided that contains support beams between the overhead crane access area and the Decontamination Area I ceiling port. Area I shielding limits all adjacent areas to the design radiation level of 0.2 mrem/h for a maximum 10 R/h point source deposited on the surface of equipment. This point source approximates a 1 curie cobalt-60 equivalent activity deposit which is the maximum projected source to be handled in Decontamination Area I. Decontamination Area II provides the necessary services for hands-on cleaning and maintenance operations of small mildly contaminated parts. A 1.01 meter (40 inch) diameter ceiling port is provided in the ceiling to permit transfer of contaminated articles from the IEM Cell transfer container into Decontamination Area II. This area has a large ultrasonic cleaner, a sink with fume hood, worktable, safety shower, a solid waste compactor, service sink, and floor space for repair, packaging, and unpackaging components. The ultrasonic cleaning tank, worktable, and solid waste compactor are equipped with fume hoods. Hood exhausts discharge into the Area II HVAC exhaust duct. Large equipment double doors and a personnel airlock are also provided for access into Decontamination Area II. Decontamination Area II can process components/ equipment with measurable radiation levels up to 20 mrem/h at 1 foot from the component. This point source approximates a 2 millicurie cobalt-60 equivalent activity deposit on the surface of equipment. As the above analysis showed that this activity was the maximum projected source to be handled in Decontamination Area II, Area II shielding has been designed to maintain the design radiation levels in adjacent areas below the design radiation level of 0.2 mrem/h while processing components/equipment with the above stated radiation levels.

The SubSite is Part Of:

Code: 437 MASF

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility

Code: 437 MASF:4

Classification: Accepted

Names: 437 MASF:4; Cells

Reclassification: Closed Out (9/11/2003)

Type: Maintenance Shop

Start Date:

Status: Active

End Date:

Description: Below Grade Cells The below grade cells within the high bay areas are concrete shielded enclosures, approximately 12.5 meters (41 feet) deep, and include two inert vessel cells, a large

diameter cleaning vessel (LDCV) cell, a small diameter cleaning vessel (SDCV) cell, and an air and test cell. Equipment access is from above by removing the shielded floor plugs used to cover the cells. The 200 ton and 60 ton crane support these cells. The below grade cell shielding maintains the radiation levels below 0.2 mrem/h radiation to adjacent areas. The worst case component allowed to be stored or serviced in each cell is an instrument tree in the inert vessel and LDCV cell, six reflectors in the SDCV cell, and an intermediate heat exchanger in the air and test cell). The instrument tree and reflectors experience a maximum neutron flux from the FFTF core. The Intermediate Heat Exchanger (IHX) is subjected to the maximum corrosion product deposition from the primary coolant loops of the FFTF. Source strengths for these components are provided in the facility design criteria. The maximum allowable radiation levels from the cells to the adjacent areas are 2 mrem/h in the mechanical service tunnel and below-grade cells and 0.2 mrem/h in the stairwell and above-grade high-bay area. Inert Vessel Cells The inert vessel cells each contain a carbon steel vessel that provides controlled inert storage atmosphere for large sodium-wetted components prior to sodium film removal and for components that have been cleaned, repaired, and are ready for reuse. LDCV and SDCV Cells The LDCV and SDCV cells contain the cleaning vessels for sodium film removal from sodium-wetted components. The LDCV and SDCV cleaning vessel design pressures are 20 psig. The vessels have been designed and fabricated to the ASME Boiler and Pressure Vessel Code. The LDCV has been hydrotested to 43 psig; the SDCV has been hydrotested to 30 psig. Air and Test Cell The air and test cell provides an area for maintenance and storage of large components, such as a primary pump, secondary pump, or an intermediate heat exchanger, after sodium removal. Radioactive Waste Tank Cell The radioactive waste tank cell is a shielded concrete enclosure located beneath the process equipment room. The cell contains two 18,925 liters (5,000 gallons) stainless steel tanks for the storage of radioactive liquid waste. The tanks were tested in accordance with the ASME Boiler and pressure Vessel Code, Section VIII, Division 1. Design pressure of the tanks is 45 psig; hydrostatic test pressure is 67.5 psig. The cell shielding is based on the maximum source strength of the radioactive liquid stored in the tanks and has been designed to maintain the radiation levels in the process equipment room below the design radiation level of 0.2 mrem/h. The source strength used in the design calculation is provided in the facility design criteria.

The SubSite is Part Of:

Code: 437 MASF

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility

Code: 437 MASF:5

Classification: Accepted

Names: 437 MASF:5; Cask Decontamination and Maintenance Facility

Reclassification: Closed Out (9/11/2003)

Type: Maintenance Shop

Start Date:

Status: Active

End Date:

Description: The Cask Decontamination and Maintenance Facility (CDMF) is an unshielded, air atmosphere glovebox located in the high-bay area. The CDMF operates at a negative pressure with a once-through HEPA filtered air flow. The CDMF provides radiological containment for cleaning operations and inspections under T-3 Cask's license. Both supply and exhaust air is filtered. Hands-on decontamination is done inside the glovebox enclosure using a water rinse system and special cask unloading, scraping, and inspection tools. The rinse water from the T-3 Cask is filtered in the CDMF adapter before it enters the Contaminated Liquid Waste System. The CDMF is serviced by a small 1/4 ton bridge crane and electric hoist that comply with all requirements for Hanford hoisting and rigging. CDMF was fabricated and helium-leak tested per HWS-12111, Amendment 1. The glovebox is equipped with an alarm for loss of negative pressure and a fire detector.

The SubSite is Part Of:

Code: 437 MASF**Names:** 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility**Code:** 437 MASF:6**Classification:** Accepted**Names:** 437 MASF:6; Contaminated Equipment Repair Shop**Reclassification:** Closed Out (9/11/2003)**Type:** Maintenance Shop**Start Date:****Status:** Active**End Date:**

Description: The Contaminated Equipment Repair Shop (CERS) provides the necessary services for hands-on repair and maintenance operations of Interim Examination and Maintenance (IEM) Cell components that have been decontaminated. The CERS is located in the low bay area and is operated at a negative pressure. The shop contains work tables and maintenance tools and is equipped with an overhead sprinkler system. The work tables have local HVAC exhaust drops. A 1 ton monorail and electric hoist services the CERS work tables and a 4 ton electric hoist is housed in a penthouse on the roof of the CERS. The CERS is accessed through two large equipment doors and a personnel airlock. A ceiling equipment access hatch is also provided. A pair of seal tubes over the large double doors are used for manipulator retesting. Electrical penetrations are provided for contaminated IEM Cell TV equipment repair.

The SubSite is Part Of:**Code:** 437 MASF**Names:** 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility**Code:** 437 MASF:7**Classification:** Accepted**Names:** 437 MASF:7; Loadout Facility**Reclassification:** Closed Out (9/11/2003)**Type:** Maintenance Shop**Start Date:****Status:** Active**End Date:**

Description: The loadout facility is a concrete shielded enclosure that will accommodate the FFTF and Hanford Site tank cars for transfer and disposal of the radioactive liquid waste stored in the radioactive storage tanks. The shielding has been designed to maintain the design radiation level of 0.1 mrem/h external to the facility and 0.2 mrem/h in the process equipment room. The shielding calculations used the maximum source strength in a 75,700 liters (20,000 gallon) tank car, as defined in the facility design criteria.

The SubSite is Part Of:**Code:** 437 MASF**Names:** 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility**Code:** 437 MASF:8**Classification:** Accepted**Names:** 437 MASF:8; Process Systems**Reclassification:** Closed Out (9/11/2003)**Type:** Maintenance Shop**Start Date:****Status:** Active**End Date:**

Description: Sodium Removal System The sodium removal system consists of the large diameter and small diameter cleaning vessels, fluid/gas supply systems, a vacuum pumping system, water recirculation system, gas recirculation system, and drain and vent systems. Because of the piping system design, only one cleaning vessel can be used at any one time. The cleaning process consists of recirculating a water vapor/nitrogen mixture (WVN) while venting gas to

remove hydrogen. The reaction rate is controlled by monitoring the hydrogen concentration and adjusting the steam concentration as required to maintain the sodium reaction. The WVN process is continued until the moist circulating gas has completely reacted with the sodium film, as indicated by the hydrogen analyzer. The WVN process is then discontinued, and the vessel is slowly filled with hot demineralized water while the N₂ flow is continued and the hydrogen gas is monitored. After a suitable recirculation period, the water is drained, followed by additional rinses as required to ensure that all sodium hydroxide has been rinsed from the item, as indicated by the pH meter. A two-stage filter, with a removal efficiency of 98% (for 0.5 millimeter particles) is included in the water recirculation system to remove radioactive particulate contaminants from the circulating water. After completion of the rinse cycle, the article is dried by recirculating warm dry nitrogen through the system. The gas recirculation system includes a gas cooler to remove moisture and a gas heater to reheat the gas to system temperature. The vessel may also be partially evacuated to facilitate the removal of moisture from the component. Because of the small volume of the SDCV, the gas phase is a single pass through the vessel and through the scrubber/demister, dryer, and HEPA filters to the HVAC exhaust. A two stage filter in the water recirculation system is installed in a separate shielded enclosure in the LDCV cell. The expected maximum radiator level of the filter is 80 rem/h within the shielded enclosure. The entire filter assembly, including filter housing, is designed for remote disconnection and removal from the system. Filter piping connections are remotely operated, band type connections and valves are provided with reach rods to permit all required filter removal operations external to the shield enclosure. The filter removal from the enclosure will be accomplished using the FFTF solid waste cask (equipped with electrically operated internal grapple). After filter removal, filter replacement is manually accomplished in the shielded enclosure. Gas Analyzer System A gas analyzer system is provided to monitor oxygen, hydrogen, and moisture during the sodium cleaning process. The gas analyzer monitors the oxygen concentration in the cleaning vessel to ensure an inert atmosphere for sodium-wetted components and detects any air in-leakage to the vessels. The oxygen analyzer is capable of detecting oxygen concentrations of <0.25% to 5% by volume. At a preset high oxygen concentration limit, the flow of steam is automatically cut off, and additional nitrogen is introduced until the oxygen concentration is within specification. The gas analyzer monitors the hydrogen concentration to control the sodium removal process and to protect against potentially explosive concentrations in the cleaning vessels. The gas analyzer is capable of detecting hydrogen concentrations in the range of ><0.25% to 5% by volume. At a preset high hydrogen concentration limit, steam flow automatically stops and full nitrogen flow is initiated. The gas analyzer monitors the moisture concentration of both the nitrogen/steam injection and the process system nitrogen gas to control reaction rates and to indicate the end point of the drying process. The instrument is capable of detecting and indicating moisture concentrations in the range of 0.5% to 25% by volume. The instrument indication is used to control the nitrogen/steam ratio and to monitor the drying process. Process Sewer Nonradioactive process water from the cleaning vessel is pumped directly to the process sewer. The water is monitored for pH and radioactivity in the sodium cleaning system prior to discharge to the process sewer. Additionally, a liquid monitor in the process sewer system continually checks the discharged water for radioactivity. A removable spoolpiece is provided as a cross connect to the contaminated liquid waste system. The spoolpiece is only installed when the discharge water meets the requirements of the concentration guides in DOE Order 5480.1, Chapter XI. In the event that the discharge water does not meet minimum standards for draining to the process sewer, the water will be automatically diverted to the radioactive waste tanks. Contaminated Liquid Waste System/Contaminated Gas Vent System All contaminated liquid waste will be discharged directly to the radioactive waste tanks. During discharge of contaminated liquid waste to the radioactive waste tanks, the removable spoolpiece (cross-connect between the process sewer and the contaminated liquid waste system) is removed to prevent potential release of contaminated liquid waste to the process sewer. Pipe connections are blanked off with blind flanges when the spool piece is not installed. The contaminated liquid waste in the radioactive waste storage tanks is pumped directly to a railroad tank car in the loadout facility for transport to an appropriate disposal area. All major

contamination sources are filtered prior to entering the Contaminated Liquid Waste System. The ultrasonic cleaner in Decontamination Area II has a 20 micrometer in line cartridge filter. The floor drains in Decontamination Areas I and II have 50 micrometer cloth bag filters in metal strainer baskets. The adapter drain basket on the Cask Decontamination and Maintenance Facility has a polyester filter pad insert. These filters minimize the contamination buildup in the Contaminated Liquid Waste System drain lines and storage tanks. In addition, the storage tanks can be flushed and recirculated during the loadout operation to minimize radiation buildup in the tank cell. All contaminated gas is vented through a scrubber/demister/ dryer and HEPA filter system prior to release to the

The SubSite is Part Of:

Code: 437 MASF

Names: 437 MASF; 400 Area Maintenance and Storage Facility; 437 Maintenance and Storage Facility

Code: 4713-B FD

Classification: Accepted

Names: 4713-B FD; 4713-B French Drain; Miscellaneous Stream #33
Reclassification: Rejected (12/3/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a pipe that is 1.5 meters (5 feet) long and 61 centimeters (24 inches) in diameter. The pipe is constructed of concrete and is filled with gravel. The pipe is buried vertically, extends above grade 15.2 centimeters (6 inches) and is covered by a metal grating. Three parallel metal pipes emerge horizontally from the east side of the 4713 Building, then bend 90 degrees downward and end approximately 0.3 meters (1 foot) above the metal grating.

Location: The site is located about 1.22 meters (4 feet) east of 4713B.

Process Description: The site is associated with waste water discharges (miscellaneous stream #33) from the 4713B Maintenance Building. In 1996, the sink was disabled to prevent discharge of gray water (waste water excluding sewage) to the french drain. Remaining inputs are infrequent discharges from the 4713B fire sprinkler system and eyewash station.

Related Sites/ Structures: The site is related to the 4713B Protected Area Maintenance Building.

Waste Type: Water

Waste Description: In 1987, the site received approximately 3,785 liters (1,000 gallons) of waste water from lunchroom sinks. In 1988, the french drain received only intermittent discharges and had a normal flow rate of zero. The "Inventory of Miscellaneous Streams", Revision 3, states that the employee sink water and drinking fountain supply have been shut off. The eyewash station is still an active source. Routine maintenance discharges will be covered under ST 4508 (when it is approved by Ecology). The current flow rate (1998) is less than 0.038 liters (0.01 gallons) per minute.

Code: 4713-B HWSA

Classification: Accepted

Names: 4713-B HWSA; 4713-B Hazardous Waste Storage Area
Reclassification: Rejected (12/3/1998)

Type: Storage Pad (<90 day)

Start Date: 1/1/1980

Status: Active

End Date: 1/1/1993

Description: The site consists of a 6.1 meters (20 foot) long and 6.1 meters (20 foot) wide concrete pad that

is used as a satellite accumulation area. Metal cabinets, 208 liter (55 gallon) drums and a wooden storage box were located on the pad in May, 1994.

Location: The site is located on the west side of the 4713-B building mechanical shop on a 6.1 meters by 6.1 meters (20 foot by 20 foot) concrete pad.

Related Sites/ Structures: The site is associated with the 4713B Maintenance Building.

Waste Type: Misc. Trash and Debris

Waste Description: The site was used as an accumulation area to store waste in cabinets and drums. The wastes were small quantity items related to FFTF maintenance activities. Wastes included fluorescent bulbs, incandescent bulbs, mercury vapor lamps, hazardous rags, solvents, suspected PCB-containing ballasts and capacitors, non PCB containing ballasts and capacitors, persistent carcinogens, and printed circuit boards, and miscellaneous equipment.

Code: 4713-B LDFD

Classification: Accepted

Names: 4713-B LDFD; 4713-B Loading Dock French Drain; Miscellaneous Stream #469

Reclassification: Rejected (12/3/1998)

Type: French Drain

Start Date:

Status: Active

End Date:

Description: The site is a circular metal grate located in an asphalt paved area east of the 4713-B loading dock. The site sits in a small depression. The site appears to be a stormwater access point to the 400 Area surface drainage system. It does not appear to be a ground disposal site.

Location: The site is located about 23 meters (75 feet) east of the 4713-B building.

Waste Type: Stormwater Runoff

Waste Description: The current "Inventory of Miscellaneous Streams", Revision 3 states that the site collects stormwater and discharges it to the 400 Area stormwater collection system. The current flow rate is less than 1.9 liters per minute (0.50 gallons per minute). Earlier documents, Low Volume Effluent Streams report (Milikan 1988) and the Inventory of Miscellaneous Streams Report (WHC 1993 and DOE/RL-95-82), have stated it receives cooling water from welding equipment or sink water. This earlier data may actually refer to WIDS Site 4713-B FD.

Code: 4721 FD

Classification: Accepted

Names: 4721 FD; 4721 French Drain; Miscellaneous Stream #28; 400 Area French Drain Discharge from 4721 Building

Reclassification: Rejected (12/3/1998)

Type: French Drain

Start Date: 1/1/1979

Status: Active

End Date:

Description: The unit is a 1.2 meter (4 foot) diameter, 1.5 meter (5 foot) long concrete or vitrified clay pipe filled with gravel. The unit is below grade and cannot be identified visually at the location identified in the "Inventory of Miscellaneous Streams".

Location: The site is located west of the 4721 building in a gravel covered area.

Related Sites/ Structures: The french drain is connected to the 4721 Building. This facility is also called the FFTF Emergency Generator Facility or Gas Turbine Building.

Waste Type: Water

Waste Description: The unit may have received janitorial solutions of water and detergents. The "Inventory of

Miscellaneous Streams", Revision 3, states that the site routes stormwater from floor drains to an injection well on the west side of the building. The flow rate is less than 0.038 liters per minute (0.01 gallons per minute).

Waste Type: Oil
Waste Description: If a spill occurred during generator operations, the unit might have received diesel oil. Because oil had to be pumped up to the generator from the underground storage tank, spills should not have occurred when the system was not operating. There are no known spills.

Code: 4722 PSHWSA **Classification:** Accepted
Names: 4722 PSHWSA; 4722-C Hazardous Waste Storage Area; 4722 Paint Shop Hazardous Waste Storage Area; 4722 Paint Shop HWSA **Reclassification:** Rejected (1/27/1999)
Type: Storage Pad (<90 day) **Start Date:** 1/1/1980
Status: Active **End Date:**
Description: The Hazardous Waste Storage Area is three metal cabinets that are located on a curbed, concrete pad outside the 4722-C Building.
Location: The site is located on the north side of the 4722-C building, adjacent to the northeast corner.
Waste Type: Chemicals
Waste Description: The site is a staging area primarily for paint solvents. Signs indicate that solvent rags, antifreeze, and absorbent materials (for spill cleanup) may also be present.

Code: 4722-B FD **Classification:** Accepted
Names: 4722-B FD; 4722-B French Drain **Reclassification:** Rejected (1/27/1999)
Type: French Drain **Start Date:** 1/1/1979
Status: Inactive **End Date:**
Description: The unit is described in the Hanford Site Waste Management Units Report as 1.22 meter (4 foot) diameter pipe that is 1.52 meters (5 foot) long. It is made of concrete or vitrified clay and filled with gravel. There are no visible surface features.
Location: Coordinates place the drain approximately 9.7 meters (32 feet) north of 4722-B, under the roadway.
Related Sites/ Structures: The site is related to the 4722-B Building.
Waste Type: Sanitary Sewage
Waste Description: In 1987, the drain was described to have received 3,785 liters (1,000 gallons) per year of wastewater from lunchroom sinks in the 4722-B building. More current documents of miscellaneous stream discharges do not include this french drain. 4722-B employees believe the lunch room sink is connected to the sanitary sewer.

Code: 4722-C FD **Classification:** Accepted
Names: 4722-C FD; 4722-C French Drain; French Drain South of 4722-C; Miscellaneous Stream #29 **Reclassification:** Rejected (1/27/1999)
Type: French Drain **Start Date:** 1/1/1979
Status: Inactive **End Date:** 1/1/1985
Description: The Hanford Site Waste Management Units Report (1987) lists the site as a french drain that is

Description: 1.22 meter (4 foot) in diameter, concrete or vitrified clay, gravel-filled buried pipe that extends 1.5 meters (5 feet) below grade. Surface features include a 5 centimeter (2 inch) diameter pipe protruding from the south side of the 4722-C Building. The pipe emerges from the wall approximately 0.6 meters (2 feet) above the building foundation and travels west approximately 0.9 meters (3 feet). The pipe turns 90-degrees downward and then turns 90-degrees to the south. The visible piping terminates in the gravel beside the building. No drain structure is visible. Per Curt Clement, Dyncorp, the pipe is connected to a sink. The drainage will be eliminated.

Location: The drain is located approximately 1.2 meters (4 feet) from the south wall of the 4722-C building.

Process Description: The site receives waste water from a sink inside the 4722-C Facility. A statement provided by Dyncorp on January 21, 1999 says that it is noteworthy that currently there are two sinks in this facility. The sink, located within the area where the painting is done, is connected to the sewer not the drywell.

Related Sites/ Structures: The site is associated with the 4722-C Paint Shop (managed by Fluor Daniel Northwest).

Waste Type: Steam Condensate

Waste Description: The source of the discharge to the french drain was eliminated by close of business on 1/28/99. The water was disconnected.

The information provided in the following paragraph has been provided for historical purposes. The Hanford Site Waste Management Units Report (1987) states the drain received water 7570 liters (2,000 gallons per year) from a sink used to wash latex paint from hands, brushes and rollers. It also states a sample was taken from the unit and found no hazardous constituents. A 1988 report (DOE/RL-88-11, Revision 0) states that the hazardous chemical inventory for this site includes 1,000 kilograms (2,200 pounds) of sodium dichromate (Reference 1). This data is unsubstantiated. In 1995, the Inventory of Miscellaneous Streams Report DOE/RL-95-82, Rev 0, Table 3-1, changed the process description to indicate the waste is condensate that originates from a water heater on the west side of 4722-C. The flow rate is listed as 0.038 liters (0.01 gallons) per minute.

A statement provided by Dyncorp on January 21, 1999 says that it is noteworthy that currently there are two sinks in this facility. The sink, located within the area where the painting is done, is connected to the sewer not the drywell.

Dyncorp has not been able to find anyone with any knowledge of what went into the drain. The 'Registration of Hanford Site Class V Underground Injection Wells', DOE/RL-88-11 contains no references that could be used to verify the statement related to the amount of sodium dichromate. It is possible this statement is in error. There is at least one other error, as the formula for sodium dichromate (Na₂Cr₂O₇) is not NaCr₂.

Code: 4831 LHWSA	Classification: Accepted
Names: 4831 LHWSA; 4831 Flammable Storage Facility; 4831 Laydown Hazardous Waste Storage Area; 4831 Laydown HWSA	Reclassification: Closed Out (12/3/1998)
Type: Storage Pad (<90 day)	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1993
Description: Currently the site is an empty concrete pad with a metal berm around its edges. The metal berm measures 5 centimeters (2 inches) tall and 5 centimeters (2 inches) wide. It runs around the pad	

approximately 7.6 centimeters (3 inches) inward from the edges and is bolted down. Cylindrical concrete anchors are attached to 1.2 meter (4 feet) high metal posts that have been placed around the edges of the pad. Most of the posts remain upright and are connected with a metal chain, although many have fallen down. A small, tan metal shed at the east end of the pad provided supply storage and a sheltered workspace when the storage area was operating. The shed is 4.9 meters (16 feet) long and 3 meters (10 feet) wide and has double sliding doors on its south side.

Location: The site is located at the east end of Texas Street, north of the 427 Building. The concrete pad is approximately 10 meters (30 feet) north of the 4831 Flammable Storage Facility.

Waste Type: Chemicals

Waste Description: The site was used as a staging area for oils and hazardous wastes produced and collected in the 400 Area. Wastes staged at this site in 1977 were primarily oils, solvents, ethylene glycol, and empty drums for cooling water treatment chemicals such as Endcor 4690, which is acutely hazardous. These wastes were stored in containers on the pad.

Code: 4843

Classification: Accepted

Names: 4843; 4843 Alkali Metal Storage Facility; 4843 AMSF; 4843 Building; 4843 FFTF Sodium Storage; 4843 Laydown Area Warehouse

Reclassification: Closed Out (4/14/1997)

Type: Storage

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1997

Description: The 4843 Alkali Metal Storage Facility was built to store dangerous and mixed alkali metal waste. The structure is a fully-insulated, bolted steel building on a concrete slab. Heat was provided by ceiling-suspended heaters. Two 3.7 meter (12 foot) roll-up doors are located on the structure's east and west sides and were used for moving materials into and out of the building. A large fenced laydown area adjacent to the building could be accessed through the west door. The facility also has several other doors and windows. A 2.4 meter (8 foot) wide and 3.0 meter (10 foot) tall portion of the south wall has corroded and appears rust-colored. The bottom edges of the facility's outside walls have also corroded. Inside the building, a rope barrier separated the dangerous alkali metal waste storage area from the mixed alkali metal storage area. Concrete blocks were used to provide shielding from the radioactive alkali metal waste.

Location: The 4843 Building is located in the northwest corner of the 400 Area. A large laydown area is located adjacent to and west of the structure.

Related Sites/ Structures: After the site was closed out, a new WIDS code was created (400-36) at the request of EPA for its new use as a waste transfer station.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The unit was a storage area for dangerous and mixed alkali metal wastes generated by FFTF and various other operations at the Hanford site. Dangerous and mixed alkali metal wastes that have been stored at the facility include mixed sodium waste; materials used to clean up radioactive sodium; non-radioactive sodium waste; waste radioactive sodium metal; and non-waste, non-radioactive sodium metal. Waste containers used at this facility may have included steel 19 liter (5 gallon), 114 liter (30 gallon), and 208 liter (55 gallon) drums or sealed piping and components that have been welded closed.

Code: 600 BPHWSA

Classification: Accepted

Names: 600 BPHWSA; Hazardous Waste Storage Area (607 Batch Plant); 600 Area Batch Plant HWSA

Reclassification: Rejected (9/6/2000)

Status: Inactive **End Date:** 1/1/1988

Description: This was the site of the Exploratory Shaft Facility septic tank. This area has been reclaimed due to project cancellation. No visual evidence of a septic tank remains.

Location: This site is at the Exploratory Shaft Facility, west of 200 West Area and southeast of the Yakima Barricade, near Army Loop Road.

Process Description: This site provided sanitary wastewater disposal for the Exploratory Shaft Facility.

Related Sites/ Structures: This site has an associated drainfield and distribution box.

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary wastewater.

Closure Info: The site has been abandoned per WAC code. Decommissioning and reclamation work was completed at the Exploratory Shaft Facility on March 23, 1988. The septic tank was pumped out, the access manhole covers were removed, and it was backfilled with clean sand. The sanitary concrete distribution box was removed and voids were filled. The steel posts and barrier rope around the drainfield were removed, and the drainfield pit was backfilled.

Code: 600 NSTFST **Classification:** Accepted

Names: 600 NSTFST; Near Surface Test Facility; Septic Tank; 600 Area Near Surface Test Facility Septic Tank **Reclassification:** Closed Out (5/31/2001)

Type: Septic Tank **Start Date:** 1/1/1981

Status: Inactive **End Date:** 1/1/1988

Description: This site is a septic tank and associated tile field. The septic tank serviced the Trailer Village that was located at the base of Gable Mountain. The septic tank was pumped out and backfilled.

Location: This site is located at the west end of Gable Mountain, at the base of the north side.

Process Description: This unit provided sanitary disposal for the Near Surface Test Facility Trailer Village.

Related Sites/ Structures: The tank was associated with the Near Surface Test Facility Trailer Village.

Waste Type: Sanitary Sewage

Waste Description: The unit received sanitary wastewater.

Code: 600 NSTFUT **Classification:** Accepted

Names: 600 NSTFUT; Near Surface Test Facility; Underground Tank; 600 Area Near Surface Test Facility Underground Tank **Reclassification:** Closed Out (5/31/2001)

Type: Storage Tank **Start Date:** 1/1/1981

Status: Inactive **End Date:** 1/1/1988

Description: This site consists of two sanitary waste holding tanks. The tanks supported the mobile office trailers that were located on the tunnel bench for the Near Surface Test Facility. The tanks each

had a 3,785-liter (1,000-gallon) capacity and were emptied every other week. This facility has been decommissioned and reclaimed.

Location: The tanks were located on the tunnel bench for the Near Surface Test Facility, on the north side of Gable Mountain.

Process Description: The tanks received sanitary waste from mobile office trailers.

Waste Type: Sanitary Sewage

Waste Description: The tanks received sanitary wastewater.

Closure Info: The holding tanks were removed from the site.

Code: 600-1

Classification: Accepted

Names: 600-1; Westinghouse Debris Pit

Reclassification: Rejected (4/6/1999)

Type: Dumping Area

Start Date: 1/1/1976

Status: Inactive

End Date:

Description: The site is a large depression with sandy soil and sagebrush. Part of the depressions has been backfilled with soil from adjacent areas. Metal and wood scrap can be seen on the surface. Soil subsidences (sink holes) are evident. One faded yellow sign that states "Positively No Dumping" is located on the south side of the site, adjacent to the gravel road. The sign is located in between the 600-1 trench (located on the east side of the depression) and the JA Jones Pit 1 (located on the west side of the depression). Bulldozer scars are evident on the surface.

Location: This site is located on the east side of a large depression that is located north of the 300 Area, east of the point where the railroad tracks cross Route 4 South.

Process Description: Interviews with two employees indicate that two trenches were co-located in this depression. One trench was dug from east to west. It was located on the west side of the depression and was used by the J.A. Jones Company to dispose of inert waste, paint products and debris (see WIDS Site JA Jones #1). The other trench was dug from north to south, located adjacent to the J.A. Jones pit. It was used by the 300 Area Westinghouse facilities as a disposal site for tumbleweeds that collected on the 300 Area fences. The site may have received miscellaneous wood, pallets and debris from the 300 Area Westinghouse facilities during the late 1970's and early 1980's. A 1994 site visit observed evidence that tumbleweeds had recently been dumped along the southeast edge of the site, indicating the area was still being used for this purpose.

Related Sites/ Structures: The trench is adjacent to and east of the J. A. Jones 1 Dumping Pit.

Waste Type: Misc. Trash and Debris

Waste Description: Roofing remnants, plastic bucket with dried paint, rebar, aluminum, bits of concrete, asphalt, wood, and plastic are visible at the site.

Waste Type: Chemicals

Waste Description: October 1994 interviews with Will Kirk and Tony Day, retired Hanford employees, disclosed that aluminum silicon alloy, may have been disposed of at 600-1. Interviewees were unable to positively confirm dumping at this site, but felt a reasonable certainty. Aluminum silicon alloy was used in its molten state as a reactor fuel cladding process dip in the 313 Building and waste aluminum silicon alloy usually had low levels of uranium contamination.

boxes, a 18.9 liter (5 gallon) drum with holes in the bottom was found. The drum was partially buried and appeared to be some type of french drain or sanitary sewage facility (latrine).

Code: 600-6 **Classification:** Accepted

Names: 600-6; Battery B Nike Missile Launch Site; MIL - H-12-L **Reclassification:** Rejected (1/30/2003)

Type: Military Compound **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1960

Description: The unit is an abandoned military installation that once included two sheds (paint and acid storage), a generator building, an oil tank, an 11,356 liter (3,000 gallon) UST, a 200 meter (650 feet) deep well, and a septic system. In 1990 the site consisted of concrete foundation pads, a backfilled underground storage area, a 3-4 ft deep excavation, and a large soil depression at the northwest corner of the unit. The large soil depression in the northwest corner of the site was suspected to be a disposal area, based on a general disturbance pattern within the nearby soil (Roos 1990). All above-ground structures were sold to Washington State University prior to 1974 and have been removed.

Location: The Unit location is northeast of 100-F Area on the opposite side of the Columbia River (SW 1/4 of NW 1/4 Section 23 T 14N R 27E). The Unit is approximately 1/2 mile east of the intersection to White Bluffs landing.

Related Sites/ Structures: Storage bunker, electrical access port and acid pit, 600-10 Control Area, and 600-17 Antiaircraft gun site

Waste Type: Demolition and Inert Waste

Waste Description: Only concrete building foundations and a soil depression remain. An Acid pit was sampled but no hazards were identified.

Code: 600-7 **Classification:** Accepted

Names: 600-7; Concrete/Asbestos Pipe Site; Nike Asbestos Pipe Site **Reclassification:** Rejected (1/30/2003)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The unit is a depression containing miscellaneous construction debris and exposed pieces of concrete/asbestos pipe. Demolition activities at waste site 600-6 are believed to be the reason for debris found on this waste site.

Location: The site is located northeast of 100-F Area on the opposite side of the Columbia River (SW 1/4 of NW 1/4 Section 23 T 14N R 27E). It is adjacent to the H-12-L Nike Launch site.

Related Sites/ Structures: The site is associated with demolition at the Nike Missile Launch Site, H-12-L.

Waste Type: Demolition and Inert Waste

Waste Description: This unit contains concrete/asbestos pipe, concrete, and miscellaneous construction debris.

Code: 600-10 **Classification:** Accepted

Names: 600-10; Battery B Nike Missile Control Center; MIL - H-12C **Reclassification:** Rejected (1/30/2003)

Description: automatic weapons, and several tires.

Code: 600-13

Classification: Accepted

Names: 600-13; Battery "C" Launch Site; MIL - H-83L; PSN 80

Reclassification: Rejected (1/30/2003)

Type: Military Compound

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1974

Description: This unit is an abandoned military installation. Buildings and other above ground structures have been removed. Underground structures have been filled. The Air Defenses of Hanford: Camp Hanford The Forward Positions 1950-1964 descriptive summary (Anonymous 1993) states there were 15 aboveground structures (including barracks, paint, oil, and acid storage), a septic system, and assorted "miscellaneous tanks." The barracks were located about 0.4 kilometers (0.25 miles) away from the launch site. The summary also reported that the site is "destroyed;" the AEC cleanup was from May to July 1974. The ammunition magazines were detonated in June 1974. The adjacent PSN 80 was merged with this site after 1956 (Anonymous 1993).

Location: The site is located northwest of 100-B/C Area on the opposite side of the Columbia River (SW 1/4 Section 16, R 14N R 25E) It is at the end of a paved access road.

Related Sites/ Structures: 600-11, 600-12, 600-75, 600-18 and 600-96

Waste Type: Demolition and Inert Waste

Waste Description: Wastes identified at the unit are miscellaneous disposal area debris, material from 1960's practice maneuvers, and miscellaneous trash scattered over a 50 acre area.

Code: 600-14

Classification: Accepted

Names: 600-14; MIL - PSN 01

Reclassification: Rejected (1/30/2003)

Type: Military Compound

Start Date:

Status: Inactive

End Date: 1/1/1960

Description: The unit is an abandoned military tent camp and anti-aircraft battery site. During the April 1999 visit, no foundations were observed but several regular shaped disturbed areas and chunks of concrete were visible. What appeared to be an abandoned well was found under a removable metal cover. There is an area of erosion or subsidence with exposed concrete along the edges. Circular areas with little or no vegetation were also seen around the site. Mature trees, grasses and 0.6 to 1.2 meter (2 to 4 foot) tall sagebrush cover the site. An underground septic tank and drain field may still exist as there is no record of them being removed. The well that serviced the position was 892 feet deep, and drilled in 1953.

Location: The site is located north of the Columbia River, north of Highway 24, in the Wahluke Slope State Wildlife Recreation Area. It can be accessed via Gate 136. The site is approximately 1 mile north of marker 56 on Highway 24.

Process Description: Original structures at the site included a 20-foot by 34-foot aluminum pre-fab pumphouse with a concrete floor and foundation, a 550-gallon underground storage tank, and septic system. The site also had a direct communications cable connection with Headquarters site H-03-H, which was in the central region of Hanford, south of the 100-N Area. The use permit was terminated by the Atomic Energy Commission on December 21, 1960. After the site ceased to function as an AAA site, a repeater remained operational.

food cans, condiment containers and beer bottles), washing machine parts, a water tank, a water heater, 1-gallon solvent cans, and artillery shell packing boxes marked 120 M.

Code: 600-18 **Classification:** Accepted

Names: 600-18; H-82; MIL - PSN 72/82; PSN 72; Tent **Reclassification:** Rejected (1/30/2003)
Camp 515

Type: Military Compound **Start Date:** 1/1/1951

Status: Inactive **End Date:** 1/1/1961

Description: The site is an abandoned military tent camp site and anti-aircraft battery. The unit consisted of a few small disposal pits and piles located west of the road and a small firing range located at the northeast corner of the unit. The site also contained a pumphouse and a 500 gallon underground tank. A disposal area was identified with a considerable amount of surface debris; all debris has been removed.

Location: The site is located northwest of 100 B/C on the opposite side of the Columbia River (SW 1/4 Section 31, T 14N R 25E) Parts of it are on both sides of a small highway heading north from Vernita Bridge, around a group of trees at the top of the hill.

Process Description: The gun emplacements and all the facilities except for the septic system and roads were removed during the 1974 cleanup.

Waste Type: Demolition and Inert Waste

Waste Description: The unit contained wood debris, empty 5-gallon and 1-quart oil cans, an empty 5 gallon can of lubricant, artillery packing materials, two partially buried plywood boxes, ash, communications wire, cable, lead and brass. The unit also contained a septic tank.

Code: 600-19 **Classification:** Accepted

Names: 600-19; Base Camp 410; H-90; MIL - PSN 90 **Reclassification:** Rejected (1/30/2003)

Type: Military Compound **Start Date:**

Status: Inactive **End Date:**

Description: This is an abandoned anti-aircraft military installation. Before final cleanup in 1994, structures included a concrete foundation pad, an abandoned well, cinderblock well pumphouse with a 550 gallon underground tank, a usable well, abandoned well, and a recently used old oil rack and grease pit, wash platform, generator shed, septic system, and support facilities. Other unit features include an old dumping ground (located south of Highway 24), several trash pits, and a 10 feet by 15 feet by 4 feet deep trench. During the April 1999 visit, several concrete foundations and walkways were observed, as well as a stone wall, earthen mounds and a small cinderblock structure. Mature trees are growing around the abandoned installation.

Location: The site is located north of the Columbia River in the Saddle Mountain National Wildlife Refuge. Most of the site is located north of Highway 24; however, an old dumping ground is described as being located south of the highway.

Related Sites/ Structures: Military motor pool

Waste Type: Demolition and Inert Waste

Waste Description: Unit waste consists of small amounts of refuse including tent parts electrical parts, automobile parts, and sand bag material. In addition, a small area of the ground was oil stained near the oil rack.

Code: 600-20 **Classification:** Accepted

Names: 600-20; 615 Hot Mix Plant for Road Materials; Tank Cleaning Site **Reclassification:** Rejected (10/1/1997)

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The site was originally described as two abandoned asphalt tanks, each with a volume capacity of 45,420 to 52,990 liters (12,000 to 14,000 gallons [based on the exterior measurements provided in WHC-MR-0425]). A 1999 waste site walkdown identified several valve pits, and a depression which contains discarded asphalt material, several pails and drums. Waste asphalt, dumped in solid and liquid form, is prevalent at the site, as is other construction and equipment debris. In warm weather, the discarded asphalt liquefies and resembles puddles. The asphalt puddle in the depression (trench) south of the tank area was approximately 0.3 meters (1 foot) deep in May and June 1999.

Location: The site is located on the west side of the Hanford Townsite, south of the railroad tracks. The two remaining tanks are 600 meters (1968.6 feet) west of Route 2 North.

Process Description: The Hot Mix Plant for the preparation of bituminous road surfacing materials was originally erected for temporary and permanent road construction. This Plant was a "TC" (temporary field construction) plant that continued to operate after the construction phase. It was located along the south side of a railroad spur and just east of the former Hanford Aggregate Pit. The Plant was rated at 3/4 to 1-1/4 cubic yards per minute and consisted mainly of eight horizontal oil storage tanks; a Barber-Greene, Model #843, Central Mixer for single aggregate, and a Model #833 Single Drum Dryer; and Steam Facilities. At the close of construction, the above facilities were transferred to the Operating Department and assigned permanent building number 615. The horizontal oil storage tanks were arranged in a single row at the foot of the railroad fill to provide a gravity flow for unloading operations. Six of the tanks, measuring 1.5 meters (5 feet) in diameter and 7.3 meters (24 feet) in length, were supported by reinforced concrete cradles. Two of the tanks, measuring 3.0 meters (10 feet) in diameter by 7.3 meters (24 feet) in length, rested on the ground surrounded by an earthen dike. All tanks were provided with wooden frame access platforms and stairways.

Waste Type: Oil

Waste Description: The remaining waste is located in the pit. The floor of the pit is coated with asphalt.

Code: 600-24 **Classification:** Accepted

Names: 600-24; H-21 Anti-Aircraft Artillery Compound and Dump Site; West P-11 **Reclassification:** Rejected (10/1/1997)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site shows evidence of several former building foundations and walkways located along both sides of the roadway. A 20 foot wide by 36 foot wide concrete pad exists with concrete cradles for a large (approximately 30 x 8 foot radius) water tank. A well # 64-27, A-5295 BNW, is located in the concrete pad. Metal water pipes are visible at most building sites. Multiple small dumping sites are evident northwest and northeast of the compound, but none could be located that exhibit more than a small scattering of debris. Lesser amounts of debris are located at a site 100 meters southeast of the end of the paved road. An ammunition case is also located here. A coal pile site exists on the east shoulder of the railroad tracks northwest of the compound, and a large pile of military barbed wire fence posts (screw type) is located west

of the tracks. The remains of building debris may be found throughout the area, especially in northeast portion of the site.

Location: This unit is northwest of P-11 Unit and at the end of the paved road. Access road intersects Route 2N 0.6 miles north of mile marker 3.

Process Description: The site is typical of other Hanford military facilities of the early 1950's.

Related Sites/ Structures: Associated with this unit was a possible containment basin.

Waste Type: Misc. Trash and Debris

Waste Description: The waste at this unit includes: foundations, pipes (above and below grade), paint cans, a pile of army fence posts, antifreeze cans and miscellaneous debris.

Code: 600-25

Classification: Accepted

Names: 600-25; Susie Junction

Reclassification: Consolidated (4/12/2004)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of a gravel pit, disposal pit, ash pile and several waste piles at "Susie Junction," where two railroad tracks intersect.

Location: This unit is located north of 200 West Area near Gable Butte. R.R. junction south of Gable Butte.

Waste Type: Misc. Trash and Debris

Waste Description: Wastes identified at the unit include 4-5 drums (one which has leaked oil and one which is labeled "KEROSENE"), rubber boots, canvas gloves, a canvas bag containing laundry, brooms, brushes, chisels mounted on poles hoses, nails, cans, miscellaneous debris and a fluffy white fibrous material.

The Site Was Consolidated With:

Code: 600-38

Names: 600-38; Railroad Siding Susie; Susie Junction; 600-25

Code: 600-26

Classification: Accepted

Names: 600-26; Hanford Townsite Burn Pile

Reclassification: Rejected (10/1/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The Technical Baseline Report states the site consists of a 2.4 meter (8 foot) excavation containing a construction refuse burn pile. However, it also states that the author was unable to locate the site in the field. This site was originally identified as a "mystery site" by Richard Roos. In his field notes, Roos describes the site as "old burn pile, apparently a construction disposal location. Site is graded off, perhaps 8' below original grade." He then goes on to describe various features north of the site, such as 600-20 (The Tank Cleaning Site) and several gravel pits. Under "Unusual or Identifying Features," Roos lists "very large spikes (10" x 1/2"), molten glass and metal, wood ashes. A dump site for concrete building foundation is located behind the soil mound..." The site is described as being east of this soil mound. This soil mound with the concrete chunks on its west side is easy to find and can be seen from Highway 2 North. The mound is found in a large excavated area. The excavation was made into the side

of a slope and is not a typical borrow or gravel pit. It increases in depth from east to west. The area east of the soil mound and within the excavated area appears to coincide with Roos' description. However, there appear to have been several areas of burning, not just a single burn pile. The spikes, molten glass and wood ashes described by Roos were found in this area during the June 1999 visit.

Location: The site is located west of Route 2 North and south of an access road leading to 600-20, the "Tank Cleaning Site." The site is between wells 699-54-18E and 699-54-19 and east of a large soil mound.

Waste Type: Misc. Trash and Debris

Waste Description: Unit wastes include construction debris and possible asbestos and barrels.

Code: 600-27

Classification: Accepted

Names: 600-27; 6-54-18A; 6-54-18B; 6-54-18C; 6-54-18D; A58858; A8855; A8856; A8857; Foundations and Dumping Area; Water Supply Valve Pits; Well 699-50-18C; Well DC-6

Reclassification: Rejected (10/6/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site contains wells, valve pits, foundations, and a dumping area. The site has four monitoring wells identified as follows: 6-54-18A, A8855; 6-54-18B, A8856; 6-54-18C, A8857; 6-54-18D, A58858. Note that 6-54-18C is an alias for 699-54-18C. The second identifier beginning with an alpha character is a barcode value located on all wells that are presently used by the samplers during the collection of samples and groundwater elevations. The well named 699-50-18C, DC-6 does not exist either in the Hanford Environmental Information System (HEIS) database or in historical well documents. Two ex-Basalt Waste Isolation Project (BWIP) personnel were also consulted about this well. Both persons stated that the well does not exist and that the picture shown in the Technical Baseline Report is not an old BWIP well. The two other sites that were previously identified as "wells" (see photograph in the Technical Baseline Report) are likely to be valve pits for water utilities and are marked with four steel posts surrounding the pits. The easternmost pit has been filled in with soil and a concrete structure can be seen just under the soil. The other pit has a wooden cover and had two water pipes protruding through the cover. One water pipe was approximately 7.6 centimeters (3 inches) in diameter and was open ended. The other pipe was approximately 2.54 centimeters (1 inch) in diameter and had a faucet (garden hose type) attached to the end. In addition, two valve handles also protruded from the wooden cover. Two power poles were observed between the wells and Route 2 North. The power poles appeared to be active and the breaker switches were not locked out. Evidence of former buildings shows up between the well house and Route 2 North. Building debris includes concrete footings, concrete pads, transite, sewer pipe, electrical wiring and a large diameter clay pipe approximately 0.77 meters (30 inches) in diameter buried vertically from the surface to approximately 2 meters (6.5 feet) below grade. The clay pipe has no incoming/outgoing pipes. The area surrounding the wells show evidence of former roads and walkways that have been overgrown with weeds.

Location: The site is located approximately 0.5 miles west of the old Hanford School, 45.7 meters (150 feet) east of Route 2 North, and on the south side of a dirt road formerly known as Roosevelt Avenue.

Waste Type: Misc. Trash and Debris

Waste Description: The original waste site package identified that chemical analysis of the monitoring well shows volatile organics. No evidence has been found to support this claim. In order to substantiate this information, the HEIS database was searched for groundwater monitoring wells near the

area. The following wells were searched for volatile organics: 699-54-18E, 600-54-19, 699-52-18A, 699-52-18B, 699-52-18C, 699-52-19, 699-52-17, 699-54-18A, 699-54-18B, 699-54-18C, 699-54-18D, 699-54-15A. The results are as follows: Well Number 699-54-18D, Sample Number B07Q48, Date 11/24/92, Constituent 67-64-1, Acetone, 190 micrograms per liter; Well Number 699-54-18D, Sample Number B075S7, Date 11/17/92, Constituent 108-88-3, Toluene, 6.1 micrograms per liter; Well Number 699-54-18D, Sample Number B07Q48, Date 11/24/92, Constituent 108-88-3, Toluene, 5.69 micrograms per liter; Well Number 699-54-18D, Sample Number B01NN6, Date 11/24/92, Constituent 108-88-3, Toluene, 5.2 micrograms per liter. HEIS for Well 699-48-18 was searched for volatile organics. The results are for Sample Number H000DQT1, Date 8/25/87, Constituent 75-09-02 methylenechloride, analytical method id = 16, 80 micrograms per liter. A later sample for the same well showed Sample Number B08185, Date 1/28/93, Constituent 75-09-02 methylenechloride, analytical method id = 83, 5 micrograms per liter (below minimum detectable concentration). Other wells had no volatile organics or the results were below minimum detectable concentration. Some asbestos transite is visible in the area.

Code: 600-31 **Classification:** Accepted

Names: 600-31; 100-F Area Bottle Disposal Site **Reclassification:** Rejected (7/29/1997)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is a sandy area with rabbitbrush growing throughout. It exhibits physical evidence that the dumping of laboratory materials took place. The area also appears to have been disturbed by a blade or bulldozer. During the April 1999 visit, scattered debris was visible, composed primarily of glass with some metal and wood debris. The glass is found in a swath on the west side of a sandy rise. There is a moderate vegetation cover of rabbitbrush and grasses on the sandy rise with less cover on the disturbed ground.

Location: The site is located approximately 91 meters (300 feet) north of the southeast corner of the perimeter road and approximately 9.1 meters (30 feet) east of the perimeter road.

Waste Type: Misc. Trash and Debris

Waste Description: Wastes identified are laboratory-type bottles and bottle caps with the following markings on some of the caps: 1) Sulfuric 2) Mallinckrodt, 3) Bakers, 4) B & A, 5) Fisher. The markings and colors on the bottles and caps indicate they most likely contained laboratory chemicals (e.g. nitric acid, sulfuric acid, hydrochloric acid, etc).

Code: 600-32 **Classification:** Accepted

Names: 600-32; N Area Landfill **Reclassification:** Rejected (6/30/2004)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: A field walkdown done in August 2000 compared the site to the area mapped in Arcview and found it to be a duplicate of 100-N-39 and 100-N-19 (it is contained within the much larger 100-N-19). The site is a large area covering approximately 13 hectares (32 acres), consisting of an abandoned gravel pit and several other depressions which were used as dumping areas for 100-N Reactor and the Hanford Generating Plant (HGP). The main gravel pit depression is approximately 6 meters (20 feet) deep and is located southwest of the HGP facility fence. A steel casing, described as a well head, is located near the northern edge of the unit. Large concrete blocks, a burning area, broken glass, a sandblast material pile, and other debris is scattered across the bottom of the site.

Location: The unit is about 300 meters (1000 feet) south of the 100-N Hanford Generating Plant (HGP)

and Bonneville Power Administration (BPA) Hanford Substation facility fence.

Process Description: The site was used as a dumping area for 100-N Area and the Hanford Generating Plant.

Related Sites/Structures: This site is associated with 100-N-19 (it is contained within the larger site 100-N-19), 100-N-39 (it is a duplicate of 100-N-39), and 100-N-18 (a smaller burning/dumping area about 270 meters (900 feet) north, just south of the HGP fenceline.)

Waste Type: Misc. Trash and Debris

Waste Description: Unit waste includes 19-liter (5-gallon) paint cans (one labeled SCC Portland 26 5 65, one labeled USS 5-28/26-65, one labeled ICC=37-76-80 NRC, others are crushed), sheet aluminum, steel pipes, rebar, transite, cans wood, two 208-liter (55-gallon) drums (one labeled Delvac 1330 SAE-30 motor oil), concrete, wire, cable and spools, bottles (soda pop and amber 3.8-liter [1-gallon] jugs), broken fluorescent and incandescent light blubs, tires, grass clippings and miscellaneous construction debris.

The Following Sites Were Consolidated With This Site:

Code: 100-N-39

Names: 100-N-39; Hanford Substation Construction Dump Area; SWMU #11

Code: 600-33

Classification: Accepted

Names: 600-33; 105-C Reactor Test Loop Burial Site

Reclassification: Rejected (12/9/2004)

Type: Burial Ground

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: The waste site was a temporary burial site for the 105-C Reactor Test Loop.

Location: Five locations were identified as possible locations for the site, including the one listed as 90 to 120 meters (300 to 400 feet) south of the 105-C Reactor Fan Room (E 565368.938, W 143846.781). Trenches, aka potholes, were dug at (1) E 565369, N 143847, (2) E 565369, N 143916, (3) E 565372, N 143916, (4) E 565371, N 143940, (5) E 565855, N 143769.

Process Description: The selected design for the test loop was a tube within a tube (annular design). The outer tube was a 3.8-centimeter (1.5-inch) inside diameter Schedule 160 stainless steel tubing. The inner tube was 2.5-centimeter (1-inch) inside diameter with 0.17-centimeter (0.065-inch) wall thickness within a 12-meter (40-foot) carbon steel shield tube. The test loop was inserted into the south side of the C Reactor core (one of the channels) and was used to test the effects of ionization on various chemicals being considered for reactor process tube scaling and cleaning.

Waste Type: Equipment

Waste Description: The waste consists of a radioactive double-tube test loop, contaminated carbon-steel shielding pipe, and about 305 meters (1,000 feet) of cable used to remove the test loop from the 105-C Reactor. The test loop is approximately 5.5 to 6.1 meters (18 to 20 feet) long and consists of various sizes of stainless steel tubing. The test loop may have dose rates in excess of 100 rads/hour. Potential contaminants include: Co-60, Ni-63

Code: 600-34

Classification: Accepted

Names: 600-34; 100-B Baled Tumbleweed Disposal Site

Reclassification: Rejected (9/9/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a dumping area used for disposal of miscellaneous waste. The dumping area is

within a borrow or gravel pit which is 3.0 to 4.6 meters (10 to 15 feet) deep.

Location: The unit is west of the 181-B intake structure, north of the 90 degree corner where Route 6 changes from north/south to an east/west direction, and east of Pit #24.

Waste Type: Misc. Trash and Debris

Waste Description: The main concentration of waste is located in the eastern section of the pit. However, there is minor surface rubble spread over the pit floor. Visible wastes include wood (timbers and ties), piles of a silt-like material, sheet metal, cardboard, roofing material, concrete, electrical insulators, and a 10 liter (5 gallon) plastic bucket (090-NRC Paragon Molding Co. Melrose Park, Ill.). Pre-Hanford waste is also evident including barbed wire, what appears to be old farm equipment, and remnants of wire wrapped wooden irrigation pipe. Bales of tumbleweeds were located at the site in 1992, but have since been removed.

Code: 600-39 **Classification:** Not Accepted

Names: 600-39; H-50 Gun Site Building Foundations and Ammunition Storage; Military Camp South of 200W **Reclassification:** None

Type: Foundation

Start Date:

Status: Inactive

End Date: 1/1/1958

Description: The site has concrete building foundations, walkways and footings. The foundations are: #1. Vehicle maintenance with a mechanic's pit: 30 meters by 14 meters (97 feet by 47 feet). While the pit is filled in with tumbleweeds making observation of the floor impossible, it is likely concrete. It is unlikely that oil would have been allowed to drain freely in the pit, since mechanics would have had to work in the oil while servicing the vehicles. #2. Kitchen/mess: 12 meters by 10 meters (40 feet by 32 feet) #3. Toilet/showers: has five visible toilet drains and two floor drains visible, along with a metal box inset in the foundation, presumably with a water valve inside. The foundation is partially covered with sand. #4. Concrete pad: 9 meters by 6 meters (30 feet by 21 feet) #5. Concrete pad: 15 meters by 6 meters (50 feet by 20 feet). Seven circular ammunition storage berms constructed of wood, sandbags, rock and soil measuring approximately 18 meters (60 feet) in diameter are also present. The July 2000 fire did not affect these bunkers. Very little debris is present, just a couple of empty 5-gallon oil cans (no leaks onto soil are evident), and fencing material in two piles (site 600-223).

Location: The unit is located at the southwest quarter of Section 19, Township 12 North, Range 26 East, 3.2 kilometers (2 miles) south of the 200 West Area and 0.4 miles east of the Rattlesnake Barricade on SR 240.

Process Description: This was the site of a U. S. Army anti-aircraft gun installation. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/Structures: The septic system associated with this site is 600-224. Site 600-223 is the associated pits containing fencing material.

Waste Type: Demolition and Inert Waste

Waste Description: The waste includes concrete walkways, concrete foundations, and ammunition storage berms constructed of wood, sandbags, rock and soil.

Code: 600-41 **Classification:** Accepted
Names: 600-41; H 70 Anti-Aircraft Artillery (AAA) Site **Reclassification:** Rejected (4/11/2002)
Type: Military Compound **Start Date:** 1/1/1951
Status: Inactive **End Date:** 1/1/1963

Description: The unit is an abandoned Military Installation (H-70) consisting of a few covered foundations and cleared areas. Some man-made mounds were present. There is a paved road and a few trees at the site. During the April 16 and April 19, 1999, visits, two earthen mounds were observed as well as the remains of several foundations. The site is overgrown with approximately 0.9 meter (3 foot) tall sagebrush, making it difficult to discern either features or the edges of the site. There are several opens areas covered with cheatgrass. Scattered pieces of metal, concrete, glass and transite were observed. A burn pit/dump had traces of burned wood, glass and transite. A burrow going into the center of the dump also shows buried glass.

Location: The unit is located approximately 4.2 kilometers southwest of the Vernita Bridge rest area. The site is on the west side of Highway 24, behind Gate 122.

Process Description: This camp is the site of an anti-aircraft battery. Structures reported to have been at the site include administration, classroom, supply and day rooms, barracks, and latrine facilities. The electrical power was provided by overhead wires; water supplied by the "McGee Well;" and the camp was serviced by a septic tank and drain field.

Code: 600-42 **Classification:** Accepted
Names: 600-42; H 71 Anti-Aircraft Artillery (AAA) Site **Reclassification:** Rejected (4/11/2002)
Type: Military Compound **Start Date:** 1/1/1951
Status: Inactive **End Date:** 1/1/1963

Description: The site is an abandoned military installation. The structures have been removed. The site is accessed by a northeast trending primitive road that runs through it. Berms run along the south side of this road and the remains of barbed wire fences can be found on either side. Well 699-68-105 is found near the northern edge of the site. The marker for this well is a good landmark. Most of the evidence of the site is found on the north side of the road. During the April 16, 1999, visit, evidence of a small tile field was found. It appeared as though the septic tank associated with the tile field has been removed or has collapsed. A pit that could have housed a second septic tank was found on the south side of the road that runs through the site. No evidence of a second tile field was found. A concrete walkway and a rock walkway were found. Wood debris, glass and concrete chunks were found, as well as a metal lid stamped "120 MM GUN" and "CONT M79A." An approximately 1.2 meter (4 foot) by 2.4 meter (8 foot) underground bunker was discovered. Its wooden roof is collapsing and presents a physical hazard. The depth of the bunker could not be estimated. Numerous areas with little or no vegetation were also observed around the site. Evidence of an old orchard can be found north of the site. The orchard can be seen in photo # 02646. Within the old orchard is an earthen mound with vegetation growing on its sides but not on its crown.

Location: The site is located approximately 1.6 kilometers southwest of the Vernita Bridge rest area on Highway 24.

Code: 600-43 **Classification:** Accepted

However, the man made mounds were created when the surface was bulldozed in preparation for the coal pile. No waste materials are in evidence.

Location: The site is located approximately 200 meters (656 feet) north-northeast of the old Hanford High School and northwest of the pump house. It is on the east side of Avenue A.

Waste Type: Misc. Trash and Debris

Waste Description: The waste is coal dust remaining from the coal that was stored at the site.

Code: 600-53

Classification: Not Accepted

Names: 600-53; H-51 Anti-Aircraft Artillery Site
Building Foundations

Reclassification: None

Type: Foundation

Start Date:

Status: Inactive

End Date: 1/1/1958

Description: Six building foundations and concrete pads were observed at this site and are described as follows: #1. 12.5 meters by 10 meters (41 feet by 33 feet), concrete foundation with 4 floor drains #2. 15.6 meters by 6.1 meters (51 feet by 20 feet), concrete pad with 8 toilet drains and 11 sink/floor drains #3. 6.1 meters by 15.3 meters (20 feet by 50 feet), concrete foundation #4. 6.7 meters by 15.3 meters (22 feet by 50 feet), concrete foundation #5. 5.5 meters by 3.3 meters (18 feet by 11 feet), Concrete pad #6. 7.3 meters by 5.8 meters (24 feet by 19 feet), Concrete pad.

Location: The H-51 Gun Site is on Army Loop Road, southwest of 200 West Area. This site is located in the southeast quarter of Section 15, Township 12 North, Range 25 East.

Process Description: This is the location of a former U. S. Army anti-aircraft gun site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: The site's dumping areas are 600-220; 6607-3 is the site septic system.

Waste Type: Demolition and Inert Waste

Waste Description: Concrete building foundations and concrete pads

Code: 600-55

Classification: Accepted

Names: 600-55; Paved Area and Collapsed Structure

Reclassification: Rejected (10/1/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a dumping area that consists of an asphalt paved area which may have been a parking

lot, miscellaneous farm debris and a collapsed wooden building. The pre-Hanford farm debris is scattered approximately 135 meters (443 feet) to the east of the paved area. There is also a cellar and an old stove near the collapsed wooden structure.

Location: The asphalt paved area is located to the west of the 100K Area, southeast of the Allard Pumping Station and to the southwest of the 128-K-2 Burn Pit.

Waste Type: Misc. Trash and Debris

Waste Description: The miscellaneous debris at the site consists of asphalt paving, empty paint and paint solvent containers, an empty antifreeze container, a fan belt, wood, and metal.

Code: 600-56

Classification: Accepted

Names: 600-56; Pre-Hanford Farm Site; Undocumented Solid Waste Site

Reclassification: Rejected (9/9/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is the abandoned waste from what appears to be a pre-MED (Manhattan Engineering District) farm. The site is identifiable by scattered debris, piles of rocks, and an excavated pit.

Location: The site is located southwest of the 128-B-2 Burn Pit and south of well 699-71-77.

Waste Type: Misc. Trash and Debris

Waste Description: Miscellaneous waste at the site included wood, metal buckets, cans, and wire fencing.

Waste Type: Batteries

Waste Description: Several aging dry cell batteries were found at the site. In September 1997, a field visit was performed by B. D. Schilperoort. He examined the batteries and noted that they appeared to have been in a fire. Some material was removed from the inside of a battery surrounding a carbon electrode. A 50/50 test for corrosivity found neutral pH. A lead test swab found no evidence of lead. The conclusion based on the field investigation was that no hazardous constituents remained in the batteries.

Code: 600-61

Classification: Discovery

Names: 600-61; White Bluffs Substation

Reclassification: None

Type: Electrical Substation

Start Date: 1/1/1976

Status: Active

End Date:

Description: The waste site consisted of potential contamination of the soil from the electrical equipment at the substation.

Location: The substation is located northwest of the Hammer Training Facility off of Horn Rapids Road. The site name has nothing to do with the location.

Process Description: The electrical equipment at the substation included transformers, couplings, capacitors, circuit breakers, reclosers, voltage regulators, switches, and cable. Release occurred from storage tank No. 2.

Waste Type: Oil

Waste Description: The White Bluffs Substation used petroleum oil, primarily mineral oil, as insulation in electrical equipment. Insulating oil was a highly refined, 10-weight petroleum oil with approximately 0.1 percent 2,6-di-terbutyl-paracresol (an antioxidant known as BHT that was also used as a food

additive) and varying amounts of polychlorinated biphenyls (PCBs) to increase dielectric strength. The aboveground tanks contained mineral oil which was used as make-up oil for equipment maintenance or cleaning.

Code:	600-62	Classification:	Accepted
Names:	600-62; Benton Switch Substation Releases	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1948
Status:	Active	End Date:	
Description:	The substation is currently active and is enclosed in a locked, chain link fenced area. It began operations on November 11, 1948. The site contains various electrical equipment, circuit breakers, transformers, tanks, and support facilities. The primary environmental concern stems from leaking insulating oil from transformers and circuit breakers. A site visit on November 20, 1998, observed several areas of discolored gravel and stained concrete beneath vessel valves.		
Location:	The substation is located northwest of the northernmost tip of Wooded Island, near the river, at the north end of a gravel utility access road. It is east of the Energy Northwest (Washington Public Power Supply System) property.		
Release Description:	A number of releases have been associated with the facility. (See releases section). The switchyard has had past mineral oil spills and detections of polychlorinated biphenyls (PCBs) in the the soil.		
Process Description:	This substation is part of the Bonneville Power Administration main transmission grid, that conducts electrical power from the Columbia and Snake Rivers dams to five states (Washington, Oregon, Idaho, western Montana, and northern California). The BPA transmission grid is divided into four subareas. The substations on the Hanford Site are within the Snake River subarea. The substations use petroleum oil, primarily mineral oil, as insulation in electrical equipment. This includes transformers, coupling and potential devices, capacitors, circuit breakers, reclosers, voltage regulators, switches, and cable. Insulating oil is a highly refined, 10-weight petroleum oil with approximately 0.1 percent 2,6-di-tertbutyl-paracresol (an antioxidant known as BHT that is also used as a food additive) and varying amounts of polychlorinated biphenyls (PCBs) to increase dielectric strength. All of the substations have above ground tanks of mineral oil, that is used as make-up oil for equipment maintenance of electrical equipment. Solvents are used for cleaning and degreasing operations. Once maintenance is completed, rags soaked in solvent and all personal protective clothing are to be placed in drums for transport to the generator storage area at the H. J. Ashe Substation. All equipment filled with mineral oil is regularly analyzed for PCB concentration. All untested and unmarked equipment is assumed to be PCB contaminated. Electrical equipment fluid is assumed to be PCB, if the manufacturer's manuals or nameplates do not identify the type of dielectric fluid in the equipment, or if the equipment is known to be PCB according to available information.		
Waste Type:	Oil		
Waste Description:	The waste is soil potentially contaminated with polychlorinated biphenyls (PCBs) (Arochlors 1254 and 1260), insulating oil (10-weight petroleum oil with 0.1% 2,6-di-tertbutyl-paracresol). Mineral oil containing PCBs and solvents are the hazardous constituents used at the site.		

Code:	600-64	Classification:	Not Accepted
Names:	600-64; Sanitary Waste Tie-Line from the 400 Area to WPPSS; Underground Sanitary Sewer Line from 400 Area to WPPSS	Reclassification:	None

Type:	Sanitary Sewer	Start Date:	1/1/1997
Status:	Active	End Date:	
Description:	This underground, gravity flow line begins at the inlet to the 4607 Sanitary Sewer septic tanks and connects the 400 Area sanitary sewer main (also known as the 4903 Sanitary Sewer Main) with the Washington Public Power Supply System sewage treatment facility. The sewer line route appears as a disturbed area covered with sand and little vegetation. Washington Public Power Supply System signs posted along the route mark the existence of an underground sewer line.		
Location:	The new sewer line extends eastward from the existing 400 Area Septic Tanks (WIDS Site 400-7) to the existing Washington Public Power Supply System sewer line. The line crosses under the Route 4 South highway. The tie-in is located approximately 4.8 kilometers (3 miles) northeast of the 400 Area.		
Related Sites/ Structures:	The site is associated with the 4607 Sanitary Sewer, 4607 Sanitary Tile Field, 4607 Sanitary Sewer Lagoon, and the 4903 Sanitary Sewer Main.		
Waste Type:	Sanitary Sewage		
Waste Description:	Site personnel report that a small amount of sanitary wastes was unintentionally discharged into the tie-line (and, thus, the WPPSS sewage treatment facility), prior to reaching agreement with WPPSS in late 1992. The sanitary wastes remained with the underground tie-line and the treatment facility. No wastes were released to the environment. Radiation detection systems in the treatment facility indicated the presence of radioactive cobalt, cesium, and tritium beyond set limits. However, only tritium was confirmed to have been present in the sanitary wastes from the 400 Area. Water from 400 Area wells contains elevated levels of tritium, which may explain the presence of tritium in sanitary wastes.		

Code:	600-67	Classification:	Accepted
Names:	600-67; Bruggemann's Fruit Storage Warehouse	Reclassification:	Rejected (2/6/2001)
Type:	Storage	Start Date:	1/1/1922
Status:	Inactive	End Date:	1/1/1943
Description:	The Bruggemann's Warehouse site is the remaining single story warehouse, associated foundations, piping, and debris surrounding the site. During 1998 and 2000 field visits, an abandoned fuel tank was identified adjacent to the warehouse. The tank has a 0.6 meter (2 foot) filler pipe showing above ground. All other pipes seen in the area could be attributed to the facility water system. The building is considered culturally significant because of its good condition and use of native materials for construction. It is in the process (as of January 2001) for listing on the National Register of Historic Places. The main warehouse construction consists of local cobblestones in a concrete matrix. An extension of similar construction is present on the south end; it is unknown if this is original to the building or a later addition. The long axis of the warehouse runs north-south. The horizontal wood sheathing of the gable roof is still present on the rafters. On the southeast corner, however, the roof has caved in. Small nails in the roof sheathing indicate that shingles were probably present at one time. The roof overhangs the east and west walls. A cobblestone chimney emerges from the crest of the gable near the south end of the roof. On the west elevation, there is a distinct straight line of cobbles running along the length of the wall about 3 feet (0.9 meters) above grade. A wooden door with a wood frame is in the center of the elevation. On the south edge of the doorway is a wooden plank off its hinges that looks like a garage door. The doors are orange with dark brown decorative trim and each bears two wood frame windows. The north half of this wall has a distinctly straight line of cobbles about 2 feet (0.6 meters) above grade, similar to the west and north walls. On the south wall of the warehouse, there is a wood frame doorway just east of center. The cobblestone extension at the south end of the warehouse is missing its roof. Above		

most of the structure's doors and windows, the cobblestones are arranged to form decorative arches. The east wall appears to be the main entrance. On all four corners of the building and in the center of the east wall, decorative columns taper diagonally from the ground to the top of the wall. There is a wood frame doorway near the south end. A tall wood frame window south of the door, and two similar windows are north of the door. On the west wall is a single window. The north wall of the extension faces the warehouse, and there is approximately 1 meter (3 feet) between the two walls. In the center of the wall is a doorway with a small square window east of it. A large pile of cobbles lies outside the chain link fence south of the extension. Foundations to the east of the warehouse show other facilities related to fruit packing. A possible fruit washing facility shows evidence of two parallel tables with troughs underneath for draining. Also east of the warehouse is a round concrete foundation with heavy steel eyebolts, presumably to support a tank for pressurized water.

Location: The site is located approximately 1.1 kilometers (0.7 miles) east of the Vernita Bridge and State Highway 240. On the Hanford Site, the site may be accessed via Route 6 between miles 6 and 7.

Process Description: The following comments on life at the site (1937 - 1943) are from a telephone interview with Mary Bruggemann (she was married to Paul Bruggemann). She is now living in Yakima. They grew peaches, cherries, a new orchard of prunes, and a few wine grapes. The site had a river pumphouse for acquiring water for the orchards. Native Americans were hired during harvest time to pick fruit. Fruit was transported by truck and utilized the Hanford Engineering Works (HEW) train when it first came through. They also had a lot of sheep and a few cattle. The Bruggemann's had two employees.

Related Sites/ Structures: Remnants of previous structures at the site include a concrete pad located approximately north of the warehouse, and a concrete walkway that runs from the east side of the warehouse to a rectangular concrete foundation approximately 12 meters (40 feet) by 24 meters (80 feet). East of the foundation is the circular concrete foundation for the water tank, approximately 6 meters (20 feet) in diameter. West of the warehouse is the remnant of a house foundation. The area surrounding the warehouse consists of agricultural debris including vitrified clay piping for irrigation, dead fruit trees, and fencing material.

Waste Type: Storage Tank

Waste Description: The underground storage tank was used for storing fuel. Approximately 5 centimeters (1.97 inches) of water and fuel residue remained in the bottom of the tank in February 1998 and September 2000.

Waste Type: Misc. Trash and Debris

Waste Description: Farm debris was observed around the site including fence posts, pipe, food tins, buckets, farm machinery parts, barbed wire, and wire.

Code: 600-69

Classification: Not Accepted

Names: 600-69; Red Stained Soil (Rust)

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is an area of reddish soil that was discovered while a road grader was scraping an area for installation of a pipeline. As of July 14, 1997, the stain was disappearing. Some pinkish soil is visible on the surface. The area is covered with vegetation, including cheat grass, tumbleweeds, and rabbitbrush.

Location: The site is located west of 200 East. It is 600 meters (1969 feet) west of the 200 East perimeter fence, west of Route 4 South, and northwest of 2704HV.

Code: 600-72	Classification: Accepted
Names: 600-72; H-12R; Wahluke Slope H-12-R Debris Site	Reclassification: Rejected (1/30/2003)
Type: Dumping Area	Start Date:
Status: Inactive	End Date:
Description: The site is an abandoned military radar and dump site that runs east-west approximately 5 acres in size. A gravel road forms the perimeter of the site. AEC (1993) lists only that it is associated with the H-14 and H-12 sites, and possibly built after 1956.	
Location: The site is northeast of 100-F Area on the opposite side of the Columbia River (Section 23, T 14N, R 27E). The site southeast of H-12L.	
Related Sites/ Structures: PSN-12/14, H-12L	
Waste Type: Construction Debris	
Waste Description: The primary hazard at this site is construction debris including domestic garbage, wood, oil cans, and 55 gallon drum. Visible debris has been removed.	

Code: 600-73	Classification: Accepted
Names: 600-73; Wahluke Slope Igloo Sites	Reclassification: Rejected (1/30/2003)
Type: Military Compound	Start Date:
Status: Inactive	End Date:
Description: This is the site of two ammunition storage "igloos." The buildings have been removed and the area has been cleaned up.	
Location: On Wahluke Slope, north of the 100 D Area at the upper east and west ends of a "T-shaped" gravel road.	
Waste Type: Misc. Trash and Debris	
Waste Description: The debris at this site included a stock watering drum, glass bottles, tin cans, barbed wire, and other garbage. The debris has been removed.	

Code: 600-74	Classification: Accepted
Names: 600-74; Motor Pool Dump; Wahluke Slope PSN 12/14 Military Construction Dump	Reclassification: Rejected (1/30/2003)
Type: Military Compound	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1960
Description: This military construction and motor pool dump site is located approximately 2/3 miles north and east of the PSN 12/14 camp location. It is an area of building remains, trash and debris extending in an east-west direction near the border of sections 13 and 24 in Section T14N R27E. Lubricant cans and automobile parts suggested some of the trash may be from a military motor pool. Construction debris (boards with nails) is all that remained in 2001.	
Location: The site is located 1 kilometer (2/3 mile) north and east of waste site PSN 12/14 (600-17). The site extends from east to west near the borders of sections 13 and 24 in Section T14N R27E.	
Related Sites/ Structures: This site is associated with the MIL-PSN 12/14 (600-17) and the MIL-H-12C, Battery B Nike Missile Control Center (600-10) sites. It is suspected that this dump area was used as part of the	

600-10 and 600-17 site demolitions.

Waste Type: Construction Debris
Waste Description: Miscellaneous debris and trash from demolished wooden buildings, automobile parts and 1 gallon and 5 gallon oil cans. The automobile parts and cans suggest the trash may have come from a motor pool.

Code: 600-75 **Classification:** Accepted
Names: 600-75; Wahluke Slope PSN 80 Debris Site **Reclassification:** Rejected (1/30/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is no longer visible. The debris was removed. According to Roos (1990), the site is similar to the H-12R site (600-72) and the "Radar" sites (600-76). It is roughly oval and surrounded by a gravel road. Roos found two locations with four small concrete pads with imbedded bolts, but thought that there should be three sets of pads. He found only one concrete building foundation, and no obvious disposal pits.
Location: The site is located northwest of 100 B Area, on the opposite side of the Columbia River (14N, 26E, section 16)
Related Sites/Structures: The site contained a 160-meter (522-foot) well and pumphouse, metal pre-fab buildings, and septic system, with no fuel tanks listed (Anonymous 1993). After 1956 the identity of the site was merged with Nike site H-83L (WIDS site 600-13), the use permit terminated in 1960, and the site later destroyed (Anonymous 1993).
Waste Type: Misc. Trash and Debris
Waste Description: The debris at this site included building materials, insulators, glass bottles, tin cans, cable, and other garbage. Two septic tanks openings were discovered at this site. These tanks were filled with 12.2 cubic meters (16 cubic yards) of concrete. The debris was picked up. An area of petroleum-contaminated soil around a concrete well structure was excavated and five 208 liter (55-gallon) drums of contaminated soil were removed.

Code: 600-76 **Classification:** Accepted
Names: 600-76; Underground Rooms; Wahluke Slope Radar Site **Reclassification:** Rejected (1/30/2003)
Type: Military Compound **Start Date:**
Status: Inactive **End Date:**
Description: The site is roughly oval, approximately 400 meters (1/4 mile) by 370 meters (400 yards), and surrounded by a gravel
Location: The site is a radar site with underground rooms on Wahluke Slope, north of the 100H area and just north of Highway 24. It is southeast of PSN 04 (600-15).

Code: 600-77 **Classification:** Accepted
Names: 600-77; Antiaircraft Gun Shrapnel Sites 1, 2, and 3; Wahluke Slope Shrapnel Sites **Reclassification:** Rejected (1/30/2003)
Type: Military Compound **Start Date:**
Status: Inactive **End Date:**
Description: The shrapnel sites are three nearby but separate areas containing shrapnel from antiaircraft gun

firing on the North Slope.

Location: There are three shrapnel sites located on the North Slope. Site 1 is east of 100H area and north of the electrical transmission lines, 1/2 mile north of the White Bluffs boat landing, west of the old highway (Section 22, T 14N, R 27E). Site 2 is located northeast of 100F area, north of the railroad track, south of Highway 24, and northeast of PSN 12/14 (Section 8, T 14N, R 28E), Site 3 is located north of 100-D Area and south of the Igloo Site in the Saddle Mountain National Wildlife Refuge (Section 2, T 14N, R 26E).

Waste Type: Ordnance

Waste Description: Two pieces of aluminum or magnesium shrapnel have been found at Shrapnel Site 2. Two pieces of iron or steel shrapnel have been found at Shrapnel Site 3. At the major shrapnel area, Shrapnel Site 1, it is reported that over 100 lbs (45 kg) of shrapnel has been found. Shrapnel consists of iron fragments and aluminum or magnesium fuze ring pieces.

Code: 600-78

Classification: Accepted

Names: 600-78; Power Pole 12-3 Cistern; 12-3 Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: The cistern is approximately 1.5 meters (5 feet) in diameter by 2.4 meters (8 feet) deep. Debris was removed and it was filled with gravel.

Location: The site is located east-southeast of the 100F Area, on the opposite side of the Columbia River. It is near power pole 12-3, and close to the point where the electrical transmission lines change direction from northeast to north. (SW 1/4 of NW 1/4 Section 8, T 13N, R 28E)

Waste Type: Demolition and Inert Waste

Waste Description: The homestead cisterns were relatively free of debris, except for wood. The cistern was filled with approximately 10 yards³ (7.7 m³) of pit-run gravel. Nearby debris has been removed.

Code: 600-79

Classification: Accepted

Names: 600-79; Wahluke Slope Clay Pit Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: The clay pit cistern is a circular, concrete-lined pit approximately 1.7 meters (5 feet 6 inches) deep and 1.5 meters (5 feet) wide that has been backfilled with gravel. It is located near a pit that was used to obtain clay for lining irrigation canals. No obvious disposal pits remain from the homestead.

Location: Northeast of 100H area, on the opposite side of the Columbia River. It is north of Highway 24, south of the Wahluke Branch Canal, and east of the White Bluffs Wasteway. (SE 1/4 of NE 1/4 Sectio 27, T 15, R 27E)

Waste Type: Demolition and Inert Waste

Waste Description: The debris at this site included glass bottles, tin cans, asbestos pipe, and other garbage.

Code: 600-80

Classification: Accepted

Names: 600-80; Wahluke Slope Cow Camp Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive **End Date:**

Description: The cistern is approximately 1.4 meters (4 feet 9 inches) in diameter and backfilled with gravel. A depth value was not estimated during original site investigation because the cistern was filled with debris. Later documents do not mention a measured depth.

Location: Located northeast of the 100H Area, south of the Wahluke Branch Canal and north of Highway 24. (SE 1/4 of NE 1/4 of Section 26, T 15, R 27E)

Waste Type: Demolition and Inert Waste

Waste Description: The debris at this site included glass bottles, tin cans, and other garbage. Several of the empty bottles were from livestock antibiotic and pesticide for delousing cattle.

Code: 600-81 **Classification:** Accepted

Names: 600-81; Wahluke Slope Homestead Cistern **Reclassification:** Rejected (1/30/2003)

Type: Settling Tank **Start Date:**

Status: Inactive **End Date:**

Description: The site is a pre-Hanford cistern measuring approximately 1.52 to 1.83 meters (5 to 6 feet) in diameter and backfilled with gravel.

Location: East-northeast of the 100F area, southeast of the area where the north-south electrical transmission line crosses the east-west electrical transmission line.

Waste Type: Misc. Trash and Debris

Waste Description: The debris at the bottom of the cistern appeared to be homestead-associated food containers.

Code: 600-82 **Classification:** Accepted

Names: 600-82; Wahluke Slope Overlook Cistern **Reclassification:** Rejected (1/30/2003)

Type: Catch Tank **Start Date:**

Status: Inactive **End Date:**

Description: Roos (1990) reported two unfenced cisterns at this homestead location; one cistern measures 2.5 meters (8 feet) in diameter and 4.3 meters (14 feet) deep, and the other is 1 meter (3.5 feet) across by 1.2 meter (4 feet) deep.

Location: This site is on Wahluke Slope northeast of the Hanford townsite, southeast of 100F area, and near the bluffs overlooking the Columbia River.

Waste Type: Demolition and Inert Waste

Waste Description:

Code: 600-83 **Classification:** Accepted

Names: 600-83; Wahluke Slope Stock Tank Cistern **Reclassification:** Rejected (1/30/2003)

Type: Catch Tank **Start Date:**

Status: Inactive **End Date:**

Description: The stock tank cistern is approximately 3.7 meters (12 feet) by 3.7 meters (12 feet) by 1.2 meters (4 feet) deep with the top of the tank about 0.6 meters (2 feet) above the ground surface (Roos 1994). There were many metal cans in the area, as well as lumber used for fencing and corrals.

No homestead structure was found. A well with an approximate 20 centimeters (8 inches) diameter casing is north of the tank cistern.

Location: The site is located on the opposite side of the Columbia River, east-northeast of 100-F Area, near the electrical transmission lines. It is on a power line road that ends at the Wahluke Branch Wasteway. A large sand dune is at the east end of the road. The cistern is at the southwest end of the sand dune. (NW 1/4 of SW 1/4 Section 29, T 14N, R 28E)

Waste Type: Demolition and Inert Waste

Waste

Description:

Code: 600-84

Classification: Accepted

Names: 600-84; Wahluke Slope Wagon Road Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: The cistern is approximately 2.4 meters (8 feet) in diameter by 2.4 meters (8 feet) deep.

Location: The cistern is located on Wahluke Slope, east of the 100F Area and north-northwest of the Hanford townsite on the opposite side of the Columbia River. (NW 1/4 of NE 1/4 Section 6, T 13N, R 28E)

Waste Type: Demolition and Inert Waste

Waste Debris at this site included glass bottles, tin cans, and other garbage.

Description:

Code: 600-85

Classification: Accepted

Names: 600-85; Wahluke Slope Stove Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: This cistern is located on Wahluke Slope, east of 100-F Area, east-southeast of 100-H Area.

Waste Type: Demolition and Inert Waste

Waste

Description:

Code: 600-86

Classification: Accepted

Names: 600-86; Wahluke Slope Wasteway Cistern

Reclassification: Rejected (1/30/2003)

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: The cistern is approximately 2.4 meters (8 feet) in diameter by 0.9 meters (3 feet) deep. The walls are partially collapsed. The cistern has been filled with gravel. Roos (1990) reported that the cistern was mostly destroyed and filled in.

Location: The cistern is located on Wahluke Slope, northeast of 100H Area, near the Wahluke Branch Canal and the White Bluffs Wasteway. (SE 1/4 Section 22, T 15N, R 27E)

Waste Type: Demolition and Inert Waste

Waste Debris at this site included glass bottles, tin cans, cable, concrete, and other garbage.

Description:

Code: 600-87 **Classification:** Accepted
Names: 600-87; Wahluke Slope Dune Homestead **Reclassification:** Rejected (1/30/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The homestead site contained buildings and a domestic trash disposal area.

Location: It is located on Wahluke Slope, east of 100F Area and northeast of the Hanford Townsite on the opposite side of the Columbia River. The homestead is near a series of sand dunes. (SW 1/3 of NE 1/4 Section 32, Y 14N, R 28E)

Waste Type: Misc. Trash and Debris

Waste Description: Debris consisted of domestic trash, parts of a barn or shed, parts of a flour mill, carriage pieces and a harness.

Code: 600-88 **Classification:** Accepted
Names: 600-88; Wahluke Slope Lonetree Homestead **Reclassification:** Rejected (1/30/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site contains a single live cherry tree, several dead trees and some small disposal areas. No above ground structures remain.

Location: The site is located on Wahluke Slope, east-northeast of the Hanford Townsite and southeast of the 100F Area, on the opposite side of the Columbia River. (SE 1/4 of NW 1/4 Section 20, T 13N, R 28E)

Waste Type: Misc. Trash and Debris

Waste Description: Debris consisted of metal cans and broken glass.

Code: 600-89 **Classification:** Accepted
Names: 600-89; Wahluke Slope Asphalt Batch Plant **Reclassification:** Rejected (1/30/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site is a graveled area about 0.8 hectares (2 acres) in size located on the Wahluke Slope. The site is north-northeast of the 100-D Area and south of Highway 24. It was apparently used as a temporary batch plant for mixing asphalt for paving operations. Two adjacent pits on site were empty. Another 4.6- by 4.6-meters (15- by 15-feet) area was used for disposal of concrete. The original users of the area are unknown.

Location: The site is located on Wahluke Slope, north-northeast of the 100-D Area and south of Highway 24 (NE 1/4 Section 4, T 14N, R 26E)

Waste Type: Demolition and Inert Waste

Waste Description: Debris from this site included asphalt, concrete, sheet metal, and other debris.

Code: 600-90 **Classification:** Accepted
Names: 600-90; Wahluke Slope Coyote Bait Can/Bait Station **Reclassification:** Rejected (1/30/2003)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: This unit is composed of two separate sites, both on Wahluke Slope. The Coyote Bait Can is located southeast of 100F area and northeast of the Hanford Townsite. A large military ammunition box was partially buried at this site. The lid of the box was marked "BAIT CAN." Evidence in the area suggest that it was once used to store bait for coyote trapping. The Coyote Bait Station is east of the bait can, near the eastern edge of the wildlife area. At this location, over 50 coyote skulls were counted. Large animal bones in the area indicated that a poisoned carcass was most often used for bait. Historical records report that trappers would poison horse carcasses to attract and kill the coyotes for their pelts. Bones at this location were old and may predate government control of the land (Roos 1990).

Location: The sites are located southeast of 100-F Area on the opposite side of the Columbia River on Wahluke Slope (SW 1/4 Section 18, T 13N, R 28E and NE 1/4 Section 17, T 13N, R 28E)

Code: 600-91 **Classification:** Accepted
Names: 600-91; Pit 47; Wahluke Slope Gravel Pit #47 **Reclassification:** Rejected (1/30/2003)
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**

Description: The site is made up of two apparently active gravel pits. The smaller pit had been used as a disposal area.

Location: The site is located on Wahluke Slope, northeast of 100B Area, 1/4 mile south of Highway 24 at mile marker 47.

Waste Type: Misc. Trash and Debris
Waste Description: The debris at this site included building materials, glass bottles, tin cans, paint cans, cable, concrete, oil cans, and other garbage in the far pit. There was a significant amount of oil contaminated soil.

Code: 600-92 **Classification:** Accepted
Names: 600-92; Borrow Pit #56; Pit 56; Wahluke Slope Gravel Pit #56 **Reclassification:** Rejected (1/30/2003)
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of several borrow pits.

Location: The site is located on Wahluke Slope, north-northwest of 100D Area and north of Highway 24.

Waste Type: Demolition and Inert Waste
Waste Description: Debris included communications wire, timbers, bottles, cans, barbed wire fencing, and fence posts. Potentially hazardous items identified included one 19 liter (5-gallon) can full of dead beetles (possible herbicide/insecticide) and two 19 liter (5-gallon) oil cans with liquid.

Code: 600-93 **Classification:** Accepted

Description: The site is sandy and mostly unvegetated. The site has been scraped for material to cover the adjacent burial ground. No waste was observed in the area in 1995, except for a large pile of tumbleweeds that were removed from the fence surrounding the 618-10 Burial Ground.

Location: The site is located west of Route 4 South between milepost 17 and 18. It is adjacent to the southwest corner of the 618-10 Burial Ground.

Related Sites/ Structures: The 618-10 Burial Ground is associated with the unit.

Waste Type: Vegetation

Waste Description: A large pile of tumbleweeds was observed.

Code: 600-97 **Classification:** Not Accepted

Names: 600-97; 618-11 Borrow Pit **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The site is located in a slight depression where 0.3 to 0.6 meters (1 to 2 feet) of soil has been removed to cover the 618-11 Burial Ground.

Location: The site is located approximately 1,500 meters (4,920 feet) west, northwest of Washington Public Power Supply System Plant Number 2 and just north of the 618-11 Burial Ground.

Code: 600-118 **Classification:** Accepted

Names: 600-118; Contaminated Soil Northwest of Gable Mountain Pond; Hot Spot Northwest of Gable Mountain Pond **Reclassification:** Consolidated (4/26/2000)

Type: Ditch **Start Date:**

Status: Inactive **End Date:**

Description: This overflow site has been consolidated with its source, the 216-A-25 Gable Mountain Pond. The stabilized site begins northwest of 216-A-25 Pond, and was formerly an overflow trench from 216-A-25 (Gable Mountain Pond) that ran north-south, approximately 0.9 meters (6 feet) deep. The site extends north, under the power lines where the site widens. The trench deepened again north of the power lines, so the site is narrower there, and fades out in a wider, but shallower area at the north end. The area outside the stabilized area is vegetated with sagebrush and cheatgrass. The stabilized area is sparsely vegetated with cheatgrass, crested wheatgrass, and Sandberg's bluegrass. The area is posted as an "Underground Radioactive Material" area.

Location: The site is located adjacent to (north side) the 216-A-25 (Gable Mountain Pond) stabilized overflow area.

Related Sites/ Structures: This site is an overflow area from 216-A-25 (Gable Mountain Pond), as evidenced by aerial radiation surveys and topographic relief maps showing a naturally downward flow direction toward this overflow area for water in Gable Mountain Pond.

Waste Type: Soil

Waste Description: The waste site was identified in the 1996 Flyover Survey and reported on April 11, 1996.

Description:

The Site Was Consolidated With:

Code: 216-A-25
Names: 216-A-25; 216-A-25 Swamp; Gable Mountain Pond; Gable Mountain Swamp; Gable Pond

Code: 600-121 **Classification:** Accepted
Names: 600-121; Coal Ash Piles; White Bluffs Coal Ash Piles **Reclassification:** Rejected (10/6/1997)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is several small coal ash piles located just east of the Pickling Acid Cribs.
Location: The site is located south of Federal Avenue and west of Route 2 North. The site is just east of the White Bluffs Pickling Acid Cribs (600-106).
Waste Type: Ash
Waste Description: The waste is coal ash that has been placed in piles (discernible units).

Code: 600-122 **Classification:** Not Accepted
Names: 600-122; White Bluffs Large Fenced Depression **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: The eastern boundary of the site once was a power distribution line and powerline road. Power poles were removed by cutting them off just above the ground surface. Glass insulator material litters the area. Just west of this powerline is the fencing that surrounds the site. The fence is wood post and wire enclosure that appears to have been installed to keep deer out of the area. The fence is in very poor condition.
Location: The site is located west of Route 2 North and south of Federal Avenue, adjacent to a powerline road. It is southwest of the White Bluffs Pickling Acid Cribs (600-106).

Code: 600-123 **Classification:** Not Accepted
Names: 600-123; Farm Site; White Bluffs Farm Site **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site was a farm site. One source indicates that it may have been occupied by the army for a period of time indicates the site is littered with waste debris, including battery cores, broken glass, concrete, cans, bottles, wire, machinery parts, and other domestic wastes (Carpenter, 1994). A site visit done on August 16, 1996 did not find any battery cores or evidence of military debris. Two of the building foundations are deep and open to the surface. One of these is filled with concrete rubble, piping and debris. There is one concrete slab that could be a building foundation and one small concrete structure that is approximately 1.2 meters (4 feet) by 0.9 meters (3 feet) and is approximately 0.9 meters (3 feet deep).
Location: The site is located west of Route 2 North and south/southeast of Federal Avenue. It is southwest of the White Bluffs Large Fenced Depression (600-122) and approximately 1700 meters (1.1 miles) southwest of the intersection of Route 2 North and Federal Avenue.
Waste Type: Misc. Trash and Debris
Waste Description: The waste is farm debris, including sheep fencing, irrigation and other farming equipment,

Description: scattered household debris, and foundations for buildings. No evidence of army occupation remains. There is no evidence of any hazardous materials, and is a residential, not industrial site.

Code: 600-126 **Classification:** Not Accepted

Names: 600-126; Small Subsidence; White Bluffs Small Subsidence **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:**

Status: Inactive **End Date:**

Description: The site is a subsurface concrete structure that appears to be about 1.2 meters (4 feet) across. Soil around the structure has subsided into its underground void space. A few feet behind is a vertical pipe that opens into the void beneath the structure.

Location: The site is on a low rise located west of Route 2 North and north of Federal Avenue. It is 650 meters (2133 feet) southwest of the intersection of Federal Avenue and Route 2 North.

Related Sites/ Structures: 600-126, 600-166, 600-165 and 600-170 all appear to be part of a related underground piping system.

Waste Type: Construction Debris

Waste Concrete

Description:

Code: 600-130 **Classification:** Not Accepted

Names: 600-130; American Pipe Company Facilities; Stephensen's Cement Pipe Factory **Reclassification:** None

Type: Fabrication Shop **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of remnants of the following facilities: valve box and 2 inch water line, concrete foundation, warehouse foundation, concrete sump attached to warehouse foundation, debris pile, foundation, potential smokestack base, and small subsidences that appear to be rotted wooden poles. The area is littered with wood, metal parts, glass, burned building materials, and debris.

Location: The site is located northeast of Route 2 North, northwest of Federal Avenue, and northwest of the White Bluffs townsite. It is approximately 700 meters (2297 feet) north/northwest of the intersection of Route 2 North and Federal Avenue.

Waste Type: Misc. Trash and Debris

Waste The waste is miscellaneous trash and debris consisting of wood, metal parts, glass, burned

Description: building materials, and debris.

Code: 600-135 **Classification:** Accepted

Names: 600-135; Horseshoe Pit; Spare Parts Machine Shop Landfill; White Bluffs Spare Parts Machine Shop Landfill and Pit **Reclassification:** Rejected (1/26/1998)

Type: Burial Ground **Start Date:**

Status: Inactive **End Date:**

Description: This unit includes two potential waste sites. One site is called the Spare Parts Machine Shop

Landfill, also known as the horseshoe pit. It was once a borrow pit that was later used as a waste disposal site. The borrow pit was dug in a semicircle to the northeast of nearby warehouses (hence the name horseshoe pit). The site appears to have been backfilled over about one-half to two-thirds of its area. The second site is a pit oriented in the east-west direction located directly west of Spare Parts Machine Shop Landfill. This pit measures about 90 meters (300 feet) long by 40 meters (130 feet) wide. No documentation could be found to indicate the purpose of the pit.

Location: The site is located northeast of Route 2 North, northwest of Federal Avenue and southwest of the export water line road. The site is approximately 700 meters (2297 feet) northeast of the intersection of Route 2 North and Federal Avenue and almost due west of the intersection of Federal Avenue and the export water line road.

Related Sites/ Structures: A DuPont drawing indicates that the southwest corner of the site was the location of the MS-9 Warehouses. The same drawing indicates a well in the vicinity of the warehouses.

Waste Type: Asbestos (non-friable)

Waste Description: The entire area was covered with scattered transite siding.

Waste Type: Equipment

Waste Description: Equipment parts and pieces are scattered about the area.

Code: 600-136

Classification: Not Accepted

Names: 600-136; Insulation Warehouses; White Bluffs Insulation Warehouses

Reclassification: None

Type: Storage

Start Date:

Status: Inactive

End Date:

Description: The site is a warehouse area within the White Bluffs townsite. It is covered with cheatgrass with some rabbitbrush and tumbleweed growth. There is very little evidence of the former warehouse buildings except for a few pieces of wood. Pavement from the former Lincoln St. shown in the referenced documents is still visible south of the site and aided identifying the precise location in the field. There was no evidence of asbestos at the site.

Location: The site is located within the old townsite of White Bluffs, north of Federal Avenue and west of Route 2 North. It is approximately 160 meters (525 feet) northwest of the intersection of Route 2 North and Federal Avenue. Source documents show it's location on the north corner of the former Lincoln Street and Railroad Avenue, which remain visible.

Process Description: This warehouse was used for insulation materials.

Code: 600-138

Classification: Not Accepted

Names: 600-138; Fumigation Chamber Building; White Bluffs Fumigation Building

Reclassification: None

Type: Maintenance Shop

Start Date:

Status: Inactive

End Date:

Description: The site is the remains of a fumigation building. A field investigation was performed by T. F. Johnson on October 15, 1996. The terrain was flat with gravel surface soil and had cheatgrass and rabbitbrush vegetation. Very little evidence of the fumigation building remained at the

site. A few pieces of wood and concrete were observed in the area. A standing wooden post remained near the site which may have been part of the fence surrounding the building.

Location: The site is located approximately 220 meters (722) west of the intersection of Route 2 North and Federal Avenue and approximately 150 meters (492 feet) northwest of the corner of Commercial Avenue and Federal Avenue. The building was located about 37 meters (120 feet) northeast of Commercial Avenue.

Process Description: The building was used primarily to fumigate bedding materials.

Code: 600-140 **Classification:** Not Accepted

Names: 600-140; Gunny Sacks South of H-70 Antiaircraft Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is partially buried empty gunny sacks that appear to have been abandoned. The site was found on 01/11/95 during the Riverland field investigation.

Location: The site is located in the northwest portion of the Hanford Site, north of highway SR24, west of highway SR240 and approximately 1.9 kilometers (1.2 miles) west of gate 122 from highway SR240 and approximately 550 feet (170 meters) south southwest of the former antiaircraft site H-70 (Site Code 600-41).

Waste Type: Misc. Trash and Debris

Waste Description: The sacks were constructed of natural fibers.

Code: 600-141 **Classification:** Not Accepted

Names: 600-141; Barrels South of H-70 Antiaircraft Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is two empty containers. One container is an empty 113 liter (30 gallon) drum painted army green and yellow. The other appears to be an empty garbage can. Both containers are partially buried. No labels or markings were visible on the containers that would identify what they were used for.

Location: The site is located in the northwest portion of the Hanford Site, north of highway SR24, west of highway SR240 and approximately 1.9 kilometers (1.2 miles) west of gate 122 from highway SR240 and approximately 240 meters (800 feet) south of the former antiaircraft site H-70 (Site Code 600-41).

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: An empty steel drum and a garbage can were found at the site.

Code: 600-142 **Classification:** Accepted

Names: 600-142; Car Body at McGee Ranch Fish Farm **Reclassification:** Rejected (2/9/1998)

Type: Dumping Area **Start Date:**

Status: Inactive

End Date:

Description: The site is an abandoned automobile. The car is resting upside down on its roof and has been partially crushed. The engine, transmission, differential, and radiator remain in the car. No battery was found, the radiator appeared empty and no visible leaks of automotive fluids were observed.

Location: The site is located in the northwest portion of the Hanford Site, north of highway SR24, west of highway SR240 and approximately 1.1 kilometers (0.7 miles) west driving from gate 121 on highway SR240. The car is located at the McGee Ranch Fish Farm site, approximately 140 meters (450 feet) north of the McGee Well.

Waste Type: Equipment

Waste Description: The auto body is constructed of sheet metal and a steel frame.

Waste Type: Oil

Waste Description: The engine, transmission, and differential may contain oil or oil residue.

Description:

Code: 600-143

Classification: Not Accepted

Names: 600-143; Car Body at Ford Well

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a car body only. The engine, transmission, radiator, and battery have been removed. Several bullet holes were observed in the car body.

Location: The site is located in the northwest portion of the Hanford Site, north of highway SR24 and west of highway SR240. From gate 121 on SR 240 just north of the Yakima Barricade, drive west 0.8 kilometers (0.5 miles) to the T. Turn left and follow the main road south and then west for 3.2 kilometers (2.0 miles) to well site 699-49-111. Turn right, and drive north 1.1 kilometers (0.7 miles) to the site, just past the Ford Well site. The car body located approximately 180 feet (55 meters) north of the Ford Artesian Well.

Waste Type: Equipment

Waste Description: The car body is constructed of sheet metal and a steel frame.

Description:

Code: 600-144

Classification: Not Accepted

Names: 600-144; Car Body Near Top of Umptanum Ridge

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a car body only. The engine, transmission, radiator and battery have been removed. Several bullet holes were observed in the car.

Location: The site is located in the northwest portion of the Hanford Site, north of highway SR24 and west of highway SR240 and approximately 2.9 kilometers (1.8 miles) west northwest of gate 122 from highway SR 240 and approximately 0.2 kilometers (1/8 mile) south of the crest of Umptanum Ridge, on the east flank, just west of the road than leads to the ridge crest.

Waste Type: Equipment

Waste Description: The car body is constructed of sheet metal and a steel frame.

Description:

DESCRIPTION.

Code: 600-147 **Classification:** Not Accepted
Names: 600-147; Wood Shack (Northwest of Gable Mountain) **Reclassification:** None
Type: Office **Start Date:**
Status: Inactive **End Date:**

Description: The site is an old, very weathered, one-room wooden shack with a gable roof, one door, one window per side, and central heater, mounted on two wooden skids. It has at least 12 wells within 50 meters (160 feet), and is probably a well driller's shed, used to shelter the crews and hold equipment when the nearby wells were installed.

Location: The site is located on the north side of Gable Mountain and just north of the dirt road that runs east west along the north side of Gable Mountain. However, the shed is not visible from the road, because of a small rise between the road and shed. The site is best accessed by turning east just north of milepost 2 on Route 4 North. Continue east on the paved road until the road begins to turn up the mountain. At this point, continue straight ahead on the dirt road which continues east along the mountain. The site is located approximately 2.1 miles east from Route 4 North and east of the high voltage power lines that cross the dirt road. Follow a rough road leading north from the east-west road.

Waste Type: Equipment
Waste Description: The site is a small weathered, wooden building.

Code: 600-148 **Classification:** Accepted
Names: 600-148; Environmental Restoration Disposal Facility; ERDF **Reclassification:** None
Type: Landfill (Lined) **Start Date:** 7/1/1996
Status: Active **End Date:**

Description: Designed to be expanded as needed, ERDF comprises a series of cells or disposal areas. Each pair of cells is 70 feet deep, and 500 feet by 1,000 feet at the base, large enough to hold about 2.8 million tons of material. The fourth and largest expansion of ERDF was completed in January 2011. Two "super cells," each the equivalent of a pair of existing cells, were constructed using Recovery Act funds. Additional upgrades included new maintenance facilities, additional dump ramps and additional transfer areas for waste containers, all of which will enhance the safety of increased, daily operations.

With the addition of super cells 9 and 10, ERDF capacity is 16.4 million tons. At the 70-foot-base, ERDF covers the same areas as 52 football fields. To date (2011), nearly 11 million tons of contaminated material has been disposed in the facility. One of the key components of ERDF is the liner that is built into each cell. The liner consists of multiple layers of plastic and other impermeable materials and a system to collect and removed liquids as they drain through the waste materials. ERDF does not accept liquid waste for disposal, but water enters the facility when it rains and snows, and water also is used for dust control during routine operations. The collected water, or leachate, is collected and routed to an onsite treatment facility. After treatment, the liquid is clean enough to be returned to the ground with no harm to the environment.

Location: The Environmental Restoration Disposal Facility (ERDF) is located southeast of the 200 West Area and southwest of the 200 East Area.

Process Description: generated during the cleanup activities at the Site. It does not accept any non-Hanford waste. After each load is placed into ERDF, it is compacted. Earth movers equipped with high-tech ground monitoring equipment drive over the waste to eliminate any air pockets or gaps in the landfill. Hollow tubes or pipes are either filled with a cement material or are cut into pieces. This ensures there are no void spaces in the facility, which could result in the landfill sagging or settling, which could cause damage to the permanent cap that ultimately will cover the entire facility when it is no longer needed. In the meantime, a temporary cap is placed over cells as they are filled.

Related Sites/Structures: Leachate collected at the landfill will be managed at the 200 Area Effluent Treatment Facility, located in the 200 East Area, or other approved facility.

Waste Type: Equipment
Waste Description: The total volume of waste is expected to be less than 2.14E+07 cubic meters (2.8E+07 cubic yards) is expected to consist of approximately 10% to 15% wastewater pipelines, ancillary equipment, and associated soil contamination.

Waste Type: Soil
Waste Description: The total volume of waste is expected to be less than 2.14E+07 cubic meters (2.8E+07 cubic yards) and is expected to consist of approximately 65% to 75% contaminated soil and demolition debris.

Waste Type: Misc. Trash and Debris
Waste Description: The total volume of waste is expected to be less than 2.14E+07 cubic meters (2.8E+07 cubic yards) and is expected to consist of approximately 15% to 20% burial ground waste.

Code: 600-153 **Classification:** Not Accepted
Names: 600-153; Dumping Area Between River Mile Markers 29 and 30 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is pre-Hanford debris, such as a metal strong box, car springs, broken dishes, barbed wire, and wood.
Location: The site is located between mile markers 29 and 30 approximately 50 meters (50 yards) from the water or 0.4 kilometers (1/4 mile) south of river mile marker 29 on the west bank of the Columbia River.
Waste Type: Misc. Trash and Debris
Waste Description: Observed debris includes a metal strong box, car springs, culvert, piping, wire, barbed wire, old piping, glass, broken dishes, metal culvert and wood.

Code: 600-154 **Classification:** Not Accepted
Names: 600-154; RCRA General Inspection HIRIV-FY96 Item #6; Remains of Windmill **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is the remaining parts from an old windmill. The windmill was constructed of sheet metal and steel. An abandoned well was observed approximately 90 meters (295 feet) southwest of the windmill.

Location: left bank (facing downstream) of the Columbia River. On the USGS Map Coyote Rapids Quadrangle 7.5 minute series, the site is located about 200 meters (656 feet) east of the intersection labeled "Wahluke". If driving to the site, take the only paved road from highway SR24 to the river.

Waste Type: Equipment

Waste Description: The waste is parts from an old windmill which was constructed of sheet metal and steel.

Code: 600-155

Classification: Not Accepted

Names: 600-155; Dumping Area Upstream of River Mile Marker 35 Identified During RCRA General Inspection #HIRIV-FY96 Item #7

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of an old rusty machine part with approximate dimensions of 1.8 meters by 1.2 meters by 0.6 meters (6 feet x 4 feet x 2 feet). The part is marked with a small metal tag "USA-HEW 355464/ Property of US Government." The surrounding soil is silty sand and cobbles, with moderate cheatgrass and bunchgrass vegetation. Nearby flood debris consists of tree branches and small logs. There are no other large pieces of metal or construction type material. The surface of the access road is sand and gravel. During visits to the site on February 1, 1999, and February 3, 1999, other debris was observed. This debris included: a chunk of concrete, an old muffler, a piece of metal that looked as though it could have come from the piece of machinery, other metal debris, a tire and wood debris (not flood debris). This miscellaneous debris is primarily south of the piece of machinery and most is within 100 meters (328.1 feet). A field visit on July 19, 1999, verified that the large piece of equipment had been removed. A small piece of metal (approximately 0.46 meters (18 inches) in length) remained half buried in the soil.

Location: The site is approximately 250 meters (810 feet) upstream from mile marker 35 and approximately 80 meters (260 feet) from the river shoreline. The site is visible from the road.

Process Description: The purpose of this piece of equipment is unknown.

Related Sites/ Structures: The origin of this piece of equipment is unknown.

Waste Type: Equipment

Waste Description: The waste is steel scrap. The metal tag contains "USA-HEW-355464". "HEW" stands for Hanford Engineering Works which was the name used during the era of reactor construction. Therefore, the material is not pre-Hanford historic waste.

Code: 600-156

Classification: Accepted

Names: 600-156; Construction Debris Dump Site

Reclassification: Rejected (12/7/2005)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: Scattered fragments of plastic are the only remaining debris at this site, which was formerly used as a construction dump.

Location: This site is on the east side of 200 East Area, east of the southeast corner of the Grout Treatment Facility Landfill (currently the Waste Treatment Plant construction area).

Waste Type: Construction Debris
Waste Description: In 1996, the waste was construction debris consisting of wood, broken concrete and galvanized metal pipe. In April 2002, only scattered fragments of plastic remained.

Code: 600-157 **Classification:** Not Accepted
Names: 600-157; White Bluffs Concrete Foundation Pads **Reclassification:** None
Type: Foundation **Start Date:**
Status: Inactive **End Date:**

Description: The site is described as several concrete foundation pads. Some of these pads have tie-down straps. Apparently these pads were used to support wooden warehouse buildings. The buildings were probably intentionally destroyed by fire, as the ground surface is littered with charred wood, burned electrical equipment (lights, switches, conduit, etc.), and nails.

Location: The site is located north of Federal Avenue and west of Route 2 North. It is approximately 500 meters (1640 feet) west of the intersection of Route 2 North and Federal Ave.

Waste Type: Misc. Trash and Debris
Waste Description: The waste is concrete pads and miscellaneous burned debris (electrical equipment, e.g., lights, switches, conduit, etc. and nails).

Code: 600-158 **Classification:** Not Accepted
Names: 600-158; White Bluffs Ground Storage Tank and Booster Pump Station **Reclassification:** None
Type: Storage Tank **Start Date:**
Status: Inactive **End Date:**

Description: There is an area of reduced vegetation that is a vague circular shape that could where a storage tank once sat. No evidence of a pumping station was found.

Location: The site was located within the White Bluffs Townsite city limits. The ground storage tank and booster pump station were located north of the intersection of Fifth Avenue and Federal Avenue, 475 meters (1558 feet) northeast of the current intersection of Route 2 North and Federal Avenue.

Process Description: The ground storage tank (100,000 gallons) was located adjacent to the booster pump station (16 feet x 20 feet x 10 feet). These facilities were used to handle potable water.

Code: 600-159 **Classification:** Not Accepted
Names: 600-159; White Bluffs Bank Well **Reclassification:** None
Type: Pump Station **Start Date:**
Status: Inactive **End Date:**

Description: The well had been a concrete structure covered with a steel plate and was surrounded by a light-duty steel post and orange barricade material. The well has been backfilled with grout and marked with a metal disk that reads "Well No. A8991, 699-80-39B, Abandoned 9-26-95."

Location: The site is located southeast of the White Bluffs Bank building and east of Route 2 North. It is south of a dirt road that provides access to 100F.

Code: 600-160 **Classification:** Not Accepted
Names: 600-160; White Bluffs Irrigation Debris **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is an area containing concrete irrigation pipe sections. The piping sections are large in diameter and not very long. The site consists of a pipe standing within a large-diameter pipe. Other debris is scattered across the nearby area.
Location: The site is located west of Route 2 North, south of Federal Avenue, on the west side of a powerline road. It is approximately 975 meters (3199 feet) south of the intersection of Route 2 North and Federal Avenue, west of 600-188, White Bluffs Waste Disposal Trench 2.
Waste Type: Misc. Trash and Debris
Waste Description: The waste is concrete irrigation piping.

Code: 600-161 **Classification:** Not Accepted
Names: 600-161; White Bluffs Plumbing Debris **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of two piles of plumbing debris. One pile contains ceramic plumbing fixtures and the other pile contains cast iron plumbing fixtures.
Location: The site is located west of Route 2 North and south of Federal Avenue. It is south of the intersection of Route 2 North and Federal Avenue and east of the White Bluffs Large Fenced Depression (600-122).
Waste Type: Misc. Trash and Debris
Waste Description: The waste is ceramic urinals, sinks, plumbing fixtures and cast iron piping fixtures.

Code: 600-162 **Classification:** Not Accepted
Names: 600-162; White Bluffs Pipe Debris and Bucket of Lead **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: There had been two debris remnants, one consisting of two 8 inch steel pipe sections embedded in concrete and the second is a bucket of what appeared to be lead. The bucket of lead was removed in 1995.
Location: The site is located west of Route 2 North and south of Federal Avenue. It is 900 meters (2953 feet) south of the intersection of Route 2 North and Federal Avenue on the west side of a powerline road.
Waste Type: Misc. Trash and Debris
Waste Description: The remaining waste is two 8 inch sections of pipe encased in concrete.

Code: 600-163 **Classification:** Not Accepted
Names: 600-163; White Bluffs Pipe Testing Shop **Reclassification:** None
Type: Laboratory **Start Date:**
Status: Inactive **End Date:**
Description: The vague outline of a building footprint was identified at this location.
Location: The White Bluffs Pipe Testing Shop was located southwest of the intersection of Federal Avenue and Commercial Avenue. It was west of the White Bluffs Main Pipe Fabrication Shop (600-194).
Process Description: The facility was reportedly used as the quality control test and training facility for welders who worked in the White Bluffs Main Pipe Fabrication Shop.

Code: 600-164 **Classification:** Not Accepted
Names: 600-164; White Bluffs Earth Berm and Trench **Reclassification:** None
Type: Trench **Start Date:**
Status: Inactive **End Date:**
Description: The earth berm appeared to have been some of the material removed from the trench excavation.
Location: The site is located east of Route 2 North and north of Federal Avenue. It is approximately 1000 meters (3,281 feet) north/northwest of the intersection of Route 2 North and Federal Avenue and just east of 600-132, White Bluffs Construction Contractor Shop Landfill..

Code: 600-165 **Classification:** Not Accepted
Names: 600-165; White Bluffs Valve Box **Reclassification:** None
Type: Valve Pit **Start Date:**
Status: Inactive **End Date:**
Description: The site is a subsidence of about one square meter and is lined with concrete, suggesting a valve box or drain system. The subsidence indicates a subsurface structure with a void space that allows overburden to subside into it because of storm runoff. There is a section of power pole laying across the top of the structure.
Location: The site is located west of Commercial Avenue and northwest of the intersection of Commercial Avenue and Federal Avenue.
Related Sites/Structures: 600-126, 600-166, 600-165 and 600-170 all appear to be part of a related underground piping system.

Code: 600-166 **Classification:** Not Accepted
Names: 600-166; White Bluffs Subsidences **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: The site is a series of subsidences. A single subsidence measuring approximately four meters (13 feet) in size was originally identified in the White Bluffs Technical Baseline Report. The author of the report suggested that the site may be a subsurface structure with a void space that allowed overburden materials to be washed into it by rain runoff. A RARA Walkdown visit in

May 1999 identified three additional, similar subsidences, two of which are in line with the original one. The subsidences found in 1999 measured approximately 1.83 meters (6 feet) across and 0.9 meters (3 feet) deep.

Location: The site is located west of Commercial Avenue and north of Federal Avenue.

Related Sites/Structures: 600-126, 600-166, 600-165 and 600-170 all appear to be part of a related underground piping system, such as a sewer system, stormwater collection system or an irrigation system.

Code: 600-167

Classification: Not Accepted

Names: 600-167; White Bluffs Cistern

Reclassification: None

Type: Catch Tank

Start Date:

Status: Inactive

End Date:

Description: The site is a large Pre-Manhattan Engineering District concrete cistern. The top of the concrete cistern structure is located slightly below grade level. The hole is almost filled with windblown tumbleweeds. A small portion of the concrete structure was visible on a 1999 site visit.

Location: The site is located west of Route 2 North and south of Federal Avenue. It is northeast of the White Bluffs Loading Docks and Fuel Storage Area (600-127).

Process Description: The cistern was used to store water (not waste water).

Code: 600-168

Classification: Not Accepted

Names: 600-168; Buckholdt Ranch Toilet Pits; Herriford Ranch Toilet Pits

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date: 1/1/1943

Description: The general area of the ranch is marked by several acres of orchard tree stumps visible from the highway (Route 2 North). The site contains a number of toilet pits (outhouse pits) that remain open. The toilet pits were described as being located between the house foundation and the road to the south. The ground in this area is very uneven and has a rolling surface. During the June 1999 visit, it was observed that much of the southern end of the orchard east of the house foundation has the same undulating ground surface. Several hazards are found near this site, including the house foundation, a wood-lined pit on the north side of the foundation, and the former well or pump house near the south side of the site.

Location: The site is located north of the Hanford townsite and west of Route 2 North. The site is accessed by a dirt road that exits Route 2 North approximately 4.7 kilometers (2.9 miles) north of the intersection of Route 2 and Route 11. It is located north of an east-west dirt road; the travel distance from Route 2 North is approximately 1100 meters (3609 feet, 0.68 miles).

Code: 600-169

Classification: Not Accepted

Names: 600-169; Hanford Construction Camp Trenches

Reclassification: None

Type: Trench

Start Date:

Status: Inactive

End Date:

Description: The site is three trenches located south of the Hanford Construction Camp, along the gravel road that is an extension of Avenue A. Each trench runs northwest to southeast and parallels the road. Spoil piles are pushed to the west side of the trenches. Their purpose is unclear. A

1997 site visit observed a pile of broken concrete between the southern most trench and the adjacent trench

Location: The site is located southeast of the Hanford Construction Camp. The northernmost trench is 1.5 kilometers (0.9 miles) southeast of the intersection of Avenue A and 9th Street. The trenches range from 77 to 93 meters (253 to 305 feet) southwest of Avenue A.

Code: 600-170 **Classification:** Not Accepted

Names: 600-170; White Bluffs Subsurface Concrete Structure **Reclassification:** None

Type: Sump **Start Date:**

Status: Inactive **End Date:**

Description: The site is a series of subsurface concrete structures. The White Bluffs Technical Baseline Report originally described a single subsurface concrete structure, possibly a sump. A RARA Walkdown visit in May 1999 found four additional similar concrete structures/subsidence surrounding an old building foot print.

Location: The site is located in the old warehouse area north of Federal Avenue and west of the intersection of Commercial Avenue and Federal Avenue.

Related Sites/ Structures: 600-126, 600-166, 600-165 and 600-170 all appear to be part of a related underground piping system.

Code: 600-171 **Classification:** Not Accepted

Names: 600-171; White Bluffs Townsite **Reclassification:** None

Type: Foundation **Start Date:**

Status: Inactive **End Date:**

Description: The site is the White Bluffs Townsite located in the proximity of the intersection of Route 2 North and Federal Avenue. Most of the buildings have been demolished except for the White Bluffs Bank.

Location: The site is located west of 100F and south of 100H, around the intersection of Route 2 North and Federal Avenue. The site is predominantly east of Route 2 North.

Related Sites/ Structures: See subsite for individual facility descriptions within the Townsite. Three sites, the booster pump station and the ground storage tank (located next to each other at the northeast corner of Fifth Avenue and Federal Avenue), and the sewer junction box (located about 70 meters due north of the Route 2 North and Federal Avenue intersection), are addressed separately (See Sitecode 600-158 and 600-184).

This Site has the Following SubSites:

Code: 600-171:1

Names: 600-171:1; White Bluffs Townsite Wells

Code: 600-171:2

Names: 600-171:2; Site Number 32; White Bluffs Townsite Insulation Warehouse

Code: 600-171:3

Names: 600-171:3; Office Equipment Warehouses; Site Number 33; White Bluffs Townsite

Code: 600-171:4

Names: 600-171:4; Site Number 34; White Bluffs Townsite Elevated Water Storage Tank

Code: 600-171
Names: 600-171; White Bluffs Townsite

Code: 600-171:3 **Classification:** Not Accepted
Names: 600-171:3; Office Equipment Warehouses; Site **Reclassification:** None
Number 33; White Bluffs Townsite
Type: Foundation **Start Date:**
Status: Inactive **End Date:**

Description: All these warehouses were removed decades ago. There were six warehouses. Three of the warehouses were located on the south side of Federal Avenue between First and Second Avenues. Another one was located on the northeast corner of First Avenue and Federal Avenue. One of the warehouses was located on the west side of First Avenue, half way between Federal Avenue and Lincoln Avenue. The sixth was located at the northeast corner of First Avenue and Lincoln Avenue.

Process Plot map C-3316 indicates the warehouses were used for storing office equipment.

Description:

The SubSite is Part Of:

Code: 600-171
Names: 600-171; White Bluffs Townsite

Code: 600-171:4 **Classification:** Not Accepted
Names: 600-171:4; Site Number 34; White Bluffs **Reclassification:** None
Townsite Elevated Water Storage Tank
Type: Foundation **Start Date:**
Status: Inactive **End Date:**

Description: This elevated water tank has been removed.

Location: The site was located at the northwest corner of Second Avenue and Lincoln Avenue.

Process The water tank was connected to the White Bluffs water lines (C-3316).

Description:

The SubSite is Part Of:

Code: 600-171
Names: 600-171; White Bluffs Townsite

Code: 600-171:5 **Classification:** Not Accepted
Names: 600-171:5; Site Number 36; White Bluffs **Reclassification:** None
Townsite Air and Welding Tool Maintenance
Building
Type: Foundation **Start Date:**
Status: Inactive **End Date:**

Description: The building has been removed.

Location: The site was located on the east side of Railroad Avenue and half way between Federal Avenue and Lincoln Avenue.

The SubSite is Part Of:

The SubSite is Part Of:**Code:** 600-171**Names:** 600-171; White Bluffs Townsite**Code:** 600-171:6**Classification:** Not Accepted**Names:** 600-171:6; Site Number 37; White Bluffs
Townsite Fire Station**Reclassification:** None**Type:** Foundation**Start Date:****Status:** Inactive**End Date:****Description:** The building has been removed.**Location:** The site was located at the northwest corner of First Avenue and Federal Avenue.**The SubSite is Part Of:****Code:** 600-171**Names:** 600-171; White Bluffs Townsite**Code:** 600-171:7**Classification:** Not Accepted**Names:** 600-171:7; Site Number 38; White Bluffs
Townsite Service Division Engineer Office**Reclassification:** None**Type:** Foundation**Start Date:****Status:** Inactive**End Date:****Description:** The building has been removed.**Location:** The site was located north of Federal Avenue between Second Avenue and Third Avenue.**The SubSite is Part Of:****Code:** 600-171**Names:** 600-171; White Bluffs Townsite**Code:** 600-171:8**Classification:** Not Accepted**Names:** 600-171:8; Site Number 39; White Bluffs
Townsite Government Checkers and Ration
Office**Reclassification:** None**Type:** Foundation**Start Date:****Status:** Inactive**End Date:****Description:** The building has been removed.**Location:** The site was located just east of the White Bluffs Townsite Service Division Engineer Office,
Site Number 38.**The SubSite is Part Of:****Code:** 600-171**Names:** 600-171; White Bluffs Townsite**Code:** 600-171:9**Classification:** Not Accepted**Names:** 600-171:9; Site Number 42; White Bluffs
Townsite Two Stationary Storage Warehouses**Reclassification:** None

Type: Foundation **Start Date:**
Status: Inactive **End Date:**
Description: The warehouses have been removed.
Location: Both sites were located south of Federal Avenue and East of Railroad Avenue.

The SubSite is Part Of:

Code: 600-171
Names: 600-171; White Bluffs Townsite

Code: 600-171:10 **Classification:** Not Accepted
Names: 600-171:10; Site Number 43; White Bluffs
Townsite Fire Inspection Office **Reclassification:** None

Type: Foundation **Start Date:**
Status: Inactive **End Date:**

Description: The warehouse has been removed.
Location: The site was located near the southwest corner of Federal Avenue and First Avenue.

The SubSite is Part Of:

Code: 600-171
Names: 600-171; White Bluffs Townsite

Code: 600-172 **Classification:** Accepted
Names: 600-172; White Bluffs French Drain or Dry Well **Reclassification:** Rejected (10/6/1997)

Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is either a french drain or dry well that is a 61 centimeter concrete pipe, that has a steel lid, and appears to be about 1 meter deep. The sides are perforated, indicating that its purpose may have been for storm runoff or steam condensate. There does not appear to be an inlet pipe inside the structure.

Location: The site is on the north side of Federal Avenue and west of Commercial Avenue. It is approximately 470 meters (1542 feet) southwest of the intersection of Commercial and Federal and approximately 650 meters (2133 feet) southwest of the intersection of Federal and Route 2 North.

Waste Type: Steam Condensate
Waste Possibly, the waste was steam condensate.

Description:

Code: 600-173 **Classification:** Accepted
Names: 600-173; White Bluffs Domestic Debris Dump
and Building Foundations **Reclassification:** Rejected (10/6/1997)

Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site is a domestic type waste dump and pre-Manhattan Engineering District building foundations. The waste dump consists of miscellaneous debris and the building foundations

appear to be pre-Manhattan Engineering District. One building appears to have been a garage or farm shop because of the way that the concrete was formed.

Location: The site is located southwest of the intersection of Route 2 North and Federal Avenue. The site is east of the White Bluffs Large Fenced Depression.

Waste Type: Misc. Trash and Debris

Waste Description: The waste consists of miscellaneous debris including domestic bottles, glassware, paint cans, cans, containers of heavy industrial nuts and bolts (greater than 2.5 cm in diameter). Two building foundations are also included as a part of the site.

Code: 600-174

Classification: Accepted

Names: 600-174; White Bluffs French Drain

Reclassification: Rejected (10/6/1997)

Type: French Drain

Start Date:

Status: Inactive

End Date:

Description: The site is a 61 centimeter vitrified clay pipe french drain. The top is flush with the surface and it is filled with rocks.

Location: The site is located approximately 530 meters (1739 feet) northwest of the intersection of Route 2 North and Federal Avenue.

Waste Type: Steam Condensate

Waste Description: The french drain may have been used to dispose of steam condensate.

Code: 600-175

Classification: Accepted

Names: 600-175; Original Priest Rapids Ice House Drain Field

Reclassification: Rejected (10/6/1997)

Type: Drain/Tile Field

Start Date:

Status: Inactive

End Date:

Description: The site is three large depressions thought to be the original drain field for waste water generated at the ice house. The site was originally marked by a steel post and wooden rail fence that can still be found around much of the site.

Location: The site is located in the White Bluffs Area, south of the intersection of Route 2 North and Federal Avenue and northeast of the White Bluffs Pickling Acid Crib (600-106).

Waste Type: Water

Waste Description: The waste was waste water. It is unknown if other wastes were disposed of at the site or if the site was used for other purposes.

Code: 600-177

Classification: Accepted

Names: 600-177; White Bluffs Pipe Bender and Equipment Dumping Area

Reclassification: Rejected (10/6/1997)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of two areas that are within close proximity. The pipe bender is a large heavy-walled pipe, placed vertically in the ground with approximately 1.2 meters (4 feet) of the pipe extending above grade. Several holes of varied sizes have been drilled into the vertical pipe.

The holes are the approximate size of varied small diameter pipes. The structure is assumed to have been used to do rough bending of pipe. Adjacent to the pipe bender is a large area of debris that appears to have been a miscellaneous equipment dumping/storage area. Random dumping of small quantities of oils also occurred in the area.

Location: The site is located west of Route 2 North and south of Federal Avenue. It is approximately 810 meters southeast of the intersection of Route 2 North and Federal Avenue and just west of a powerline road.

Waste Type: Oil

Waste Description: The site shows evidence of random oil dumping.

Code: 600-179

Classification: Accepted

Names: 600-179; Priest Rapids Ice House

Reclassification: Rejected (10/6/1997)

Type: Burial Ground

Start Date: 1/1/1943

Status: Inactive

End Date:

Description: The site is the remains of the Priest Rapids Ice House that was demolished in situ in 1975.

Location: The site is located west of Route 2 North, south of Federal Avenue, between Commercial Avenue and the railroad. It is approximately 260 meters (853 feet) south/southeast of the intersection of Route 2 North and Federal Avenue

Waste Type: Demolition and Inert Waste

Waste Description: The waste consists of the demolished facility buried in place in 1975. Occasionally small pieces of wood and clay can be observed on the surface

Code: 600-180

Classification: Accepted

Names: 600-180; White Bluffs Suspect Automotive Repair Shop

Reclassification: Rejected (10/6/1997)

Type: Maintenance Shop

Start Date:

Status: Inactive

End Date:

Description: The site is described as the remains of what appears to have been an automotive repair shop.

Location: The site is located west of Route 2 North and south of Federal Avenue. It is northeast of the White Bluffs Pickling Acid Cribs (600-106).

Waste Type: Chemicals

Waste Description: The waste may have been solvents, grease, antifreeze, oils, gasoline. Concern was expressed by the Environmental Protection Agency (EPA) because of the types of materials usually found at an automotive repair shop. However, there is no evidence of this type of disposal. (Per Discovery Site Evaluation Checklist completed by Steve Weiss 8/6/96). Remaining surface material consists of jack stands, car parts, wooden debris, and other metallic debris.

During the May 1999 visit, the following were observed: light fixtures, paint cans, a muffler, lumber, sections of what appears to be stove pipe, a 55 gallon drum marked "Property of Shell Oil," and buckets containing what appeared to be tar. The site's remains didn't suggest an automotive repair shop as much as a supply hut.

Code: 600-183

Classification: Accepted

Names: 600-183; White Bluffs Burn Pile and Debris **Reclassification:** Rejected (10/6/1997)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is a burn pile and debris dumping area. Within the site is one area consisting of a burn pile of domestic type debris. The other area consists of 5 gallon military type drums.
Location: The site is located west of Route 2 North and south of Federal Avenue. It is approximately 680 meters (2231 feet) south of the intersection of Route 2 North and Federal Avenue.
Waste Type: Misc. Trash and Debris
Waste Description: The waste consists of miscellaneous debris, including domestic type debris and military drums. It is unknown if any hazardous materials remain.

Code: 600-184 **Classification:** Accepted
Names: 600-184; White Bluffs Townsite Septic System **Reclassification:** Rejected (10/6/1997)
Type: Septic Tank **Start Date:**
Status: Inactive **End Date:**
Description: The site is a concrete box with a metal lid. It is about 0.61 meters deep (2 feet) and is dry inside.
Location: The sewer junction box is located about 30 meters due north of the intersection of Route 2 North and Federal Avenue. The site is about 50 meters east of Route 2 North and 50 meters north of Federal Avenue.
Process Description: The site is the various components of a septic system serving the central area of the White Bluffs Townsite. In the rehabilitation of existing buildings containing inside toilets and plumbing facilities, whenever possible, connections were made to permanent systems (DuPont, 1945). The White Bluffs Townsite had one septic tank and 300 feet of sewer line. During field surveillance activities, a sewer junction box consisting of a shallow concrete box with a heavy steel cover was located within the confines of the city.
Waste Type: Sanitary Sewage
Waste Description: The waste is sanitary sewage (if the septic tank and/or drainfield could be located).

Code: 600-185 **Classification:** Accepted
Names: 600-185; Hanford Construction Camp Honey Dump Site **Reclassification:** Rejected (10/1/1997)
Type: Trench **Start Date:** 1/1/1943
Status: Inactive **End Date:** 1/1/1945
Description: The site is described as a dumping and cleaning station for the portable toilets used at the various Hanford construction sites.
Location: The site is located southeast of the Hanford Construction Camp, 280 meters (919 feet) east/southeast of the intersection of Avenue A and 9th Street. It is south of the southernmost sewage treatment plant (600-186).
Waste Type: Sanitary Sewage
Waste Description: The unit received portable toilet cleaning chemicals and human waste.

Code: 600-189 **Classification:** Accepted
Names: 600-189; White Bluffs Warehouse Facility **Reclassification:** Rejected (1/26/1998)
French Drains; 100-H-23
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The site is three french drains associated with a large warehouse and temporary construction facility. The area near the french drains is littered with debris and patches of gravel. There is no oil-stained soil or other indication of hazardous waste disposal at or near the french drains.

Location: The site is located approximately 1100 meters (3609 feet) northwest of the intersection of Route 2 North and Federal Avenue in a large warehouse-temporary construction facility area.

Release Description: The use of the drains was not reported. Drains were constructed for disposal of liquid wastes and may have been used for wastewater and/or stormwater.

Process Description: No documentation has been found describing the purpose of the drains. French drains were used for disposal of liquid wastes and these may have been used for wastewater and/or stormwater.

Waste Type: Water
Waste Description: The waste may have been wastewater/stormwater.

Waste Type: Asbestos (non-friable)
Waste Description: Transit siding was scattered throughout the area.

Code: 600-192 **Classification:** Not Accepted
Names: 600-192; Hanford Construction Camp **Reclassification:** None
Fumigation Chamber
Type: Maintenance Shop **Start Date:**
Status: Inactive **End Date:**

Description: The site is the remains of a fumigation building. During a field investigation by T. F. Johnson on October 24, 1996, there was no evidence of the fumigation chamber at the site except for a few small pieces of concrete. The area was covered with cheatgrass, rabbitbrush, and tumbleweeds. The fumigation chamber (disinfestation building) was a small wooden frame building. It was posted with "Poison Gas, Keep Out" signs and protected by an 2.4 meter (8 foot) barbed-wire security fence.

Location: The site is located between Avenue A and the Columbia River, between the two northernmost sewage treatment plants (600-186). The site may be approached from the north by taking a road southeast from Route 2 North between mileposts 1 and 2. Continue southeast on this road, which parallels the river, for 3.5 kilometers (2.2 miles). A group of trees is located just above the riverbank and north of the site. The site is located approximately 140 meters (459 feet) northeast of the intersection formerly known as Avenue A and 5th Street.

Process Description: A small building adjacent to the fumigation chamber is referred to as the "bedding storage" building, suggesting that the fumigation chamber was used to fumigate bedding.

Code: 600-193 **Classification:** Accepted
Names: 600-193; White Bluffs Gas Station **Reclassification:** Rejected (10/6/1997)
Type: Storage Tank **Start Date:** 1/1/1942
Status: Inactive **End Date:** 1/1/1975

Description: The site is located in a shallow depression with heavy tumbleweed and cheatgrass growth. Prior to November 1997, the depression had been marked with a steel post and chain barrier and posted with two "DANGER KEEP AWAY" signs. The posts and chains were removed on November 19, 1997.

Location: The site is located east of Federal Avenue, south and west of Route 2 North, between the railroad tracks and the old road which was "Railroad Avenue."

Process Description: The site is the location of the White Bluffs Gas Station, that was demolished in 1975 as part of a sitewide clean up project. No documentation can be found to determine if any underground storage tanks were removed. A depressed area, that measured 4.88 X 7.62 meters (16 X 25 feet), was identified in 1989 and surrounded with steel posts and chain. Federal Avenue is located just north of the site of the depression. The west side of the site is bounded by railroad tracks and the east side is bounded by an old road believed to be "Railroad Avenue." The soil in the area is soft and sandy. The existence of the underground storage tanks could not be determined from the initial (1996) field investigation. In addition, it is possible that the tanks, if present, may have been located north of Federal Avenue and east of Railroad Avenue.

Code: 600-194 **Classification:** Accepted
Names: 600-194; Main Pipe Fabrication and Blacksmith Shop; White Bluffs Main Pipe Fabrication Shop **Reclassification:** Rejected (10/6/1997)
Type: Fabrication Shop **Start Date:**
Status: Inactive **End Date:**

Description: The site is the remnants of pipe fabrication shop. The building footprint can be discerned by observing the disturbed ground surface and the lack of rabbitbrush as compared to the surrounding terrain. In some areas near the western portion of the site, the concrete floor is visible. The floor appears to be intact, but much of it is covered by soil. Waste materials observed at the site include wood, coal, metal, metal lathe turnings, pipe, nails, brick, and concrete.

Location: The site is located approximately 60 meters (197 feet) southeast of Federal Avenue and about 230 meters (755 feet) southwest of Route 2 North. The site is just west of the old road once known as "Commercial Avenue" and between Federal Avenue and the BPA Powerlines.

Process Description: The Main Pipe Fabrication Shop was used to prepare piping systems for the reactor areas. The pipe was prepared for welding by grinding, etching with acid (pickling), and then cleaning with solvent materials. This shop was the source of waste discharged to the White Bluffs Pickling Acid Cribs (600-106).

Related Sites/ Structures: Liquid wastes from the Main Pipe Fabrication Shop were disposed to the Pickling Acid Cribs.

Waste Type: Misc. Trash and Debris

Waste Description: The site contains concrete, brick, wood, coal, metal, and small amounts of glass. The Main Pipe Fabrication And Blacksmith Shop used acids and solvents in the pipe fabrication process which may have contaminated the waste materials and soil remaining at the site. Carbon

tetrachloride was a common degreasing agent at the time and may be present in the debris.

Code: 600-195 **Classification:** Not Accepted
Names: 600-195; White Bluffs Townsite Electrical Substation **Reclassification:** None
Type: Electrical Substation **Start Date:**
Status: Inactive **End Date:**
Description: The site is the location of a demolished substation that serviced the White Bluffs Townsite. The site had two footprints measuring 4.3 meters by 3.8 meters and 1.8 meters by 5.5 meters (14 feet by 11 feet and 6 feet by 18 feet). The footprints of the former substation site are still visible. The soil at the site is sandy. Cheatgrass vegetation growth within the site appears stunted and indicates the size and location of the former site. There is no evidence of oil spills or stains in the soil at this site or the ground surrounding the site.
Location: The site is located on the south corner of the intersection of Federal Avenue and Commercial Avenue. It is approximately 200 meters (656 feet) southwest of the intersection of Route 2 North and Federal Avenue.
Waste Type: Soil
Waste: No waste was observed at the site.
Description:

Code: 600-196 **Classification:** Not Accepted
Names: 600-196; White Bluffs Farm Dump Site and Partially Backfilled Pit **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is areas of random scattered debris and a pit. The debris includes cans, bottles, barbed wire and car parts scattered along the west side of a dirt road. The pit is a fairly large excavation on the east side of the road and shows no evidence of being used as a waste site.
Location: The site is located approximately 1 kilometer (0.62 miles) northeast of the intersection of Route 2 North and Federal Avenue. The site may be approached from a dirt road heading due north from Federal Avenue about 644 meters (2112 feet) northeast from the intersection of Route 2 North and Federal Avenue.
Waste Type: Misc. Trash and Debris
Waste: Cans, glass, barbed wire, and auto parts
Description:

Code: 600-198 **Classification:** Not Accepted
Names: 600-198; RCRA General Inspection LORIVFY96 Item #2; White Bluffs River Bank Concrete Structure **Reclassification:** None
Type: Foundation **Start Date:**
Status: Inactive **End Date:**
Description: The site is a box shaped concrete structure partially buried in the river bank. The site appears to have slid partially down the bank. The structure is filled with dirt and debris. There is a large

quantity of 0.635 centimeter (0.25 inch) nylon tubing hanging around and in the structure. Four steel pipes extend from each corner of the box. An electrical conduit also extends from the box. A square notch was observed on a top corner of the box.

Location: The site is located 500 meters (1641 feet) upstream from the White Bluff's Landing. It is on the east side of the dirt road leading north from the boat landing and is perched on the riverbank above the water.

Waste Type: Construction Debris
Waste Description: Concrete, steel pipe, and nylon tubing.

Code: 600-199 **Classification:** Accepted
Names: 600-199; White Bluffs Ash Covered Concrete Pad **Reclassification:** Rejected (3/11/1998)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site is a concrete foundation pad that is completely covered with coal ash. The original purpose of the pad is unknown.

Location: The site is located west of Route 2 North and north of Federal Avenue. It is approximately 675 meters (2215 feet) southwest of the intersection of Route 2 North and Federal Avenue.

Waste Type: Ash
Waste Description: The waste is coal ash which is a state regulated solid waste. The waste has been placed in a waste pile (discernible unit).

Waste Type: Asbestos (non-friable)
Waste Description: Transite siding was scattered throughout the area.

Code: 600-200 **Classification:** Accepted
Names: 600-200; Priest Rapids Ice House Septic Tank **Reclassification:** Rejected (10/6/1997)
Type: Septic Tank **Start Date:**
Status: Inactive **End Date:**

Description: The site is a large septic tank thought to have been associated with the Priest Rapids Ice House.

Location: The site is located south of Federal Avenue and west of Commercial Avenue. It is approximately 315 meters (1034 feet) south of the intersection of Route 2 North and Federal Avenue. The site is southwest of the Priest Rapids Ice House (600-179).

Waste Type: Sanitary Sewage
Waste Description: The waste is a septic tank, possibly containing human septage. Septage is a state regulated solid waste.

Code: 600-203 **Classification:** Accepted
Names: 600-203; White Bluffs French Drains **Reclassification:** Rejected (10/6/1997)
Type: French Drain **Start Date:**
Status: Inactive **End Date:**

Description: The White Bluffs Technical Baseline Report states the site is two french drains and what

appears to be a valve box. No additional information is known. A RARA Walkdown visit done in May 1999 found a round clay french drain filled with rock and an additional small subsidence near the valve box and noticed a long narrow area of disturbed vegetation that may indicate these structures were part of an old irrigation system. A third item was observed, photographed and mapped as a new component of this site. It was a concrete, square hole that measured approximately 8 by 8 inches.

Location: The site is located north of Federal Avenue and west of Commercial Avenue. It is approximately 360 meters (1181 feet) northwest of the intersection of Commercial and Federal Avenue.

Waste Type: Steam Condensate

Waste Description: The waste may have been steam condensate.

Code: 600-206

Classification: Accepted

Names: 600-206; 101 Building Graphite Dump Site

Reclassification: Rejected (10/1/1997)

Type: Burial Ground

Start Date: 1/1/1943

Status: Inactive

End Date: 1/1/1945

Description: The site is a burial ground used for the disposal of scrap graphite and building rubble. The building was plowed into the ground when it was demolished. Remnants of the site remain on the surface. The 101 Building was used during the 1943-1944 construction program for machining graphite for the 100 Areas. It was then declared surplus and partially dismantled. It was reconstructed for machining graphite in 1948.

Location: The dump site appears to be along the southern edge of the 101 Building site, probably along the railroad right-of-way that serviced the building.

Related Sites/Structures: The 101 Building site was located at the Hanford Construction Camp, north of Roosevelt Avenue and North of the Hanford High School, west of Avenue A, in the "V" formed by Avenue A and the powerlines.

Waste Type: Demolition and Inert Waste

Waste Description: The records appear to indicate that the site received debris from the demolished building. It is unlikely to contain hazardous or radioactive materials. A records review and site inspection reveal no evidence of radioactive or toxic dumping.

Code: 600-207

Classification: Accepted

Names: 600-207; Hanford Construction Camp
Powerhouse Ash Pile

Reclassification: Rejected (10/6/1997)

Type: Dumping Area

Start Date: 1/1/1943

Status: Inactive

End Date: 1/1/1945

Description: The site is a large coal ash pile. The pile is pear-shaped and oriented north to south with the wider portion to the south. It is covered with cheatgrass and tumbleweeds. A second smaller ash pile exists to the northwest.

Location: The site is located southeast of the Hanford Construction Camp, approximately 1000 meters (3281 feet) inland from the Columbia River. The site is approximately 780 meters (2559 feet) southeast of 10th Street and 740 meters (2428 feet) southwest of Avenue A.. The ash pile is located adjacent to the bluff that overlooks the Hanford Construction Camp from the south. The site is accessible from the north by an overgrown gravel road.

Waste Type: Ash

Waste Type: Ash
Waste Description: The waste is ash that appears characteristic of powerhouse ash and probably came from coal fired power houses used at the Hanford Construction Camp. The dirt road leading to the main site has been overlaid with ash. The waste has been placed in a discernible unit (pile).

Code: 600-209 **Classification:** Accepted
Names: 600-209; White Bluffs Excess Railroad Tie Materials **Reclassification:** Rejected (10/6/1997)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site is several stacks of excess railroad ties. The ground surface at the site appears to have been graveled, suggesting that the entire area was a warehouse area for industrial type materials. During the May 1999 visit, it was observed that scattered stacks and piles of railroad ties were found in a large undefined area on both sides of a powerline road. Ties were found to the west and south of 600-188.

Location: The single point that is mapped for this site is located west of Route 2 North, south of Federal Avenue, on the west side of a powerline road. It is 1050 meters (3445 feet) south of the intersection of Route 2 North and Federal Avenue.

Waste Type: Oil

Waste Description: The waste is creosote soaked railroad ties and possibly creosote in the soil underneath the railroad ties. The Regulators were concerned about this site for the reasons stated above.

Code: 600-210 **Classification:** Not Accepted
Names: 600-210; 300 Area TEDF Outfall **Reclassification:** None
Type: Outfall **Start Date:** 1/1/1994
Status: Inactive **End Date:**

Description: The outfall line was a 25-centimeter (10-inch) polyvinyl chloride (PVC) pipeline that is routed to the shore of the Columbia River [approximately 600 meters (2000 feet)] from the TEDF. To protect an archaeological site near the river, the pipeline is routed aboveground until it is close to the shoreline. At this point, the pipe was routed below grade into a gravel-filled, rock-armored trench. At the shoreline the PVC pipe was transitioned to an 20 centimeter (8-inch) ductile iron pipe that transfers the effluents to the mid-channel single-point diffuser. The diffuser lies on the bottom of the channel, and consisted of an iron pipe routed through a large, rectangular concrete casing. An angled discharge-pipe bolted directly to the concrete block.

Location: The outfall is located directly east of the 300 Area TEDF. The outfall runs from the TEDF to the middle of the near channel of the Columbia River.

Process Description: The outfall discharged treated effluent released from the 300 TEDF. The influent to the 300 TEDF was generated by facilities discharging to the 300 Area process sewer. On September 2, 2009, the discharge from the outfall to the Columbia River was permanently terminated.

Related Sites/Structures: This structure is associated with the 310 Facility aka the 300 Area Treated Effluent Disposal Facility (TEDF) - See WIDS sitecode 600-117.

Waste Type: Process Effluent

Waste Description: The outfall discharges effluent from the 300 Area TEDF to the Columbia River.

Code: 600-211 **Classification:** Accepted

Names: 600-211; 616A; 616-A; SALDS; State Approved Land Disposal Site **Reclassification:** None

Type: Drain/Tile Field **Start Date:** 1/1/1995

Status: Active **End Date:**

Description: The site is surrounded by steel posts/chain and posted as "SALDS Building 616A Disposal Field". The cobble terrain is flat with primarily cheatgrass cover. There are seven 5 inch plastic pipes (monitoring ports) that extend two to three feet above grade and one 30 inch sampling access manhole that extends one foot above grade. Two feet below grade in the gravel disposal bed are sixty-six perforated 4 inch diameter distribution laterals branching 90 degrees from an 8 inch diameter feed header. A geotextile and PVC membrane cover the disposal field and are one foot below grade.

Location: About 1200 feet north of the 200 West Area exclusion fence, 1700 feet south of Route 11A, 1100 feet east of the 200 West entrance road to gate 609, and 6500 feet west of Route 3.

Process Description: The site receives liquid waste that has been treated and verified at the 200 Area Effluent Treatment Facility in 200 East Area. The waste is distributed (below grade) to a gravel bed via perforated pipe. The liquid waste meets delisting requirements of the 216 permit #ST 4500 and is discharged as nondangerous waste; however it may contain tritium.

Related Sites/ Structures: SALDS Disposal Pipeline (600-292-PL), 200 Area Effluent Treatment Facility (2025E), Liquid Effluent Treatment Facility (LERF), 242-A Evaporator, PUREX.

Waste Type: Process Effluent

Waste Description: Treated and verified liquid waste received from the 200 Area Effluent Treatment Facility (ETF). The waste meets the delisting requirements of the 216 permit ST 4500 and is considered nondangerous; however it may contain tritium.

Code: 600-212 **Classification:** Accepted

Names: 600-212; Relocatable Latrine Facility Holding Tank System **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1993

Status: Active **End Date:**

Description: The site is surrounded with fourteen steel posts painted yellow. The top of the tank is visible at grade level and measures 9 feet by 15 feet. Two concrete covers are located on top of the tank, one has a steel access port for pumping. The electrical conduit for transmitting to the alarm system is visible on top of the tank.

Location: The site is located just west of the 200E area, between Route 4 North and the 200E Perimeter Fence. The site is within the trailer village established for the HWVP Project approximately 8 meters west of MO-730.

Process Description: The HWVP Relocatable Latrine Facility (RLF) Holding Tank System consists of a trailer (MO-730) divided into men's and women's restrooms. Fixtures which drain into the holding tank system include ten toilets, three urinals, six sinks and four self-contained sinks. The latrine trailer is connected to a holding tank via a 4" diameter drain line. The holding tank is a recast concrete vault providing a nominal volume of 5,440 gallons and working volume of 4,500 gallons.

Related Sites/ Structures: The tank receives waste from MO-730.

Structures:**Waste Type:** Sanitary Sewage**Waste****Description:**

Code: 600-213**Classification:** Accepted**Names:** 600-213; Hanford Airport Underground Fuel Storage Tanks**Reclassification:** Rejected (1/31/2010)**Type:** Storage Tank**Start Date:****Status:** Inactive**End Date:**

Description: The site consisted of underground fuel storage tanks that were associated with the Hanford Airport. The airstrip runways are still visible. A windsock pole is visible just off the southeast corner of the airstrip intersection. Two field walkdowns in 2007 were performed, no visual evidence of building locations or fuel storage tanks were observed. A United States Geological Survey (USGS) June 1, 1948 aerial photograph of the area shows a connecting taxi-way between the south end of the north-south runway and the east end of the east-west runway. The photo shows buildings on the southeast side of the taxi-way. The taxi-way has a large north arrow painted on it that is about 61 meters (200 feet) long.

Location: The site is located approximately 2 kilometers (1.2 miles) east of the southeast end of Gable Mountain. The site is best approached from Route 2 North on a dirt road which heads west 0.32 kilometers (0.2 miles) north of milepost 1 on Route 2 North. The site is north of the dirt road and approximately 0.8 kilometers (0.5 miles) west of Route 2 North. A metal pipe sticking out of the ground may mark the site.

Process Description: The airport consisted of two landing strips, one running almost north and south, and the other east and west. Both strips were 61 meters (200 feet) wide with the north-south strip approximately 1,220 meters (4,000 feet) long and the east-west strip approximately 732 meters (2,400 feet) long. The landing strips were of bituminous stabilized construction, i.e., mixing the surface sand and gravel in place with road oil and rolling to a 15 to 20-centimeter (6 to 8-inch) thick packed surface. Two wood-frame open-type shed hangars and a 5.6 by 12.2-meter (16 by 40-foot) Pacific Hutment were erected east of the air strip intersections. Electrically-driven gasoline pumps, with underground storage tanks, were provided for refueling of Army planes. The airport was totally enclosed by a Type #2, three-strand barbed wire fence. All construction work was performed by Project forces.

Code: 600-214**Classification:** Accepted**Names:** 600-214; 600-PSTF; MODU-Tanks; 600 Area Purgewater Storage and Treatment Facility**Reclassification:** None**Type:** Retention Basin**Start Date:** 1/1/1990**Status:** Active**End Date:**

Description: The waste site is the Purgewater Storage and Treatment Facility. It is enclosed within a fenced area that measures 210 by 150 meters (680 by 480 feet). The two original storage tanks (Units #1 and #2) were located in the southeast portion of the fenced area. East of the tanks is the truck unloading area and west of the tanks are two leak detection risers. Unit #1 was demolished in May 2011. Modular Storage Tank #2 was relined and is in-use. Modular Storage Tank #3 was constructed and is in-use.

Location: The waste site is located outside the 200 East Area security fence and near the northeast corner

of 200 East Area. It is about 400 meters (1,300 feet) north of B-Pond, 750 meters (2,460 feet) east of Canton Avenue, and 300 meters (980 feet) west of the 216-E-28 Contingency Ponds. Tank Unit #1 was south of Unit #2.

Process Description: The original Unit 1 tank provided greater than 90-day storage and treatment of purgewater generated from Hanford Site groundwater monitoring wells under RCRA. Subsequent modular storage tanks also held purgewater generated from Hanford Site groundwater monitoring wells, but under CERCLA authority. The Treatment is by solar evaporation.

Related Sites/ Structures: Purgewater from Hanford Site wells is transported to the site by tanker truck and unloaded.

Waste Type: Water

Waste Description: Wastes include: purgewater from Hanford Facility groundwater monitoring wells. Liquid resulting from well sampling, well development, and aquifer testing. Waste may also include nonregulated purgewater from wells. By permit, purgewater may contain radioactive material, carbon tetrachloride, and other non-specific solvents (F001, F002, F003).

Code: 600-215

Classification: Accepted

Names: 600-215; 6265A 90-Day Waste Accumulation Area

Reclassification: Rejected (9/14/2000)

Type: Storage Pad (<90 day)

Start Date:

Status: Active

End Date:

Description: The storage pad is a fenced-in concrete pad covered with an open shed divided into three sections. The fence is on the east and west sides, and connects to the cinder block walls on the north and south sides, which holds up the roof. The fence has six gates, two into each section of the pad. The two northernmost sections of the pad are chained off inside the fence and marked as "Radioactive Materials Area." The floor of the pad is a metal grate that opens to a concrete basin underneath. This basin is about 20 centimeters (8 inches) deep, and is designed to catch any leaks. It does not have any other drain, but appears to be large enough to hold the entire contents of several drums, if they should leak. In April 2000, no water (that may have come from natural spring precipitation) was evident in the basin, but a small amount of vegetation debris had collected in a few spots.

Location: The site is located east of the 200 West Area. It is approximately 100 meters (300 feet) west of the Waste Sampling and Characterization Facility laboratory building.

Process Description: This site is used to temporarily store analytical laboratory waste generated at the Waste Sampling and Characterization Facility (WSCF).

Related Sites/ Structures: This storage pad is related to the WSCF.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Analytical laboratory waste is stored at this site.

Code: 600-216

Classification: Not Accepted

Names: 600-216; 600-48; H-61-H Anti-Aircraft Artillery Site Building Foundations

Reclassification: None

Type: Foundation

Start Date:

Status: Inactive**End Date:** 1/1/1958

Description: Seven concrete foundations and pads are at this site: #1. A vehicle maintenance shop with a mechanic's trench in the foundation floor and drive-through ability on each end. The dimensions are 34 meters by 14 meters (111 feet by 45 feet). The mechanic's trench is filled with tumbleweeds, but as a place to work it would also have a concrete floor and not be used to drain oil to the ground. #2. Concrete pad, 9 meters by 9 meters (29 feet by 29 feet). #3. Concrete Pad, 6.4 meters by 12.5 meters (21 feet by 41 feet). #4. Concrete kitchen foundation with floor drains and a grease trap. The dimensions are 10 meters by 12.5 meters (33 feet by 41 feet). #5. Concrete pad, 14.6 meters by 5.5 meters (48 feet by 18 feet). #6. Concrete foundation that appears to have been a toilet and shower facility. The dimensions are 14.6 meters by 6 meters (48 feet by 20 feet). #7 Concrete pad, 4 meters by 2.4 meters (13 feet by 8 feet). A large, approximately 12 by 12 meters (40 by 40 feet) open pit is at the site and fenced; the purpose and age of the pit are unknown. There is no evidence of trash in the bottom. Two old building heaters also remain at the site.

Location: This site is located just southwest of the intersection of Route 11 and Route 6. It is 640 meters (0.4 mile) south of Route 11 and just west of Army Loop Road. The site is in the east half of the northeast quarter of Section 34, Township 13 north, Range 25 east.

Process Description: Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: Septic system 600-217 serviced this site, and dumping area 600-218 received associated trash.

Waste Type: Demolition and Inert Waste

Waste Description: Concrete foundations and pads from former buildings and structures, some containing floor drains and steel anchors.

Code: 600-217**Classification:** Accepted**Names:** 600-217; H-61-H Anti-Aircraft Artillery Site Sewer System**Reclassification:** Rejected (5/18/2011)**Type:** Sanitary Sewer**Start Date:****Status:** Inactive**End Date:**

Description: The sewer system extended from the kitchen, toilet and shower building and ran into a septic tank on the eastern side of the site. The manholes and septic tank have been filled in with clean sand (September 2001). Twelve toilet drains and five floor drains were observed on the toilet and shower building foundation floor. A sewer manhole is located just NE of the toilet/shower building. The kitchen foundation has four floor drains and a grease trap. A sewer manhole is located NW of the kitchen.

Location: This site is located just southwest of the intersection of Route 11 and Route 6. It is 0.4 miles south of Route 11 and just west of Army Loop Road. The site is in the east half of the northeast quarter of Section 34, Township 13 north, Range 25 east.

**Related Sites/
Structures:**

Waste Type: Sanitary Sewage

Waste

Description:

Code: 600-219

Classification: Not Accepted

Names: 600-219; H-61-R Radar Site

Reclassification: None

Type: Foundation

Start Date:

Status: Inactive

End Date:

Description: A concrete block remains at the site. The concrete block measures 3.4 meters by 3.4 meters by 1.2 meters (11 feet by 11 feet by 4 feet). Wooden structures that had been on each side of the block were consumed in the July 2000 range fire; only charred wood and burlap from sandbags remain.

Location: The H-61-R Radar site is located approximately 160 meters (0.1 mile) southwest of the northwest corner of the 200 West Perimeter Fence and approximately 960 meters (0.6 miles) south of Route 11 and just west of Army Loop Road.

**Related Sites/
Structures:** Site 600-216, the H-61-H Anti-Aircraft Artillery Site, is associated with this radar installation.

Waste Type: Demolition and Inert Waste

Waste The only material remaining at the site is a large block of concrete and some charred wood and

Description: burlap from sandbags.

Code: 600-223

Classification: Accepted

Names: 600-223; H-50 Gun Site Pit; Military Camp South of 200W

Reclassification: Rejected (5/31/2001)

Type: Depression/Pit (nonspecific)

Start Date:

Status: Inactive

End Date: 1/1/1958

Description: The site was described in 1987 as a pit that is filled with blown in tumbleweeds. Fence posts and barbed wire are visible on the northwest corner of the pit. A sanitary sewer manhole is located just south of the pit. While the presence of the tumbleweeds made determining if other debris was present impossible when the site was discovered, the July 2000 fire showed that the pit is empty. A plastic orange fence surrounds the pit to warn of falling danger.

Location: The unit is located south of the 200 West Area, 0.6 kilometers (0.4 miles) east of the Rattlesnake Gate and south of Army Loop Road. The pit is located in the southern portion of the H-50 Gun Site just north of the septic tank.

**Process
Description:** The reason for the pit is unknown, and not evident from the surrounding area. There is no evidence of spills or other hazardous material in the pit. The fencing debris at the top end may have been used to mark the site during military operations, but was left when the anti-aircraft site was decommissioned.

**Related Sites/
Structures:** This pit is associated with site 600-39, the building foundations, and 600-224, the site septic system.

Waste Type: Equipment

Waste Steel fence posts and barbed wire.

Description:**Waste Type:** Vegetation**Waste** The pit is filled with blown in tumbleweeds.**Description:****Code:** 600-224**Classification:** Accepted**Names:** 600-224; H-50 Gun Site Septic System; Military Camp South of 200W**Reclassification:** Closed Out (2/23/2001)**Type:** Septic Tank**Start Date:****Status:** Inactive**End Date:**

Description: The site is a septic system located in the south portion of the H-50 Gun Site. The tanks have been filled with sand and abandoned in place. Signs reading "Abandoned Septic Tank" are posted. The system included a manhole, two concrete tanks and concrete block house between the tanks. The first tank is below grade, has three manholes, and measures approximately 3.7 meters by 0.8 meters by 1.5 meters (12 feet by 2.6 feet by 5 feet). The second tank is visible above grade, has two manholes, and measures 1.8 meters by 3.3 meters by 2.7 meters (5.8 feet by 10.7 feet by 9 feet). A concrete block house was located between the two tanks. The structure was demolished and the rubble removed.

Location: The unit is located at the southwest quarter of Section 19, Township 12 North, Range 26 East, 2 miles (3.2 kilometers) south of the 200 West Area and 0.4 miles east of the Guard House on SR 240. The septic system is located in the southern portion of the H-50 Gun Site.

Waste Type: Demolition and Inert Waste**Waste** Debris from a demolished block house was located between the two septic tanks.**Description:****Waste Type:** Sanitary Sewage**Waste****Description:**

Closure Info: The septage was removed from both tanks sometime in the past. In July, 2000 the lids were removed from both tanks and the void space in both tanks was filled with a sand slurry. The inert rubble from the block house, which had been left from past demolition activities, was discarded in a landfill.

Code: 600-229**Classification:** Not Accepted**Names:** 600-229; Dumping Area Near White Bluffs Ferry Landing (East Side); RCRA General Inspection 200WFY97 Item #21 Historic Disposal Site**Reclassification:** None**Type:** Dumping Area**Start Date:****Status:** Inactive**End Date:**

Description: The site contains several empty rusty 19 liter (5 gallon) steel containers that are partially buried or filled with soil. The site also contains wire, wire rope, and small amounts of sheet metal.

Location: The site is located approximately 250 meters (820 feet) downstream from the old White Bluffs Ferry Landing on the east side of the Columbia River and just above the high water mark. The Bonneville Power Administration cross the river approximately 25 meters (82 feet) south of the site.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: partially buried.

Waste Type: Misc. Trash and Debris

Waste Description: The site contains a relatively small amount of metal such as wire rope, barbed wire, wire, and sheet metal.

Code: 600-231 **Classification:** Not Accepted

Names: 600-231; RCRA General Inspection 200WFY97 Item #5 Historic Disposal Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site contains pre-Hanford debris, including several rusty metal food containers, empty paint cans, buckets, glass, small pieces of concrete, cable, barbed wire, sheet metal, and a rubber tire.

Location: The site is located on the right bank of the Columbia River (facing downstream) between 100B Area and 100K Area, approximately 250 meters west of the old Hanford Irrigation Project Pumphouse and approximately 40 yards from the river.

Waste Type: Misc. Trash and Debris

Waste Description: Small pieces of concrete, a rubber tire and glass.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The debris is buckets, cans and wire.

Code: 600-234 **Classification:** Not Accepted

Names: 600-234; RCRA General Inspection 200WFY97 Item #11 Historic Disposal Site **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is pre-Hanford farmstead debris. The site contains miscellaneous materials including cans, bottles, sheetmetal, and wire. The site covers an area approximately 45.7 meters (150 feet) square.

Location: The site is located approximately one mile north (upstream) of the White Bluffs Ferry Landing on the east side of an unnamed island on the Columbia River, approximately 27.4 meters (30 yards) from the edge of the water.

Waste Type: Misc. Trash and Debris

Waste Description: The waste is pre-Hanford homestead waste, including metal, glass, and wire.

Code: 600-236 **Classification:** Accepted

Names: 600-236; Bioremediation Site; Petroleum Contaminated Soil; Soilcell 607 Site **Reclassification:** Rejected (11/22/2004)

Type: Surface Impoundment **Start Date:** 1/1/1994

Status: Inactive **End Date:** 1/1/1995

Description: The site was a treatment facility for petroleum-contaminated soil. The site is now a closed

Description: with earth berms on all sides. The site is lined with black plastic, soil is spread evenly on top of the black plastic throughout the interior of the site. The site is posted on all sides with signs stating: "WIDS Site 600-236".

Location: The site is located between the 200 East and 200 West areas and is located approximately 300 meters (1000 feet) east-northeast of the 200 Area Fire Station.

Waste Type: Soil
Waste Description: Petroleum contaminated soil.

Code: 600-237 **Classification:** Not Accepted

Names: 600-237; Gable Pond (216-A-25) North and South Borrow Pits **Reclassification:** None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1984

Status: Inactive **End Date:** 1/1/1988

Description: The borrow pits are large, shallow scraped areas along the north and south sides of the stabilized Gable Pond. The stabilized pond surface was vegetated with wheat grass, but the borrow pits are bare.

Location: The sites are located north of 200 East Area, and north of Route 11A, adjacent to the backfilled Gable Pond.

Process Description: Gable Mountain Pond was backfilled and stabilized in a phased approach, over a four year time span ranging from 1984 to 1988. Clean backfill material was taken from areas adjacent to the north and south sides of the pond. No waste has been put into the borrow areas. Only clean backfill material was removed.

Related Sites/ Structures: This borrow pit provided fill for the stabilization of site 216-A-25, Gable Pond.

Code: 600-240 **Classification:** Accepted

Names: 600-240; 615 Hot Mix Plant Debris; Debris in Pit 17; Hanford Aggregate Pit Debris **Reclassification:** Rejected (5/31/2001)

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is metal and wooden debris scattered within Gravel Pit #17. The debris originated from the 615 Hot Mix Plant and operation of the gravel pit (Hanford Aggregate Pit). Some of the pipes and wood are partially buried in scattered locations. The pile is naturally revegetating to grasses and rabbitbrush. To the east of the pit is an irregularly shaped pile of a mix of asphalt pieces, soil, gravel, and cobble, about 12 meters by 3.5 meters by 1 meter high (40 feet by 12 feet by 3 feet high). Rabbitbrush plants have started to colonize the pile.

Location: This site is west of Route 2 North, on the north side of the Hot Mix Plant location.

Release Description: There is no evidence of hazardous or dangerous wastes at the site.

Related Sites/ Structures: This pit is related to the adjacent Hot Mix Plant (600-20, reclassified as Rejected), and adjacent to Pit #16, site 600-239.

Waste Type: Misc. Trash and Debris
Waste Description: The waste is metal pipe, coarse mesh screens, wood, sheetmetal, concrete, a rubber tire, and a

waste**Description:** pile of asphalt pieces mixed with soil, gravel, and cobble.

Code: 600-244 **Classification:** Not Accepted
Names: 600-244; Gravel Pit #6; Gravel Pit 6; Pit 6 **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Active **End Date:****Description:** The pit is a source for gravel used for bedding and backfill material. A gravel road leads into a large irregular shaped pit area. The physical boundaries of the site are larger than the area where gravel is currently being excavated. The four corners of the pit's largest extents are marked with posts (railroad ties installed vertically). Stock piles of gravel and excavation equipment are present, indicating active gravel pit operations. A chain link fenced equipment storage area is located in the northwest corner of the Pit #6 property.**Location:** Gravel Pit #6 is located west of 300 Area, on the west side of Highway Route 4S. It is south of the 618-7 burial ground.**Related Sites/ Structures:** The Bioremediation Area (WIDS Site 600-243) is located within the boundaries of the Gravel Pit #6 area, and northeast of the current excavation area. A large spoil pile of dirt, rock, and debris is located in the northwest quadrant of the site (WIDS Sites 600-249). For a short time in 1987, water treatment filter backwash solutions were trucked to this area for disposal (WIDS Site 300 IFBD).

Code: 600-245 **Classification:** Not Accepted
Names: 600-245; Gravel Pit #8; Pit 8 **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Active **End Date:****Description:** The gravel pit is an irregular shaped depression. No waste of any kind was found in the pit.**Location:** Gravel Pit #8 is located approximately 3.2 kilometers (2 miles) north of the 300 Area. It is north of where the railroad tracks cross Route 4S and east of Gravel Pit #9.

Code: 600-246 **Classification:** Accepted
Names: 600-246; Gravel Pit #9; Inert/Demolition Waste Landfill; Pit 9 **Reclassification:** Rejected (1/27/1999)
Type: Burial Ground **Start Date:**
Status: Active **End Date:****Description:** Gravel Pit #9 is a large depression where gravel is extracted. The gravel pit is also used as an inert landfill for nondangerous/nonradioactive wastes.**Location:** Pit #9 is located approximately 1.2 kilometers (2 miles) north of 300 Area, east of Route 4S.**Related Sites/ Structures:** WIDS site 600-278, a Bio Remediation pad, was located within the gravel pit.**Waste Type:** Demolition and Inert Waste**Waste Description:** The waste includes concrete, wood and asphalt. Soil was removed from around the 384 fuel oil day tanks and placed in Pit 9 in 1999. Soil sample results showed a plutonium spike, so the bio-remediation pad was posted as a Soil Contamination Area.

Code: 600-247 **Classification:** Accepted
Names: 600-247; Gravel Pit #10; Inert Landfill; Pit 10 **Reclassification:** Rejected (1/27/1999)
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The site is an old gravel pit. Once extraction operations were completed, the site was then used as a solid waste landfill for inert and demolition waste. Gravel Pit #10 has been closed and backfilled to grade. The site perimeter is marked with posts and chain.
Location: Gravel Pit #10 is approximately 1.2 kilometers (2 miles) north of 300 Area on the west side of Route 4S.
Waste Type: Demolition and Inert Waste
Waste Description: The gravel pit is an approved inert landfill. Waste includes wood, concrete and asphalt.

Code: 600-248 **Classification:** Not Accepted
Names: 600-248; Gravel Pit #11; Pit 11 **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Active **End Date:**
Description: Gravel Pit #11 is a large, rocky excavated area north of the WYE Barricade. It is actively being used as a source of gravel for backfill.
Location: The site is located north of the WYE Barricade, on Route 2S, near mile marker 6, on the east side of the road.
Related Sites/ Structures: The site is associated with WIDS Site 600-23, Dumping Area Within Gravel Pit #11.

Code: 600-249 **Classification:** Accepted
Names: 600-249; Debris Within Gravel Pit 6 **Reclassification:** Rejected (4/6/1999)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is areas of dumped material located within Gravel Pit #6. There are spoil piles of material excavated during the construction of the Environmental Molecular Sciences Laboratory (EMSL) facility that are located in the northwest section of the Gravel Pit #6 property boundaries. Miscellaneous debris can be seen in scattered piles and protruding from the soil.
Location: The debris is located in the northwest quadrant of Gravel Pit #6.
Related Sites/ Structures: The site is associated with Gravel Pit #6 (WIDS Site 600-244), and WIDS Site 300 ASH PITS.
Waste Type: Misc. Trash and Debris
Waste Description: The site contains miscellaneous debris and ash pit sludge. Visible debris includes metal pipes, PVC pipes, concrete and tires. (The tires and some other debris were removed in 1999 for proper disposal) Periodically, damp ash was trucked from the 300 Area Ash Pits (WIDS Site 300 ASH PITS) and placed in Pit #6. Eventually, the area reserved for the ash became filled. The area was covered with dirt. This is the same area where a bioremediation pad was located (WIDS Site 600-243).

Code: 600-250 **Classification:** Not Accepted
Names: 600-250; Metal Debris from RCRA General Inspection #LORIVFY97 Item #4 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is a recorded cultural resources site, a historic homestead where rusty sheet metal vent ducting and other miscellaneous debris have been abandoned, including: broken bricks and concrete, old lumber, metal cables and wiring. Some of the debris extends on to the top of the bank, including some half-buried, rusty cans.
Location: The site is located approximately 68.8 meters (225 feet) upstream from Columbia River mile marker #26 (Hanford mile marker) and USGS river mile 362. The site is also approximately 36.6 meters (120 feet) from the water's edge (on the date of inspection).
Waste Type: Misc. Trash and Debris
Waste Description: The waste is sheet metal and other debris.

Code: 600-251 **Classification:** Not Accepted
Names: 600-251; Steel Pipe from RCRA General Inspection #LORIVFY97 Item #6 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is a near-vertical (tilted at about 20 degrees) steel pipe with the above ground portion of the pipe approximately 1.2 meters (4 feet) in length. The reason the pipe is tilted is not known. The pipe appears to be buried in the ground about 20 feet (6 meters) (John Auten, personal communication, December 19, 2001). The pipe is approximately 0.46 meters (1.5 feet) in diameter and has a 1.3 centimeters (0.5 inches) thick wall. The pipe is rusted and is filled with earth inside the pipe up to the level where it enters the ground. A well identification label is attached to its side (B8542). The pipe is covered with a flat metal lid.
Location: The site is located between Hanford mile markers 26 and 27 (USGS river miles 362 and 361). The site is on the south bank of the Columbia River, approximately 45.7 meters (150 feet) from the water edge (at the time of the inspection).
Waste Type: Misc. Trash and Debris
Waste Description: The waste is a 40 centimeter (16 inch) diameter steel pipe extending from the ground approximately 1.5 meters (5 feet).

Code: 600-252 **Classification:** Not Accepted
Names: 600-252; Old Tank from RCRA General Inspection #LORIVFY97 Item #8 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site is an old, rusty, corrugated steel tank laying on its side. The tank is approximately 2.74 meters (9 feet) long, 0.91 meters (3 feet) in diameter, and has a 25.4 centimeter (10 inch) hole cut in its side near the bottom, and two short schedule 40 pipes on the side at either end (one pipe at each end). This item meets the specific reporting criteria of the inspection as a solid

waste disposal site not previously identified for remedial action. During a site inspection on October 8, 1997 the tank was measured to be (8 feet) 2.44 meters long and (3.5 feet) 1.07 meters in diameter with a tape measure.

Location: The site is located on the south bank of the Columbia River at Hanford mile marker 2 (USGS river mile marker 386) and approximately 228.6 meters (750 feet) from the water edge (at the time of the inspection). The site is also located approximately 1.5 kilometers (0.9 miles) west, northwest of 100 B/C Area just north of Route 6. A site warning siren located just north of Route 6 aids in approaching the site. The site is located between the siren and the Columbia River.

Process Description: The site was visited on September 26, 2000, with a cultural resource specialist familiar with the history of the farms in this area. The tank was identified as a water tank because of the lack of any oil staining inside of or below the tank, and the cuts for the pipes fit irrigation piping but not typical oil heating or storage systems.

Related Sites/ Structures: This tank is part of the old homestead found in the same area.

Waste Type: Misc. Trash and Debris
Waste Description:

Code: 600-253	Classification: Not Accepted
Names: 600-253; Gravel Pit #24; Pit 24	Reclassification: None
Type: Depression/Pit (nonspecific)	Start Date:
Status: Active	End Date:

Description: Gravel Pit #24 is a large excavated area that is actively used as a source of gravel and sand material. Because the bottom of the pit reached groundwater, a wetland was deliberately created in 1999 by excavating a little deeper and contouring the bottom to form islands and different depths of water. The pit was expanded to the west in 2000 as a source of additional backfill for remedial actions in the 100 B Area.

Location: The pit is located northwest of 100-B/C Area on the north side of Route 6, near the Columbia River

Related Sites/ Structures: This gravel pit is being used (from 1998 until end of remediation) for backfill at 100 B/C sites remediated as part of site cleanup. A rejected waste site, 600-34, is east of the gravel pit, just off the northwest corner of the 100 B/C Area. It is the site where baled tumbleweeds were dumped. The tumbleweed bales have been removed.

Code: 600-254	Classification: Not Accepted
Names: 600-254; Abandoned 251-W Substation Mineral Oil Underground Pipelines	Reclassification: None
Type: Product Piping	Start Date: 1/1/1946
Status: Inactive	End Date:

Description: The Electrical Distribution equipment yard is surrounded by a locked, chain link fence and posted with "Danger" signs. The ground surface is covered with gravel. Part of the pipeline is visible at the surface, and has been painted red.

Location: The 251-W Electrical Substation is located north of Route 11A, and southwest of the 200 North

Area 212-P building.

Process Description: Oil Filled Circuit Breakers (OCB's) are used in high voltage areas to extinguish any sparks caused by the triggering of any circuit breaker actions before the sparks can cause damage. The oil in the circuit breakers is usually plain mineral oil. 251-W was built in the 1940's with an underground oil pipeline to fill the circuit breakers. This process ended in the 1960's, and thus the underground oil pipeline system at 251-W has not been used since then. Because PCBs in electrical equipment has been a concern, the potential for these pipelines to be contaminated was evaluated. In the 1970's, manufacturers of new equipment began to use oil that contained polychlorinated biphenyls (PCB's), such as a brand name oil called Askeral. During pumping activities of oil from one circuit breaker to another across the Hanford Site, the equipment became cross contaminated with PCB's. But, because the underground pipelines at 251-W were abandoned in the 1960s, they were not used to carry PCB-containing mineral oil. PCB's became regulated as a hazardous material in 1976. By 1980, the Hanford Electrical Utilities had separate equipment for PCB equipment and non-PCB equipment to stop further cross contamination of equipment and material.

Waste Type: Equipment
Waste Description: In 1996, a section of pipe was removed from the 251-W yard, taken to 212-P, cut up and placed in a barrel. Wipe samples were collected from the outside and inside of the pipe and analyzed at WSCF. All three samples contained less than 1 ppm of PCB and the pipe is considered to be non-PCB material. Since the oil pipeline had been abandoned several years prior to the to the introduction of PCB oil to the Hanford Site, no PCB contaminated oil would have passed through the pipeline.

Code: 600-255 **Classification:** Not Accepted
Names: 600-255; 300 Area Stormwater Percolation Pond **Reclassification:** None
Type: Pond **Start Date:** 1/1/1980
Status: Active **End Date:**

Description: The site is a very large, unlined basin. It has a gravel bottom and coble covered sloped sides. There are two effluent pipes protruding from the east wall of the basin. Using the contour patterns on Arcview, it was determined the site is approximately 90 meters (295 feet) long and 30 meters (98 feet) wide.

Location: The basin is located west of 300 Area, on the west side of Highway 4S.

Process Description: The stormwater is directed to two collection points inside the 300 Area, located adjacent to the west 300 Area perimeter fence, behind the 3745-B building that has a packed gravel surface. The perimeter fence of the 300 Area is posted with "Underground Radioactive Material" signs. There is no documentation to confirm that contamination exists beneath the gravel surface behind the 3754 Building, but the possibility exists anywhere inside the 300 Area fence. Since no weeds are growing in the gravel, it is possible the gravel is sprayed with herbicide. The water flows through piping, under the highway, to the basin.

Waste Type: Stormwater Runoff
Waste Description: The site receives stormwater runoff from the northwest section of the 300 Area.

Code: 600-256 **Classification:** Accepted
Names: 600-256; Atmospheric Dispersion Modeling Towers; Ethylene Glycol Release **Reclassification:** Rejected (7/28/2008)

Description: food cans, a small concrete box (filled in with soil), and a little broken glass.

Code: 600-260

Classification: Accepted

Names: 600-260; Roped Off Area Near Meteorological Tower

Reclassification: Rejected (7/28/2008)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site's vegetation cover is composed of mature sagebrush and grasses and is fairly complete. T-posts laying on the ground are all that remain of the site originally found in 1999. An attached photograph shows the condition of the site as it looked in 2003.

Location: The site is located in the area between 200 East and 200 West, north of Route 3. It is approximately 415 meters (1362 feet) southeast of the Meteorology Tower and just east of the arc road labeled U4.

Waste Type: Misc. Trash and Debris

Waste Description: After discovering the roped area in 1999, the site was investigated and a radiation survey was done. No radioactive contamination was found. No soil discoloration or items were found to indicate any other waste in the area.

Code: 600-263

Classification: Accepted

Names: 600-263; Pile of Cans and White Powder

Reclassification: Rejected (5/31/2001)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: There are seven cans scattered within a distance of 2 meters (6.6 feet) of each other. The cans are rusty and approximately 20 centimeters (8 inches) long. Most of the cans are broken open, revealing their current contents of calcium carbonate. No vegetation stress was noticed. A few of the cans were intact, but appeared to be empty. Some lettering could be seen on the cans. Some of the cans were marked "RL - HAR, 300 Order, -----MMABLE, Sealed For Use" One intact canister is located approximately 6 meters (20 feet) from the group of ruptured cans. It has lettering that reads "-----RAY, ___HARGE, Y-45-SE-6".

Location: The cans are located in the White Bluffs area. They are northeast of the intersection of Route 2 and Federal Avenue, and northeast of the old White Bluffs Bank building.

Process Description: Conversations between the Hanford Fire Department and the U.S. Army Corp of Engineers determined the cans originally held calcium hydride, which was used to produce hydrogen for weather balloons. In the presence of water calcium hydroxide produced hydrogen and calcium hydroxide; calcium hydroxide exposed to the environment becomes calcium carbonate.

Waste Type: Abandoned Chemicals

Waste Description: The chemical originally in the cans was calcium hydride, with a chemical formula of CaH₂.

Description: Hydrogen and calcium hydroxide are produced when calcium hydride is mixed with water. Calcium hydroxide rapidly decomposes to calcium carbonate in the environment.

Code: 600-264

Classification: Accepted

Names: 600-264; Abandoned Oil Drum

Reclassification: Rejected (6/28/2001)

Type: Dumping Area

Start Date:

Status: Inactive**End Date:** 1/1/1943

Description: When discovered, the 55 gallon drum was laying on its side, surrounded by orchard smudge pots. The drum was inside a recently erected "Caution" tape barrier. No soil discoloration was noted in March 2000, but according to Ron Del Mar, who made the report when the drum was removed (April 18, 2000), there had been past spills to the ground from the drum. A field visit in September 2000 showed a small area of old, hardened oil-soaked ground. This oiled area was removed in June 2001. Two other drums were nearby, one to the south and one to the north. Both of these drums were empty and neither showed discolored soil underneath.

Location: The site is located 1333 meters (0.83 miles) northwest of Gravel Pit 24, west of 100-B Area.

Waste Type: Oil

Waste Description: The oil remaining has hardened on the ground surface.

Code: 600-265**Classification:** Not Accepted

Names: 600-265; Unidentified Pipes Near the 618-10 Burial Ground

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:**Status:** Inactive**End Date:**

Description: The site consists of two, 5 centimeter (2 inch) diameter, stainless steel pipes protruding approximately 10 centimeters (4 inches) above ground. The pipes are approximately 1.5 meters (5 feet) apart. Each stainless steel pipe has a rusted pipe inserted in the center that extends approximately 0.6 meters (2 feet) above ground.

Location: The site is located approximately 15.25 meters (50 feet) west of the 618-10 Burial Ground.

The Site Was Consolidated With:

Code: 618-10

Names: 618-10; 300 North Solid Waste Burial Ground; 318-10

Code: 600-266**Classification:** Accepted

Names: 600-266; Trash Dump West of Gate 117A

Reclassification: Rejected (5/31/2001)

Type: Dumping Area

Start Date:**Status:** Inactive**End Date:**

Description: This site was discovered after the June 2000 fire. Large sagebrush had been concealing the debris. After the fire destroyed the sagebrush, an area of about 20 by 20 meters (65 by 65 feet) containing most of the trash was noted. Other material trailed off to the north. The debris (except for the cable) was removed within a month after the fire exposed it.

Location: The site is about 50 meters (150 feet) northwest of Highway 240, about 300 meters (1,000 feet) west of Gate 117A.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Metal, glass, cinder blocks, and transite debris had been disposed here, but are now removed.

Description:**Code:** 600-267**Classification:** Not Accepted

Names: 600-267; Weather Station 90 Day Storage Pad

Reclassification: None

Status: Active **End Date:**

Description: The site is an underground pipeline. It is marked on the surface with Underground Radioactive Material - Pipeline signs. It passes through Diversion Box 6241-A, located east of Beloit Ave. in 200 West Area. The line continues to the Vent Station 6241-V, located between 200 East and West areas, and runs northwest of the 241-EW-151 Vent Station. A short portion of the pipeline ties into the former termination point at the 244-A Lift Station. A segment of pipeline was extended to 241-AN Tank Farm.

Location: The pipeline extends from 241-SY Tank Farm inside 200 West Area to the 244-A Lift Station in 200 East Area. A large portion of the line is located between the 200 West and 200 East areas, south of Route 3. A segment of pipeline was extended to 241-AN Tank Farm.

Process Description: The pipeline was constructed in 1995 to convey tank waste to 200 East Area and will support the tank waste Vitrification project. It includes lines SNL-3150 and 3160.

Related Sites/Structures: The pipeline is associated with the 244-A lift station, Diversion Box 6241-A and Vent Station 6241-V.

Waste Type: Process Effluent

Waste Description: The underground encased line transfers tank farm liquid waste between 200 West Area and 200 East Area.

Code: 600-276 **Classification:** Not Accepted

Names: 600-276; Cold Test Facility; GEDF; Hanford Geotechnical Engineering and Development Facility; Little Egypt **Reclassification:** None

Type: Laboratory **Start Date:** 1/1/1982

Status: Inactive **End Date:**

Description: The site is surrounded with light posts and chain. A vehicle gate is posted "Authorized Personnel Only". The site is a large open field with a high mound of soil in the center. Several pipes extend vertically through the surface of the soil in some areas. A small pallet containing damaged bags of bentonite is located in the southeast corner of the area adjacent to some vertical pipes. Two steel hinged plates cover access holes to underground culverts used as monitoring stations for buried waste tests.

Location: The site is located approximately 4 miles northwest of 300 Area, west of Route 4 South.

Process Description: The Hanford Geotechnical Engineering and Development Facility became operational in 1982 to test burial ground subsidence control alternatives. The original site consisted of three test areas. Each test area was a cluster of buried simulated waste with a center monitoring caisson. The monitoring caissons were underground rooms constructed of a circular corrugated metal, measuring 3 meters (10 feet) in diameter and 2.5 meters (8.5 feet) deep. The monitoring caissons had a metal roof and a personnel access hatch. Each caisson contained an array of monitoring equipment. Each cluster contained three areas of buried simulated waste. The simulated waste consisted of boxes containing styrofoam and wood chips and stacks of buried 208 liter (55 gallon) drums. Later, the site was used to perform "cold test" demonstrations of geotechnical engineering prototype systems for in situ isolation and stabilization of waste disposal structures. Mock up burial trenches, caissons, vertical pipe units, drain fields, waste transfer lines and cribs were installed in the area for grout treatment and equipment testing purposes. The site contains nine areas containing simulated buried waste. The 1994 Technical Task Plan Proposal states the site also includes four tile fields and two underground storage tanks. However, Steve Phillips stated that no storage tanks or tile fields were ever placed at this site. In 1986, an area containing caissons, designed to represent the types of caissons used for

Hanford waste, was installed.

Waste Type: Equipment
Waste Description: Only simulated buried waste was placed into this test site.

Code: 600-283 **Classification:** Not Accepted
Names: 600-283; Suspect Buried Equipment in Gravel Pit 11 **Reclassification:** None
Type: Dumping Area **Start Date:** 1/1/1983
Status: Inactive **End Date:**
Description: The site is currently an area of recently excavated gravel material. It is not marked or posted. There is no visual evidence of buried material.
Location: The equipment was placed in the southeast portion of Gravel Pit 11.
Process Description: Gravel Pit 11 is an active gravel pit. Material is removed from this pit periodically. Nothing unusual has been reported during excavation of material in the southeast portion of Gravel Pit 11.

Related Sites/ Structures: The suspect equipment is associated with Gravel Pit 11 (sitecode 600-248).

Code: 600-291-PL **Classification:** Accepted
Names: 600-291-PL; TEDF Line; 200 Area Treated Effluent Disposal Facility Pipeline **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Active **End Date:**
Description: The TEDF system includes approximately 11 miles of pipeline, three pumping stations, one sample station and two five acre disposal ponds.
Location: The TEDF basis are fed by a series of pipelines that extend from T-Plant, the Plutonium Finishing Plant, 222-S and the 283-W Water Treatment facility in 200 West area and 225-B, 283-E, 241-AZ Tank Farm and the 242-A Evaporator in 200 East Area.
Process Description: The TEDF pipe collection system does not have any treatment or retention capacity. It conveys treated effluent to the disposal basins, located east of 200 East Area.

Related Sites/ Structures: The piping is associated with T-Plant, the Plutonium Finishing Plant, 222-S and the 283-W Water Treatment facility in 200 West area and 225-B, 283-E, 241-AZ Tank Farm and the 242-A Evaporator in 200 East Area, the 200 East Powerhouse Ditch and pipeline (200-E-237-PL) and the 200 TEDF disposal basins.

Code: 600-292-PL **Classification:** Accepted
Names: 600-292-PL; SALDS Pipeline; State Approved Land Disposal Site Pipeline **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:** 1/1/1995

Status: Active **End Date:**

Description: The site is an underground, 20 centimeter (8 inch) diameter PVC pipeline that feeds the State Approved Land Disposal Site. The pipeline is approximately 6 miles long.

Location: The pipeline is located north of 200 East Area and 200 West Area. The pipeline originates at the Effluent Treatment Facility, near the northeast corner of 200 East Area. It extends westward to the State Approved Land Disposal site, north of 200 West Area.

Process Description: The SALDS receives liquid waste that has been treated and verified at the 200 Area Effluent Treatment Facility via the 8 inch diameter plastic pipeline. The liquid waste meets delisting requirements of the 216 permit #ST 4500 and is discharged as nondangerous waste; however it may contain tritium.

Related Sites/ Structures: The pipeline is associated with the Effluent Treatment Facility and the State Approved Land Disposal Site (sitecode 600-211).

Waste Type: Process Effluent

Waste Description: Treated and verified liquid waste received from the 200 Area Effluent Treatment Facility (ETF). The waste meets the delisting requirements of the 216 permit ST 4500 and is considered nondangerous; however it may contain tritium.

Code: 600-304 **Classification:** Not Accepted

Names: 600-304; White Bluffs Sanitary Water **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of the White Bluffs sanitary water service piping as shown on construction drawing H-11-3709 and three associated features discovered during the Orphan Site Evaluation (OSE) process.

Location: A network of clean water service pipelines connect facilities as shown in White Bluffs drawing plot plan H-11-3709 and C-3316. A total of 13,870 meters (45,507 feet) of pipeline were plotted with 125 segments represented by 168 vertices locations with attached coordinates.

Process Description: Little is known about the pipeline sizes, depth or construction material.

Code: 600-330 **Classification:** Accepted

Names: 600-330; Division Street Service Station **Reclassification:** Rejected (6/10/2010)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: During the 2010 geophysical investigation it was noted that the site was flat terrain with grasses and occasional rabbit brush. Originally the site was thought to consist of potential underground components of a service station, including storage tanks, associated piping, and contaminated soils.

Location: The site's historical location is on the east side of Division Street, south of Avenue A and west of the administration building (IN-323). Further historical research indicated that the service station maybe located on the east side of Division Street, south of Avenue A and east of the theater building (IN-163 and IN-321). The coordinates for the site are E585804.0, N139435.0.

Process Description: This site was used for the dispensing of petroleum products for automotive use. The specific

Description: location of underground storage tanks and associated piping for this site are unknown.

Waste Type: Oil

Waste Description: The waste consists of underground storage tanks, associated piping and underlying soil.

Code: 600-335

Classification: Accepted

Names: 600-335; Service Station and UST

Reclassification: Rejected (6/10/2010)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: During the 2010 geophysical investigation it was noted that the site was flat terrain with grasses and occasional rabbit brush. Originally, the site was thought to consist of potential underground components of a service station, including storage tanks, associated piping, and contaminated soils, that were identified in historical photo # P-8244. The photo also appears to show two gasoline pumps.

Location: The coordinates for the site are E585924.0, N139746. The site is located approx. 54 meters (177 feet) to the SW of the former 145 Building.

Code: 600-336

Classification: Accepted

Names: 600-336; 609-G Septic Tank and Tile Field; 6607-03; 6607-3

Reclassification: Closed Out (11/4/2009)

Type: Septic Tank

Start Date: 1/1/1989

Status: Inactive

End Date: 1/1/1998

Description: The waste site is an underground septic tank and tile field.

Location: The septic tank and tile field are located south of Route 3, southwest of the 200 Area Fire Station.

Related Sites/ Structures: The septic system was associated with the 609-G office facility.

Closure Info: The septic tank and tile field were abandoned per WAC codes.

Code: 600-337

Classification: Accepted

Names: 600-337; 6290 Building Drain Field; 6607-01; 6607-1; Rigging Services Facility Septic

Reclassification: None

Type: Septic Tank

Start Date: 1/1/2003

Status: Active

End Date:

Location: This septic system is located outside the west perimeter fence of 200 East Area. It is northeast of the 6290 Rigging Facility.

Process Description: A new tank was installed to meet facility expansion requirements.

Code: 616

Classification: Accepted

Names: 616; 616 Building Non-Radioactive Dangerous

Reclassification: Closed Out (10/24/2001)

closure standards for all constituents.

Code: 618-6 **Classification:** Accepted
Names: 618-6; Solid Waste Burial Ground #6 **Reclassification:** Rejected (10/7/1998)
Type: Burial Ground **Start Date:** 1/1/1943
Status: Inactive **End Date:** 1/1/1944

Description: The 618-6 Burial Ground was originally located in the southeast corner of 300 Area near where the 325 Building is currently located. The waste was exhumed and relocated twice to allow for 300 Area construction expansions. In 1962, the contents were permanently moved to the 618-10 Burial Ground.

Location: This burial ground has been moved twice. The site was first located in the southeast corner of the 300 Area. Then the contents of the site were moved to just south of the 316-1 Process Pond. Finally, the contents were exhumed again and moved to the 618-10 Burial Ground.

Waste Type: Equipment
Waste Description: The unit contained solid uranium waste.

Code: 622-1 **Classification:** Accepted
Names: 622-1; Construction and Demolition Debris **Reclassification:** Rejected (5/31/2001)
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: All material has been removed and the site sampled for radioactivity, asbestos, and organics. The site is no longer marked or posted.

Location: This site is located south of the intersection of Sixteenth Street and Albany Avenue outside the perimeter fence of the 200 West Area.

Waste Type: Asbestos (non-friable)
Waste Description: The site contained transite siding.

Waste Type: Asbestos (friable)
Waste Description: The site contained friable asbestos.

Waste Type: Misc. Trash and Debris
Waste Description: The site contained miscellaneous trash.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: Some 208-liter (55-gallon), 19-liter (5-gallon), and 4-liter (1-gallon) containers were present at the site.

Code: 622-R ST **Classification:** Accepted
Names: 622-R ST; 6607-02; 6607-2; 622-R Atmospheric Physics Laboratory Septic Tank; 622-R Septic Tank **Reclassification:** None

the 200 Area Fire Station.

Process Description: The vent station is located at the hydraulic high point of the RCSTS, and the pipeline slopes down continuously from this point to the two ends. The main structure (room 105) is an underground building with the lower half of the building below finish grade. It houses the transfer piping and other items that support operation of the RCSTS and is designed for maintenance access on an infrequent basis. The main structure is cast-in-place concrete equipped with a stainless steel floor liner and a carbon steel shielding floor located above the transfer piping.

Related Sites/ Structures: The vent station is associated with the Replacement Cross Site Transfer Line (WIDS sitecode 600-269)

Waste Type: Process Effluent

Waste Description: Some residual waste will be found in the dead legs of the piping systems.

Code: 6607-1

Classification: Accepted

Names: 6607-1; H-40 Gun Site Septic Tank

Reclassification: Rejected (9/10/2010)

Type: Septic Tank

Start Date: 1/1/1945

Status: Inactive

End Date: 1/1/1958

Description: This site includes a manhole located near the kitchen/mess hall and toilet/shower foundations and a below ground concrete septic tank with three manholes. The manholes and the septic tank have been backfilled with clean pit run material and are no longer visible, and the ground over the tank is gravel as of June 2001.

Location: This site is located 1.1 kilometers (0.7 miles) southeast of the southeast corner of 200 East Area, on the south side of Route 4 South. Trees viewed from Route 4 South aid in locating the site. The septic tank is located in the eastern portion of the H-40 Gun Site.

Process Description: This site provided sanitary sewage disposal for a former U. S. Army facility. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Sites/ Structures: The site is associated with 600-227 (the H-40 Gun Site Building Foundations kitchen and toilet/shower buildings).

Waste Type: Water

Waste Description: The tank contains water to a depth of 0.9 meters (3 feet).

Waste Type: Sanitary Sewage

Waste Description: The unit received unknown amounts of sanitary sewage.

Code: 6607-2	Classification: Accepted
Names: 6607-2; Gun Site H-42 Septic Tank	Reclassification: Rejected (9/10/2010)
Type: Septic Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1955
Description: This site includes a manhole, two septic tanks and connecting tile field. In May 2001, the open holes associated with the septic system were backfilled. The original manhole measured 71 centimeters (28 inches) diameter by 86 centimeters (34 inches) deep, with two inlet pipes, one outlet pipe and is constructed of cement bricks and mortar. The large septic tank is below grade and had three manholes and a concrete box structure visible above grade. The manholes were covered with concrete covers. The center manhole was broken providing visual access to the interior of the tank, prior to being backfilled. In 1997, the tank contained water. An above ground structure, located at the west end of the tank, appears to have been used as a pumping station to pump liquid to the smaller tank located to the west. The overall site dimensions of the large tank are 21 by 9 meters (70 by 30 feet). The small tank to the west measures 2.2 by 1.7 meters (7.3 by 5.8 feet) and has one covered manhole. The structures had been surrounded by orange plastic fencing, but the fencing was destroyed in the 2000 grass fire. The open features were backfilled in 2001.	
Location:	The site is located 6.4 kilometers (4 miles) south of 200 East Area, on the south side of Army Loop Road and east of the powerline road to Rattlesnake Mountain.
Process Description:	This site provided sanitary sewage disposal for a U.S. Army Facility.
Related Sites/ Structures:	The site received sanitary sewage from the 600-49, H-42 Gun Site Building toilet/shower building and the kitchen/mess hall building.
Waste Type:	Water
Waste Description:	The septic tank contained water at the time of the inspection.
Waste Type:	Sanitary Sewage
Waste Description:	The unit received unknown amounts of sanitary sewage.

Code: 6607-3	Classification: Accepted
Names: 6607-3; Anti-Aircraft Artillery Site H-51 Septic Tank	Reclassification: Rejected (9/10/2010)
Type: Septic Tank	Start Date: 1/1/1945
Status: Inactive	End Date: 1/1/1955
Description: The septic tank is constructed of concrete, has three open manholes and an above ground square concrete box-like structure located on the east end. This box-like structure may have been used to support a pump for pumping liquid to the drain field. The tank is below grade. The roped off section measures 17 by 4.6 meters (55 by 15 feet) and the tank interior is 3.4 meters (11 feet) deep. The drain field is located east of the septic tank. The septic tank and four manholes are delineated by orange plastic fencing.	
Location:	This site is located approximately 2.4 kilometers (1.5 miles) southwest of 200 West Area just west of Army Loop Road between Highway 240 and Army Loop Road.
Process Description:	This site provided sanitary sewage disposal for a U.S. Army Facility.

Related Sites/ Structures: The site is associated with the former U.S. Army Anti-Aircraft Gun Site H-51, which is sites 600-53 (the building foundations) and 600-220 (the dumping areas).

Waste Type: Sanitary Sewage

Waste Description: The unit received unknown amounts of sanitary sewage.

Code: 6607-4 **Classification:** Accepted

Names: 6607-4; 6607-4 Septic System; Replacement for 2607-FSN; 609A Building Septic Tank; 6607-04 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1989

Status: Active **End Date:**

Description: The septic tanks consist of two concrete tanks placed in series. The design capacity of the tanks was 1800 gallons (6813 liters) with the first tank being 1200 gallons (4542 liters) (minimum) and the second being between 600 and 1000 gallons (2271 liters and 3785 liters).

Location: The septic system is located east of the 609-A Building (200 Area Central Fire Station) and south of Route 3. The septic tanks are approximately 100 feet east of the northeast corner of the 609-A building. The drainfield is located just east of the tanks.

Related Sites/ Structures: The 6607-4 septic system is associated with the 609-A building and the 2607-EP septic system.

Waste Type: Sanitary Sewage

Waste Description: The system receives sanitary sewage from the 609-A building.

Code: 6607-5 **Classification:** Accepted

Names: 6607-5; 616 Building Septic System; 6607-05 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1986

Status: Active **End Date:**

Description: The unit consists of a septic tank and a drain field. The septic tank is surrounded by four yellow posts and is covered by gravel. The drain field is surrounded by metal posts and chain. The drain field is not marked by a sign.

Location: The tank is located on the south side of the 616 Building. The drain field extends southwest of the tank.

Process Description: The unit provides sanitary sewage disposal for the 616 Building.

Related Sites/ Structures: The site is associated with the 616 Nonradioactive Hazardous Waste Storage Facility.

Waste Type: Sanitary Sewage

Waste Description: The unit receives sanitary wastes from the 616 Building.

Code: 6607-6 **Classification:** Accepted

Names: 6607-6; 6701 Building Septic Tank and Tile **Reclassification:** None

Field; Wye Barricade Septic; 6607-06 Septic System

Type: Septic Tank **Start Date:** 1/1/1991

Status: Active **End Date:**

Description: The waste site is an underground septic tank and tile field.

Location: The septic tank is located at the Hanford Wye Barricade. It is located east of the guard shack building.

Code: 6607-7 **Classification:** Accepted

Names: 6607-7; Yakima Barricade Septic System and Permitted Holding Tank; 6607-07 **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The waste site is an underground septic holding tank.

Location: The holding tank is located north of the Yakima Barricade guard house.

Code: 6607-8 **Classification:** Accepted

Names: 6607-8; 251-W Electrical Substation Septic System; 6607-08 **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1946

Status: Active **End Date:**

Description: The waste site is an underground septic tank and tile field.

Location: The 251-W Electrical Substation is located north of Rt 11A, south of 200 North Area. The septic system is south of the 251-W building.

Code: 6607-9 **Classification:** Accepted

Names: 6607-9; Project W-011H; Septic Tank 6607-9 Large On-Site Sewage System; 6607-09 Septic System **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Description: The site is a septic system and disposal field. The site is bordered with a steel post and chain barricade with signs posted "SEPTIC TANK AND DISPOSAL FIELD." There are five manholes and two concrete boxes with metal hatch covers visible at grade level at the site. There is also an electrical panel with a red warning light on top and a bell on the side.

Location: The site is located east of 200 West Area and immediately west of the perimeter fence that surrounds the Waste Sampling and Characterization Facility.

Related Sites/ Structures: Waste Sampling and Characterization Facility.

Waste Type: Sanitary Sewage

Waste Description: The site receives sanitary sewage from the Waste Sampling and Characterization Facility.

Code: 6607-10 **Classification:** Accepted
Names: 6607-10; Hanford Patrol Training Academy Septic System **Reclassification:** None
Type: Septic Tank **Start Date:**
Status: Inactive **End Date:**
Location: The septic tank and tile field are located west of 300 Area, north of Horn Rapids Rd.
Related Sites/ Structures: The septic system is associated with the Patrol Training building (662).

Code: 6607-13 **Classification:** Accepted
Names: 6607-13; Core Area Septic; Project FP-0003 Septic **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1993
Status: Active **End Date:**
Description: The waste site is an underground septic tank and drain field.
Location: The septic and drain field are located in a fenced area attached to the southwestern boundary of 200 East Area. It is southwest of the 2750E building. 6607-13 is north of 1st Street.

Code: 6607-16 **Classification:** Accepted
Names: 6607-16; ECN-C018H-040; Project C-018H; 6107-16 Septic System **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1994
Status: Active **End Date:**
Description: The site is visible in three separate locations. Two locations for the tanks and one for the sanitary tile field. All locations are surrounded with steel fence posts and chain. The sanitary tile field is posted with a sign "Sanitary Tile Field." The tanks are not posted as septic tanks however, all access covers are posted as confined spaces. The septic tank south of the 2025E building has two concrete boxes with metal hatch covers, four vertical culverts, and an electrical panel. The tank south of the 2025EA building has five vertical culverts. The sanitary tile field has several iron rods painted yellow with square orange tops and capped PVC pipes protruding vertically from the tile field.

Location: The site is located just northeast of the 200-E area within the Effluent Treatment Facility (ETF). The two septic tanks are located on the south side of the 2025E and 2025EA buildings. The sanitary tile field is located just north of the entrance road to the ETF.

Related Sites/ Structures: 2025E building and 2025EA building.

Waste Type: Sanitary Sewage
Waste Description: The septic system receives sanitary sewage from the 2025E and 2025EA buildings and is designed to receive 5000 gallons per day. The current daily flow is 2725 gallons per day.

Code: 6607-17 **Classification:** Accepted
Names: 6607-17; Conoco Service Station Septic System; **Reclassification:** None

6291 Service Station Building Septic System

Type: Septic Tank **Start Date:** 1/1/1995
Status: Active **End Date:**
Description: The waste site is an underground septic tank and drain field.
Location: The 6291 Service Station Building is located west of 200 East Area, near the intersection of Rt 4S and 4th Street. The septic system is located east of the 6291 building.
Process Description: The drain field has a 1365 liter (360 gallon) per day capacity.

Code: 6607-18 **Classification:** Accepted
Names: 6607-18; 609-G and MO292 Septic System **Reclassification:** None
Type: Septic Tank **Start Date:** 1/1/1997
Status: Active **End Date:**
Description: The waste site is an underground septic tank.
Location: The septic tank is located south of Route 3, near the 200 Area Fire Station complex. It is located north of the 609-G building.
Process Description: The new 5678 liter (1500 gallon) tank is tied to the 2607-EP septic system, located inside 200 East Area.

Related Sites/ Structures: The tank is associated with the 2607-EP septic system.

Code: 6607-19 **Classification:** Accepted
Names: 6607-19; Emergency Vehicle Operations Facility Mobile Office Septic **Reclassification:** None
Type: Septic Tank **Start Date:**
Status: Active **End Date:**
Description: The waste site is an underground septic system that services two mobile office units near the Emergency Vehicle Operations area.
Location: The septic system is located north of Horn Rapids Rd and west of Ila Lane. It is west of the Hazardous Material and Emergency Response (HAMMER) facility.

Code: 700-1 **Classification:** Accepted
Names: 700-1; 747 Building 90-Day Waste Accumulation Area **Reclassification:** Rejected (9/14/2000)
Type: Storage Pad (<90 day) **Start Date:**
Status: Inactive **End Date:** 1/1/1995
Description: There is no longer a 90 Day Storage Area at the 747 Building; the part of the 747 Building that held the 90 Day pad is no longer in use.
Location: The 747 Building is on the corner of Knight Street and Goethals Drive in Richland, west of the Federal Building. The pad was in the now-abandoned (unused) part of the building that is east

of the whole body count facility. However, the specific location of the 90 Day Storage Pad within the building is not known.

Process Description: This pad supported the HEHF Industrial Hygiene Laboratory in the 747 Building.

Related Sites/ Structures: The 747 Building is the whole body count facility operated by PNNL.

Code: 1100 HPADS	Classification: Accepted
Names: 1100 HPADS; 1100 Area Hanford Patrol Academy Demolition Site	Reclassification: Closed Out (9/6/1995)
Type: Depression/Pit (nonspecific)	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1995

Description: The site consisted of two demolition areas that were used by the Hanford Patrol to detonate discarded explosive chemical products generated on the Hanford Site. These products were either excess material or beyond their designated shelf life. The site was a treatment unit for nonradioactive explosive, ignitable, shock-sensitive, and/or reactive discarded chemical products. The discarded chemical products treated at the site all exhibited the dangerous waste characteristics of ignitability and reactivity. Some of the discarded chemical products also exhibited the dangerous waste characteristic of corrosivity and may have had the state-only designations for toxic extremely hazardous waste, toxic dangerous waste, persistent halogenated hydrocarbons, extremely hazardous waste, persistent polycyclic aromatic hydrocarbons, extremely hazardous waste, and/or carcinogenic dangerous waste. The treatment design capacity of the site was 568 liters (150 gallons) of discarded explosive chemical products per day. The last detonation event at the site took place on October 27, 1991.

Location: The site is located northwest of 1100 Area and west of 300 Area.

Waste Type: Chemicals

Waste Description: The unit was used for the treatment of shock-sensitive or potentially explosive chemical wastes. The following detonations took place: 1984: Ethyl Ether 169 g (0.37 lb), Perchloric Acid 44.3 kg (97.7 lb), Nitric Acid 1.42 kg (3.13 lb); 1985: 2,4,6-Trinitroresorcinol 25 g (0.06 lb), 2,4-Dinitroresorcinol 70 g (0.15 lb), 2,4-Dinitrophenol 500 g (1.10 lb), Alpha-Nitrosomethylisobutylketone 174 g (0.38 lb), Trinitrotoluene 100 g (0.22 lb), Tetrahydrofuran 36 kg (79.4 lb), Picryl Chloride 300 g (0.66 lb), Picric Acid 100 g (0.22 g), Perchloric Acid 4.4 kg (9.7 lb), Ethyl Ether 4.7 kg (10.4 lb), Hexadinitrophenylamine 70 g (0.15 lb), Glycol Dimethyl Ether 500 g (1.1 lb), Carbon Trichloride 600 g (1.3 lb), Carbon Disulfide 1,100 g (2.4 lb), Butyl Ethanol 9.5 kg (20.9 lb), Butyl Cellosolve 100 g (0.22 lb), Benzene with N-Butyl Lithium 100 g (0.22 lb); 1986: None; 1987: Ethyl Ether 20 kg (44.1 lb), Picric Acid 200 g (0.44 lb).

Code: 1100-9	Classification: Accepted
Names: 1100-9; 1164 Building 90-Day Waste Accumulation Area	Reclassification: Rejected (9/14/2000)
Type: Storage Pad (<90 day)	Start Date:
Status: Inactive	End Date: 1/1/1998

Description: The 90 Day Storage Area was inside the 1164 Building, a small (15 by 11 meters [48 by 36 feet]) steel structure surrounded by gravel and pavement. The Building is closed, and has transferred to the Port of Benton. However, the Port has not started to use it yet.

Location: The 1164 Building is northeast of the 1167A Excess Salvage Office Building. The 1164

Building is also marked as the 2453 Building. The exact location of the pad within the building is not known.

Process Description: The 90 Day Storage Area was used by the Investment Recovery group to process aerosol cans, which were used to identify sensitive equipment for central stores and investment recovery, along with rags, brushes, and other miscellaneous wastes.

Related Sites/ Structures: The pad held waste paint aerosol cans and associated equipment waste used at the Excess Salvage Yard.

Waste Type: Chemicals

Waste Description: The wastes stored here were materials (for example, rags and brushes) and paints left over from marking sensitive equipment.

Code: 1100-12

Classification: Accepted

Names: 1100-12; 1100-12 Dumping Areas

Reclassification: Rejected (5/9/2000)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is miscellaneous pre-Hanford debris consisting of old concrete, glass, and metal (e.g., camp stove, food cans, buckets, and wire). The decayed batteries previously reported were not seen on May 4, 2000. Two separate areas of debris were reported in 1996 and 1998, but only one is evident in 2000.

Location: The debris fields are located in the northern portion of the 1100 area and just south of the powerline road that runs east - west. They are east the of ATG facility and 500 meters west of Stevens Drive.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: Buckets and cans were observed at the site.

Waste Type: Batteries

Waste Description: Dry cell batteries were observed at the site in 1996. Vegetation surrounding the batteries was reported to be stressed in 1996, but no sign of the batteries was found in 2000.

Code: 1100-13

Classification: Not Accepted

Names: 1100-13; Gravel Pit #1; Pit 1

Reclassification: None

Type: Depression/Pit (nonspecific)

Start Date:

Status: Active

End Date:

Description: The site is a pit where sand was excavated to be used for bedding and backfill material. The northern perimeter is marked with post and chain.

Location: Pit #1 is located north of the 1100 Area, north of the 1171 Laydown Yard.

Related Sites/ Structures: UPR-1100-6 is located adjacent to Pit 1.

Code: 1100-14

Classification: Not Accepted

Names: 1100-14; Gravel Pit #2; Pit 2

Reclassification: None

Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1954
Status: Inactive **End Date:** 1/1/1985
Description: The pit was a source of gravel for backfill material. It also was used as a dumping site for miscellaneous debris, paint and solvents.
Location: The pit is located north of 1100 Area and north of the 1171 Laydown yard
Related Sites/ Structures: 1100-2 Paint/Solvent dump

Code: 1100-15 **Classification:** Not Accepted
Names: 1100-15; Gravel Pit #3; Pit 3 **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:** 1/1/1979
Status: Inactive **End Date:** 1/1/1985
Description: The site was used as a source of gravel for backfill material. It was also used as a disposal site for construction material (concrete rubble and roofing material. Occasionally antifreeze and degreaser solutions from the 1171 building were disposed into the pit
Location: The pit is located north of 1100 Area, north of the 1171 Laydown Yard, on the west side of the railroad tracks.
Related Sites/ Structures: The site was associated with 1100-3 Antifreeze, Degreaser Pit.

Code: 1100-18 **Classification:** Not Accepted
Names: 1100-18; Cistern and Possible Historic Disposal Site Identified During RCRA General Inspection 1100FY98 Item #3 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site appears to be a cistern. In the general area of the cistern is a homestead dump site. There appears to have been a well casing inside of the cistern. The casing is plugged approximately 1.5 meters (5 feet) below the ground surface. The cistern is in the middle of an old concrete pad and is lined with concrete (at least as much as is visible). The area between the sides of the cistern and the metal well casing is filled with large rocks and cobbles. Connected to this concrete pad, there appears to be another concrete-lined, rock-filled hole. The second hole is now very overgrown and is filled with large rocks and cobbles. It appears to have been rectangular and may have had a wooden cover. A snake was living under the remains of this wooden cover. North of the cistern are the remains of a wire mesh fence and an old household dump (cans primarily, some glass and ceramics). Further north, there is a smaller concrete structure. It is square and is now filled with dirt and vegetation. Overall, the site is mostly grass-covered, with some mature sagebrush and tumbleweeds. Debris is concentrated in the household dump, but there is some scattered debris across the site, including the metal frame of a coil mattress. The features mentioned thus far (with the exception of the small concrete structure) are south of an extensive ditch (irrigation?). Northeast of the cistern and north of the ditch, a cement pipe was found extending into the ditch. Just north of this feature, some of the cement pipe is exposed. This could be considered a physical hazard. Southeast of the cistern are the remains of an old foundation. The cellar presents a physical hazard. Adjacent to the foundation is a small, thin area of coal, level with the ground surface.
Location: The site is located approximately 274 meters (900 feet) west of Stevens Drive and 91 meters

Status: Inactive **End Date:** 1/1/1996

Description: The unit consisted of various laboratories in the 324, 325, and 331 Buildings. The processing equipment covered under this unit included lab, bench, pilot, and full-scale treatment equipment.

Location: The unit was located in various laboratories throughout the 324, 325 and 331 Buildings.

Process Description: Various technologies were used to treat radioactive mixed waste and hazardous waste via biological treatment research and development processes. These technologies treated radioactive mixed waste and hazardous waste constituents in soil, effluents, and groundwater through the use of microorganisms (naturally present or organisms that were environmentally enhanced) to treat various chemical constituents, such as organics, nitrates, chromium, and cyanide. Biological treatment processes were capable of treating up to a maximum of 151, 400 liters (40,000 gallons).

Related Sites/ Structures: Structures related to these treatment facilities included the 300 Area Process Sewer, similar laboratories in the other buildings, and the remaining laboratories in each building.

Waste Type: Chemicals

Waste Description: Wastes treated by the unit included listed waste, waste from non-specific sources, characteristic wastes, and state-only wastes.

Code: GTF **Classification:** Accepted

Names: GTF; Grout Treatment Facility **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1986

Status: Inactive **End Date:** 1/1/1991

Description: The facility included the Transportable Grout Equipment and an underground feed pipeline from the 241-AP-102 tank. The fenced area previously known as the Grout Treatment Facility has been transitioned to the construction contractor that will build the new Waste Treatment Facility (vitrification plant). The head end of the 216-A-29 ditch was located within this fenced area. The ditch has been backfilled and stabilized.

Location: The Grout Treatment Facility was located east of the 241-AP Tank Farm, east of the 200 East Area. It is west of the Grout Treatment Facility Landfill area.

Process Description: The Grout Treatment Facility was put on long term standby and the project was later cancelled. The feed transfer system was disconnected from the 241-AP-102 Tank. The High Efficiency Particulate Air filters were removed from the Liquid Collection Tank/Mixer Module (Transportable Grout Equipment) ventilation system. This reduced the level of contamination in the facility. A failed mixer pump in Tank 241-AP-102 was removed in 1995. The Grout Treatment Facility was to be used as an emergency option in the event that tank space is not available to resolve tank safety issues. During operations, the waste was stored in Tank 241-AP-104 and pumped to the Grout Feed Tank 241-AP-102. The dry materials (from the Dry Materials Receiving and Handling Facility) were trucked to the Transportable Grout Equipment. The Transportable Grout Equipment mixed the dry blend with liquid additives and aqueous waste to form a cementitious slurry. The slurry was pumped to a below grade vault located in the Grout Treatment Facility Landfill, where it hardened. Excess water from the vaults and flush solutions from the Transportable Grout Equipment were pumped to feed Tank 241-AP-102 or other tanks in the tank farms.

Related Sites/ Structures: The Grout Treatment Facility was associated with the Dry Materials Receiving and Handling Facility, the AP-Tank Farm and the Grout Treatment Facility Landfill (Near Surface Disposal Facility).

Waste Type: Process Effluent
Waste Description: The liquid waste at this facility had low concentrations of radioactive and other hazardous materials. The facility had the capacity to treat 101,000 gallons (382,285 liters) per day.

Code: GTFL **Classification:** Accepted

Names: GTFL; PSW Vault; 218-E-16; Grout Treatment Facility Landfill; GTF Vaults **Reclassification:** None

Type: Burial Ground **Start Date:** 1/1/1986

Status: Inactive **End Date:** 1/1/1991

Description: The Grout Treatment Facility Landfill had been located within a fenced area, now designated for construction of the Waste Treatment Plant (vitrification plant). Access is currently controlled by the construction contractor. Five underground vaults were constructed of reinforced concrete with cover blocks to support the Grout Treatment facility. The vault floors are sloped toward a leachate collection trench. The site consists of five rectangular vaults known as 101, 102, 103, 104, and 105.

Location: The Grout Treatment Facility Landfill is located east of the 200 East Area fence. It was located inside the fence that currently surrounds the Waste Treatment Facility construction site. The landfill is east of the area formerly known as the Grout Treatment Facility. The vaults are located in the western portion of the Grout Treatment Facility Landfill.

Process Description: The vaults at the Grout Treatment Facility Landfill received liquid grout slurry from the Transportable Grout Equipment. The liquid feed contained low activity (8.4E-5 curies per liter) phosphate-sulfate waste. The grout slurry hardened in the vaults; at which time, the excess liquid was pumped back to the feed tank (241-AP-102 or another tank at the tank farms). After the excess water was removed, the void space between the grout surface and vault roof was filled with nonradioactive grout.

Related Sites/ Structures: The vaults are associated with the Grout Treatment Facility.

Waste Type: Process Effluent

Waste Description: As of 1992, the Grout Treatment Facility Landfill Vaults had a total capacity of approximately 185 acre feet (228,200 cubic meters). The waste feed had low concentrations of radionuclides and hazardous materials.

Code: HWVP **Classification:** Accepted

Names: HWVP; Hanford Waste Vitrification Plant (Original Proposed Site) **Reclassification:** Closed Out (11/3/1999)

Type: Process Unit/Plant **Start Date:**

Status: Inactive **End Date:**

Description: This WIDS site is the original facility designed to be a test treatment/support facility. The proposed Vitrification facility was never built. The 2704 HV office building, 2101 HV and the Canister Storage building were constructed. They have supported different projects.

Location: The proposed Vitrification facility was to be located west of the 200 East Area perimeter fence, between Route 4 North and Akron Ave. This facility was never constructed.

Process Description: The Canister Storage building was built to support HWVP but never used for that purpose. It has been used to store material from the 100-K Basins project.

Waste Type: Chemicals
Waste Description: The site was designed to treat 8,000 gallons (30,000 liters) per day of waste, producing 220 pounds (100 kilograms) of glass per hour.

Code: PCTTF **Classification:** Accepted
Names: PCTTF; Physical and Chemical Treatment Test Facilities **Reclassification:** Closed Out (5/13/1996)
Type: Laboratory **Start Date:** 1/1/1979
Status: Inactive **End Date:** 1/1/1995

Description: The unit consisted of the use of the 324 Building Biological Treatment Test Facilities, the 324 Building Radiochemical Hot-Cell Complex, and the 325 Building Shielded Analytical Laboratory to test treatment technologies for radioactive mixed waste and hazardous waste. The processing equipment covered under this unit included lab and bench-scale treatment equipment.

Location: The unit was located in various laboratories in the 324 and 325 Buildings.

Process Description: Treatment processes are usually small, bench-scale operations. The processes included pH adjustment, ion exchange for selective removal of contaminants from waste solution, waste concentration by evaporation, waste dissolution such as waste retrieval from storage tanks by pH adjustment or fusion, precipitation/filtration and solvent extraction from solutions, slurries, and sludges, solids washing for separation of contaminants from sludges, catalytic destruction methods, e.g., electrolytic generation of oxidants such as silver, cerium, and other electrochemically enhanced processes for decontaminating metals and oxidizing non-metals, and grouting. Most treatment processes were small, bench-scale operations.

Related Sites/Structures: Structures related to these treatment facilities included the 300 Area Process Sewer, and laboratories in the 324 and 325 Buildings.

Waste Type: Chemicals
Waste Description: Waste treated by various processes included listed wastes, wastes from non-specific sources, characteristic wastes, and state-only wastes. Petroleum refining wastes were also included. The processes used in this unit included pH adjustment, ion exchange processes, waste concentration, precipitation/filtering, solids washing, catalytic destruction, and grouting.

Code: RMWSF **Classification:** Accepted
Names: RMWSF; 2401W, 2402W, 2402WB, 2402WC, 2402WD, 2402WE, 2402WF, 2402WG, 2402WH, 2402WI, 2402WJ, 2402WK, 2402WL, 2403WA, 2403WB, 2403WC, 2403WD, 2404WA, 2404WB, 2404WC; Hanford Central Waste Complex; Radioactive Mixed Waste Storage Facility **Reclassification:** None
Type: Storage **Start Date:** 1/1/1988
Status: Active **End Date:**

Description: The Radioactive Mixed Waste Storage Facility consists of the 2401-W Storage Building, 23 low-flash-point mixed waste storage modules, the twelve 2402-W series storage buildings, a mixed waste storage pad, the 2403-W mixed waste storage buildings, and the waste receiving and staging area. The 2401-W, 2402-W, and 2403-W Storage Buildings are preengineered steel structures.

Location: The unit is located west of Dayton Avenue, north of Nineteenth Street and south of the proposed Twenty Second Street.

Process Description: The unit provides safe storage for mixed waste until burial in disposal units at the Hanford Site, or shipment to a Transuranic Waste Disposal Site.

Related Sites/ Structures: Structures associated with the buildings in the Radioactive Mixed Waste Storage Facility include the Waste Receiving and Packaging Facility, and the other facilities that make up the Central Waste Complex.

Waste Type: Barrels/Drums/Buckets/Cans
Waste Description: The unit receives and stores designated mixed waste.

Code: SHLWSTS **Classification:** Accepted

Names: SHLWSTS; Simulated High-Level Waste Slurry Treatment/Storage **Reclassification:** Closed Out (9/6/1995)

Type: Process Unit/Plant **Start Date:** 1/1/1987

Status: Inactive **End Date:** 1/1/1995

Description: The site has been cleaned and turned over to the Port of Benton. This site was three roped off areas within the fenced-in 1234 Storage Yard. The site consisted of a treatment area, a storage area, and a less than 90 day accumulation area.

Location: This site is located within the 1234 Storage Yard which is southwest of the intersection of Stone Street and "W" Avenue.

Process Description: This site was used to store containerized simulated high-level waste slurry. The slurry was treated at this site in a grout/stabilization process. The slurry treatment program was initiated on September 13, 1988 and ended on October 28, 1988. The treatment process consisted of neutralization and mixing with grout within lined 55-gallon containers. The treatment eliminated the characteristics of ignitability, corrosivity and EP Toxicity. The grouted slurry was stored in drums at the site of treatment until tests (EP Toxicity, Acute Fish and Rat Toxicity) were completed. These tests verified that the treated waste exhibited no dangerous waste characteristics.

Related Sites/ Structures: The associated structure is the 1234 Storage Yard.

Waste Type: Chemicals
Waste Description: The slurry was dangerous waste containing toxic constituents and dissolved metals. The treated slurry was managed as non-radioactive solid waste.

Waste Type: Chemicals
Waste Description: The 90-day pad stored waste from various Battelle research activities including the slurry treatment wastes.

Code: TFS OF 218-E-4 **Classification:** Accepted

Names: TFS OF 218-E-4; Tile Field South of 218-E-4; 2607-E3 Tile Field **Reclassification:** Consolidated (4/12/2004)

Type: Drain/Tile Field **Start Date:** 1/1/1944

Status: Inactive **End Date:** 1/1/1997

Description: The tile field south of 218-E Burial Ground is comprised of vitrified clay pipe and drain tile. The laterals of the tile field are open jointed and are spaced 7.9 feet (2.4 meters) apart.

Location: This tile field is located southwest of the 218-E-4 Burial Ground and north of the 2607-E3 Septic Tank.

Process Description: The tile field was designed to percolate wastewater into the ground without exposing it to the open air. The 2607-E3 Septic Tank was abandoned in place in 1997.

Related Sites/ Structures: This tile field is associated with the 2607-E3 Septic Tank and received sanitary wastewater and sewage from B-Plant Facilities.

Waste Type: Sanitary Sewage

Waste Description: The 2607-E3 Septic Tank has received approximately 5.45 cubic meters (3,800 gallons) of sanitary wastewater and sewage per day from the B Plant Aggregate Area Facilities. The waste is discharged to the tile field located north of the 2706-E3 and South of the 218-E-4 Burial Ground.

The Site Was Consolidated With:

Code: 2607-E3
Names: 2607-E3; 2607-E3 Septic System; 2607-E3 Septic Tank and Drainfield; TFS of 218-E-4; Tile Field South of 218-E-4

Code: TRUSAF **Classification:** Accepted

Names: TRUSAF; 224-T TRUSAF; Transuranic Assay Facility **Reclassification:** None

Type: Storage **Start Date:** 1/1/1985

Status: Inactive **End Date:** 1/1/1997

Description: The building is a RCRA compliant storage unit occupying 2/3 of the 224-T building and adjacent outdoor areas. One third of the building (224-T Canyon) was sealed off in 1975. The storage capacity is 2,000 (55-gallon) drums (110,000 gallons). Access to the building is restricted with a locked, chain link fence.

Location: This is a three story concrete building located southeast of 221-T and south of 222-T.

Process Description: The building was originally constructed in 1943 as part of the T Plant bismuth-phosphate fuel processing complex. From 1944 to 1956 it functioned as the Plutonium Concentration Facility. Six radiologically contaminated process cells are located in the eastern 1/3 of the building. The cells were sealed off from the rest of the building in 1975. The amount of radiological or regulated material remaining within the process cells is unknown. This section of the building is documented in WIDS Sitecode 224-T. The TRUSAF process included the exterior inspection of waste drums, neutron assay of waste containers to determine the isotope content and an X-ray examination of the waste containers to confirm the absence of prohibited contents (e.g. free liquids). After examination the containers were stored on the second and third floors, in rows (following a pattern marked on the floor) or in storage modules. All TRUSAF waste was removed from the 224-T building in August 1997. The building is on standby. No operations are currently taking place in 224-T except for routine building surveillance.

Related Sites/ Structures: The TRUSAF activities are associated with waste management operations.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: hazardous waste that may be allowed into this facility could be any of the listed or characteristic wastes as defined by RCRA and Washington Administrative Code 173-303. The waste was generated by DOE processing facilities and will eventually be shipped to the WIPP in New Mexico for disposal. Prior to placing the building on standby, all of the waste was removed from 224-T.

Code: TTF
Classification: Accepted
Names: TTF; Thermal Treatment Test Facilities
Reclassification: Closed Out (5/13/1996)
Type: Laboratory
Start Date: 1/1/1978
Status: Inactive
End Date: 1/1/1996

Description: The unit consists of various laboratories in the 324 and 325 Buildings and the in-situ vitrification (ISV) unit which is a transportable treatment unit. The processing equipment covered under this unit included bench, engineering, pilot, and full-scale treatment equipment.

Location: The unit was located in various labs throughout the 324 and 325 Buildings. The in-situ unit is transportable across the Hanford Site.

Process Description: These units treated mixed and hazardous waste with in-situ vitrification or waste vitrification treatment processes. Equipment and processes used to treat the waste included bench, pilot, engineering, and full-scale treatment equipment. ISV was a thermal treatment process that converted contaminated soils and sludges into a glass and crystalline product. An electrical current was passed among an array of four electrodes imbedded in the contaminated soil or sludge, melting and glassifying it. The process continued outward and downward until the appropriate vitrification depth was obtained. Radioactive mixed waste and dangerous waste constituents were stabilized in the glass and crystalline product. Organic contaminants were destroyed by pyrolysis, and the pyrolysis products oxidized as they migrated to the surface. PNL operated four treatability testing units (bench, engineering, pilot, and large-scale). The engineering and bench-scale units were located in the 324 Building in the 300 Area. The pilot and large-scale units were transportable within the Hanford Site. The pilot and large-scale units were transportable within the Hanford Site. The design capacity of the units varied from 18.9 liters (5 gallons) per day (bench-scale) to 64345 liters (17,000 gallons) per day (large-scale). Waste vitrification prototype equipment was located in the 324 Building. Treatability studies were performed using simulated and actual radioactive mixed waste samples. Radioactive mixed waste was mixed with glass-forming materials and vitrified into a highly durable glass for disposal. The design capacity ranged from 5.7 liters (1.5 gallons) per day (bench-scale) to 113.6 liters (30 gallons) per day (pilot-scale). In some treatability studies with ISV, vitrified soil was left in place for additional study before either being removed or designated as nonhazardous. Other thermal treatment processes covered by this permit included plasma arc pyrolysis, in situ heating of soils and sludges for removal of organics, metal melting for volume reduction and immobilization of contaminated metals, gamma induced oxidation of organic chemicals, thermal treatment for the drying and decomposition of liquid slurries, in can melting of soil wastes and liquid slurries, and microwave heating to dry and immobilize liquid and solid wastes.

Related Sites/Structures: Structures related to these treatment facilities included the 300 Area Process Sewer, engineering development laboratory (EDL), EDL high bay and hot cell complex of the 324 Building. Additionally, the in-situ treatment unit had ancillary structures providing power, filtration and control. The 116-B-6A Crib was used for testing as were other laboratories located in the 324, 325 and 331 Buildings.

Waste Type: Chemicals
Waste Description: Wastes treated by these processes included listed wastes, wastes from non-specific sources, characteristic wastes, and state-only wastes. In-situ vitrification is a thermal process that

converts contaminated soil and sludges into a glass and crystalline product. Non-volatilized contaminants are immobilized in the glass and crystalline product. Volatilized contaminants are recovered in a filtration system. Other vitrification processes explored in these units included plasma arc pyrolysis, melters, and gamma-induced oxidation.

Code:	UPR-100-N-15	Classification:	Accepted
Names:	UPR-100-N-15; 108-N Neutralization Sump Spill; Acid Spill at 108-N; UN-100-N-15; UN-116-N-15	Reclassification:	Rejected (9/11/2000)
Type:	Unplanned Release	Start Date:	1/1/1981
Status:	Inactive	End Date:	1/1/1981
Description:	The release site is concrete structures and a graveled field. There is no evidence of the spill at the site.		
Location:	The release occurred at the 108-N Sump. The volume of contaminated soil was less than 1.4 cubic meters (50 cubic feet).		
Release Description:	<p>On March 20, 1981, during the 8-4 shift, while sulfuric acid was being transferred from the 108-N storage tanks to the 163-N day tanks, a leak developed in a connection in the discharge line from the acid transfer pumps. The operator noticed the leak spraying across the interior of the 108-N building, but knowing the piping of the 108-N building to be prone to leaks over the past several years, he continued to fill the 163-N day tanks (10-15 minutes) until the desired level was reached in accordance with procedure. After the tanks were filled, the operator shut the system down and notified his supervisor of the problems. The pressure in the leaking line during the transfer operation resulted in spraying a large portion of the interior of the 108-N building with highly corrosive sulfuric acid. The operator wore adequate protective clothing and received no injuries. The building interior sustained considerable acid damage. After supervision was notified, cleanup of the 108-N building began. The interior of the building was hosed down with water and drained to the 108-N neutralizing sump. When this sump became filled to capacity, it became necessary to transfer the neutralized mixture to another neutralizing pit. During this transfer a "water leak" was observed coming from the ground outside of the 108-N building. Following pH tests, the leak was traced to the discharge line from the 108-N neutralizing sump. During the transfer of the liquid, the outside of the 108-N building became flooded and was roped off. The Environmental Control Subsection was notified of the spill; and upon their recommendation, the surface leakage was neutralized with soda ash. No further actions were deemed necessary at that time. On March 23, 1981, during the 8-4 shift, Rockwell cement finishers reported to an N Plant Maintenance Analyst requesting permission to enter the 108-N building to clean the area around the base of the two acid transfer pumps to prepare the base for a new surfacing. Since no "hands on maintenance of any equipment" was required, the N Plant Maintenance Analyst saw no need for the preparation of a formal work authorization form. The Maintenance Analyst left the cement finishers at the job site and returned to his office. The cement finishers dressed in protective clothing and went about their assigned task. While scraping the surface of loose debris, the Rockwell cement finishers struck and broke off a small drain pipe coming off the suction header of the acid transfer pumps. Residual acid from the previously isolated line sprayed out on the interior of the 108-N building. Both cement finishers, dressed in appropriate protective clothing, were uninjured. Subsequent cleanup operations similar to those performed on 3/20/1981, again forced the usage of the transfer line from the 108-N neutralizing sump. The Environmental Control Subsection was notified prior to the transfer. They advised similar precautions be taken as those on 3/20/1981. Residual liquid on the ground outside of the 108-N was neutralized with soda ash.</p>		
Related Sites/ Structures:	This release is associated with the 108-N Chemical Unloading Facility.		

Waste Type: Chemicals
Waste The release consisted of sulfuric acid.
Description:

Code: UPR-100-N-33 **Classification:** Accepted
Names: UPR-100-N-33; 108-N Acid Transfer Spill; UN-100-N-33; UN-116-N-33 **Reclassification:** Rejected (9/11/2000)
Type: Unplanned Release **Start Date:** 1/1/1981
Status: Inactive **End Date:** 1/1/1981

Description: The location of this release is a graveled lot at the 108-N Chemical Unloading Facility (CUF). There is no evidence of the spill at the site.

Location: The release occurred near the sodium hydroxide storage tank at the 108-N Facility.

Release Description: Approximately 3,800 liters (1,000 gallons) of 97% sulfuric acid was spilled during an acid transfer from a rail car to the sulfuric acid storage tank at 108-N. The release occurred on November 9, 1981.

Related Sites/ Structures: This release is related to the 108-N CUF.

Waste Type: Chemicals
Waste The spill consisted of a solution containing 97% sulfuric acid.
Description:

Code: UPR-100-N-34 **Classification:** Accepted
Names: UPR-100-N-34; 108-N Tank Transfer; Sulfuric Acid Line Break; UN-100-N-34 **Reclassification:** Rejected (9/11/2000)
Type: Unplanned Release **Start Date:** 1/1/1980
Status: Inactive **End Date:** 1/1/1980

Description: The release occurred in a concrete trench in a graveled lot. There is no evidence of the spill at the site.

Location: The release occurred at the southwest corner of the 120-N-5, 108-N/163-N Transfer Line And Neutralization Pit.

Release Description: Washington Public Power Supply System (WPPSS) supervision called the 105-N Control Room and reported a large cloud of steam in the vicinity of the WPPSS trestle. An investigation revealed liquid spurting several feet into the air from a sulfuric acid and sodium hydroxide line encasement at the encasement sump. The weekly sulfuric acid transfer from 108-N to 163-N was in process. It was subsequently determined that the sulfuric acid had been transferred from the storage tank at 108-N, and none had been received at the 163-N Storage Tank. Approximately 12,870 liters (3,400 gallons) of 94% sulfuric acid was released to the ground. Contamination was limited to the region near the sulfuric acid transfer line in the vicinity of the sump. The release occurred on May 12, 1980. (While the CMS reports a spill of 3,800 liters (1,000 gallons), historical records [e.g., Stenner et al. 1988] lists a release of 12,870 liters (3,400 gallons).

Waste Type: Chemicals
Waste The release was a solution containing 94% sulfuric acid.
Description:

Code:	UPR-100-N-38	Classification:	Accepted
Names:	UPR-100-N-38; 100-N Spring 1983 Caustic; 116-N-2 Facility Liquid Unplanned Release; Truck Spill 116-N-2	Reclassification:	Rejected (9/11/2000)
Type:	Unplanned Release	Start Date:	1/1/1983
Status:	Inactive	End Date:	1/1/1983
Description:	The site is level and graveled. A pipe is present that carried sodium hydroxide from the tankers to the 1310-N Facility (116-N-2). The site is located in a radiation zone, but the sodium hydroxide should not have been radioactively contaminated. The 116-N-2 Facility complex consists of piping, pumps, a transfer tank (commonly referred to as the silo) and a large, spherical storage tank (commonly referred to as the golf ball). The site was used as a collection tank for N Reactor primary piping decontamination wastes. The 3.4E+06-liter (9.0E+05-gallon) spherical tank is partially buried in the ground. A compacted soil radiation barrier, 7.6 meters (25 feet) high, borders the tank on three sides.		
Location:	The spill occurred in the 100-N Area, west northwest of 1310-N.		
Release Description:	In Spring 1983, a tanker truck was offloading caustic sodium hydroxide to the silo (transfer tank) at 1310-N when a fitting came loose, spilling 380 liters (100 gallons) of sodium hydroxide to the soil.		
Process Description:	The sodium hydroxide was used to neutralize the radioactively contaminated and hazardous decontamination solution pumped from the N Reactor to the 116-N-2 (1310-N Facility).		
Related Sites/Structures:	The 116-N-2 (1310-N Chemical Waste Treatment and Storage Facility) is associated with the site.		
Waste Type:	Chemicals		
Waste Description:	Three hundred eighty liters, (100 gallons) of sodium hydroxide was spilled to the ground during offloading operations in a radiation zone.		

Code:	UPR-100-N-40	Classification:	Not Accepted
Names:	UPR-100-N-40; 6/14/86 163-N Cation/Anion Regeneration Waste Spill; Regeneration Waste Transport System Liquid UPR 1 (06/14/86 Cleaned Up); UN-116-N-27	Reclassification:	None
Type:	Unplanned Release	Start Date:	1/1/1986
Status:	Inactive	End Date:	
Description:	The surface of the area is graveled.		
Location:	The exact location of the leak is unknown, however, it occurred in the section of line that goes southeast from the southeast corner of 183-N.		
Release Description:	On June 14, 1986, a leak was detected in the waste transport pipe while wastes from the anion and cation regeneration process were being routed to 120-N-2 Surface Impoundment. Once the leak was discovered, regeneration processes were shut down. A sample was collected at the point of leak and found to have a pH of 1.4. It was estimated that 25,000 liters (6,500 gallons) of acidic regeneration waste had leaked to the ground and formed a pond in an area south and east of the 163-N/183-N Buildings. Caustic regeneration waste was pumped through the line		

and allowed to leak into the acidic pond to neutralize the spilled material. Several hours elapsed until the pH of the spilled material reached 6.9.

Waste Type: Process Effluent

Waste Description: The 120-N-1 and 120-N-2 disposal sites received waste from the 163N Plant, the same waste that was involved in these unplanned releases. The liquid released was regeneration waste from ion exchange columns in the 163-N Facility, consisting of sulfuric acid and sodium hydroxide.

Code: UPR-100-N-41

Classification: Not Accepted

Names: UPR-100-N-41; Waste Spill; 163-N
Regeneration; Regeneration Waste Transport
System Liquid UPR 2

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1986

Status: Inactive

End Date:

Description: The spill occurred at the 163-N Regeneration Waste Sump near the northwest corner of the 163-N Building and formed a small pond in this area.

Location: The site is a graveled area northeast of the 163-N Building.

Release Description: A spill of acidic wastewater (pH 1.1) from the 163-N Demineralized Water Treatment Plant occurred on June 30, 1986. The spill happened when a temporary 15-centimeter (6-inch) hose became dislodged for approximately 4 minutes during a discharge cycle, spilling approximately 3,800 liters (1000 gallons) of the liquid. The corrective action was to add 82 kilograms (180 pounds) of soda ash to the spill to neutralize the acid. Subsequent pH of the spill was 10.1 standard units. No cleanup action is mentioned in the occurrence report.

Waste Type: Water

Waste Description: The liquid released was regeneration waste consisting of sulfuric acid from ion exchange columns in the 163-H Facility. Soda ash was added to the spill to help neutralize the liquid.

Code: UPR-200-E-4

Classification: Accepted

Names: UPR-200-E-4; 241-B-151 Diversion Box
Contamination Spread; UN-200-E-4

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1951

Status: Inactive

End Date: 1/1/1952

Description: The site is not separately marked or posted.

Location: The release occurred in an area surrounding the 241-B-151 Diversion Box, inside the 241-B Tank Farm fence.

Release Description: The area around the 241-B-151 Diversion Box was contaminated as a result of work activities in the diversion box in the fall of 1951 and again in the summer of 1952.

Related Sites/ Structures: The release is associated with the 241-B-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: The release involved approximately 10 curies of fission products from the 241-B-151 Diversion Box.

The Site Was Consolidated With:

Code: 200-E-120
Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-5 **Classification:** Accepted
Names: UPR-200-E-5; 241-BX-102 Tank Overflow; UN-200-E-5 **Reclassification:** Consolidated (6/13/2002)
Type: Unplanned Release **Start Date:** 1/1/1951
Status: Inactive **End Date:**

Description: The fence of the 241-BX Tank Farm is marked with appropriate radiological warning signs. The release site is not separately marked or posted.

Location: The release occurred inside the 241-BX Tank Farm, around the 241-BX-102 Tank.

Release Description: On March 20, 1951, a cascade outlet became plugged, contaminating the soil near the 241-BX-102 Tank. Approximately 348,000 liters (91,600 gallons) of metal waste was released.

Process Description: In 1951, this tank was receiving the "metal waste" stream from the Bismuth Phosphate plutonium separation process at B Plant. The metal waste stream was the first waste stream discharged after the fuel rod dissolution. It was a large volume waste stream that contained high concentrations of uranium and 90 percent of the radionuclides originally present in the irradiated fuel rods.

Waste Type: Process Effluent
Waste Description: The waste stream involved with this release was the Bismuth Phosphate process metal waste stream. It typically contained approximately 0.5 pound of uranium per gallon of liquid waste. The waste released contained approximately 20.4 metric tons (22.5 tons) of depleted uranium.

The Site Was Consolidated With:

Code: 200-E-132
Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-6 **Classification:** Accepted
Names: UPR-200-E-6; Contamination Around the 241-B-153 Diversion Box; UN-200-E-6 **Reclassification:** Consolidated (6/13/2002)
Type: Unplanned Release **Start Date:** 1/1/1954
Status: Inactive **End Date:** 1/1/1954

Description: The site is not separately marked or posted.

Location: The release occurred in the area around the 241-B-153 Diversion Box, inside the 241-B Tank Farm fence. The diversion box is in the southwest corner of the 241-B Tank Farm.

Release Description: The contamination spread was the result of work being done in the 241-B-153 Diversion Box during 1954 and 1955. In 1954, an area measuring approximately 30.5 meters by 15.25 meters (100 by 50 feet) surrounding the diversion box was marked as a radiation zone.

Waste Type: Process Effluent
Waste Description: Contamination spread from the 241-B-154 Diversion Box. Contaminated specks surrounded the work area. The release contained approximately 1 curie of fission products.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-13

Classification: Accepted

Names: UPR-200-E-13; UPR-200-E-15; Overflow from 216-A-4; UN-200-E-13

Reclassification: Consolidated (1/25/2000)

Type: Unplanned Release

Start Date: 1/1/1958

Status: Inactive

End Date:

Description: WIDS site UPR-200-E-13 has been reclassified based on documentation that verified it was a DUPLICATE of UPR-200-E-15. Future updates and closeout information will only be added to UPR-200-E-15. This site will no longer be updated. The unplanned release contaminated both the soil and blacktop areas between the 291-A Turbine House and the 216-A-4 Crib. The release site was not separately marked or posted.

Location: The release occurred south of PUREX, between the 216-A-4 Crib and the 291-A Turbine House.

Release Description: In December 1958, the 216-A-4 Crib became plugged during the jetting of the 216-A-2 Catch Tank which resulted in contaminated material backing into the 291-A Turbine House through the floor drains. The floor was contaminated to 20 rads/hour at 25.4 centimeters (10 inches). In addition, an area of ground and blacktop outside the turbine house was contaminated up to 8 rads/hour.

Related Sites/ Structures: The release was associated with 200-E-102, 200-E-103, 216-A-4, 216-A-2 and the 291-A Turbine House.

Waste Type: Process Effluent

Waste Description: The 216-A-4 crib plugged during the jetting of the 216-A-2 catch tank. Contaminated liquid backed up into the 291-A Turbine House floor drains. The floor of the Turbine House was contaminated to 20 rads/hour at 25.4 centimeters (10 inches). The liquid effected an area of ground and blacktop outside the turbine house that was contaminated with beta/gamma levels up to 8 rads/hour.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-14

Classification: Accepted (Proposed)

Names: UPR-200-E-14; 216-B-3 Pond Dike Break; UN-200-E-14

Reclassification: Consolidated (1/19/2000)

Type: Unplanned Release

Start Date: 1/1/1958

Status: Inactive

End Date: 1/1/1958

Description: The site is an unplanned release that occurred as a result of a dike break in 216-B-3 Pond. In 1983, the 216-B-3A Pond lobe was built over the top of this release site. There is no visible evidence of this release. It is not physically marked or posted. There is a large percolation trench in the center of the 216-B-3A pond that is posted as a Soil Contamination Area. However, the percolation trench was dug in 1984 and this Unplanned Release occurred in 1958. This site has been consolidated with 216-B-3B RAD

Location: The release site was located east of the 200 East Area perimeter fence. The release occurred on the east side of the 216-B-3 Main Pond.

Release Description: A break in the dike at 216-B-3 Pond in 1958 caused ground contamination in a ravine east of the pond. The "A" lobe of 216-B-3 Pond was built in 1983, over the top of the area where this release occurred. The release site was probably removed when the pond lobe was dug out.

Related Sites/ Structures: The release is associated with 216-B-3 Pond and 216-B-3A lobe.

Waste Type: Water

Waste Description: A dike break had the potential to carry material from any of the sources listed here. Waste streams flowed from the 216-A-29 and 216-B-3-3 Ditches into the 216-B-3 Pond. Discharges to 216-B-3 via 216-B-3-3 included: 221-B Building steam condensate and process cooling water; 284-E Powerhouse water; 244-CR Vault cooling water; 244-AR Vault and 242-A Evaporator cooling water; 202-A process cooling water, condenser cooling water, and air sampler vacuum pumps seal cooling water; 241-BY Tank Farm condenser cooling water; and Waste Encapsulation Storage Facility cooling water. Discharges to 216-B-3 via 216-A-29 included 202-A chemical sewer and acid fractionator condensate. The main pond received corrosive and toxic dangerous waste from two primary sources: the regeneration of the Plutonium Uranium Extraction (PUREX) plant demineralizer columns and from spills of dangerous or mixed waste from PUREX. The spills included hydrazine, cadmium nitrate, and ammonium fluoride/ ammonium nitrate. The backwash from the regeneration of the demineralizer columns included nitric acid, sulphuric acid, sodium hydroxide, and potassium hydroxide.

The Site Was Consolidated With:

Code: 216-B-3A RAD

Names: 216-B-3A RAD; West Expansion Lobe; 216-B-3 1st Overflow Pond; 216-B-3A Expansion Lobe Residual Radioactive Waste

Code: UPR-200-E-15

Classification: Accepted

Names: UPR-200-E-15; Overflow at 216-A-4; UN-200-E-15; UPR-200-E-13

Reclassification: Consolidated (1/25/2000)

Type: Unplanned Release

Start Date: 1/1/1958

Status: Inactive

End Date:

Description: WIDS site UPR-200-E-15 has been consolidated into site 200-E-103, because it was located within this larger "Underground Radioactive Material" area. Future updates and closeout information will only be added to 200-E-103. This site will no longer be updated. The release was a liquid unplanned release that contaminated the soil and blacktop areas between the 291-A Turbine House and the 216-A-4 Crib. Documentation states that the contaminated soil was removed and taken to a trench (WIDS Site 200-E-102) located south of 216-A-4 crib. Contamination could have remained on the blacktop area. This unplanned release is not separately marked or posted.

Location: The release site is located within the PUREX exclusion area, south of the 202-A Building between 291-A Turbine House and 216-A-4. The exact location of the contaminated blacktop is unknown.

Release Description: The monthly report (HW-58711) for December 1958 states the 216-A-4 Crib became plugged during the jetting of the 216-A-2 Catch Tank, causing a backflow of contaminated liquid into the 291-A Turbine House floor drains. The floor of 291-A was contaminated to 20 rad/hour at 25 centimeters (10 inches). The blacktop outside the building was contaminated to 8 rad/hour.

HW-60807 states that the soil was contaminated at surface and that the soil was removed to a trench along the south boundary of 216-A-4.

Related Sites/ Structures: The site is associated with 200-E-102, 200-E-103, the 216-A-4 crib and the 291-A Turbine House.

Waste Type: Process Effluent

Waste Description: The 216-A-4 crib plugged during the jetting of contaminated liquid from the 216-A-2 Catch Tank. When the 216-A-4 crib plugged, the floor drains in the 291-A Turbine House backed up, contaminating the floor with dose rates up to 20 rads/hour at 25.4 centimeters (10 inches). The liquid then flowed out of the turbine house and contaminated surrounding blacktop and soil. Beta/gamma readings on the blacktop and soil read up to 8 rad/hour were measured immediately following the incident.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-16

Classification: Accepted

Names: UPR-200-E-16; 241-C Overground Transfer Line Leak; UN-200-E-16

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1959

Status: Inactive

End Date:

Description: Neither the spill or the associated pipe, buried at the conclusion of the transfer, are marked or posted within the Tank Farm.

Location: The release occurred northeast of the 105-C Tank Pit, inside the 241-C Tank Farm.

Release Description: A leak in the overground coating waste transfer line at 241-C tank farm resulted in contamination of the ground to 1.5 rad per hour at a distance of 4.5 meters (15 feet). The line was replaced with a maximum exposure of 4 rad per hour. The release consisted about 50 gallons. It occurred during the transfer of PUREX coating removal waste from tank 241-C-105 to tank 241-C-108. The leak occurred in the vicinity of the pump pit which is located on the north side (12 o'clock position) of the tank.

Process Description: The 241-C-105 to 241-C-108 overground transfer line broke and contaminated the soil northeast of the 241-C-105 tank pit.

Waste Type: Process Effluent

Waste Description: The waste was PUREX coating waste that was released to the ground from a line break in the 241-C-105 to 241-C-108 overground transfer line.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-22

Classification: Accepted

Names: UPR-200-E-22; 291-A-1 Stack Fallout Area; UN-200-E-22

Reclassification: Consolidated (7/19/2004)

Structures: also associated with UPR-200-E-24.

Waste Type: Soil

Waste The contamination originated from PUREX process tube bundles (from F-11 and H-4).

Description: Radiological readings ranged from a maximum of 60 millirad/hour beta/gamma at the burial ground to approximately 1,000 counts/minute outside the 200 East Area fence.

The Site Was Consolidated With:

Code: 218-E-10

Names: 218-E-10; Equipment Burial Ground #10; 200 East Industrial Waste No. 10

Code: UPR-200-E-24

Classification: Accepted

Names: UPR-200-E-24; Contamination Plume from the 218-E-10 Burial Ground; UN-200-E-24

Reclassification: Consolidated (5/6/2004)

Type: Unplanned Release

Start Date: 1/1/1960

Status: Inactive

End Date:

Description: The contaminated area is not currently marked or posted.

Location: Contamination spread from the 200 East Burial Ground (218-E-10) to as far as 3 miles (4.83 kilometers) beyond the 200 East Area perimeter fence.

Release Description: On Friday, June 10, 1960, a burial box containing two PUREX process steam tube bundles was placed in the 218-E-10 Burial Ground. It was covered with dirt, but not completely backfilled. Over the weekend, the box collapsed, causing a contamination spread. On Monday, June 13th, the burial ground was found to be contaminated with radiological levels ranging from 10 to 60 millirads/hour. It was also determined that wind had carried the contamination southeast across the 200 East Area to mile post 7 on Highway 4-S. Contamination levels beyond the 200 East area fence were approximately 1000 counts per minute. Two private vehicles were decontaminated that had been located in the PUREX parking lot. The incident was investigated and reported as Radiation Exposure Occurrence Type C, CPD 60-1. The date of the incident is probably June 10, 1960 instead of the June 17, 1960 as reported in PNL-6456. However, it is likely that the distant contamination (identified at mile marker 7 southeast of 200 East Area) was not documented until June 17th.

Process Description: Large boxes of contaminated equipment were routinely transported to solid waste burial grounds on railroad flat cars.

Related Sites/ Structures: This site is associated with UPR-200-E-23.

Waste Type: Soil

Waste Description: The release was caused from a burial box containing PUREX tube bundles. The average radiation level on the soil surfaces inside the burial ground fence was 30 millirads/hour at 10.16 centimeters (4 inches). The contamination diminished as it traveled from the burial site. Less than one particle of contamination per 9 square meters (100 square feet) was found outside the 200 East Area perimeter fence.

The Site Was Consolidated With:

Code: 218-E-10

Names: 218-E-10; Equipment Burial Ground #10; 200 East Industrial Waste No. 10

Code: UPR-200-E-25

Classification: Accepted

Names: UPR-200-E-25; Contamination Spread from the 241-A-151 Diversion Box; UN-200-E-25 **Reclassification:** Consolidated (12/7/2004)

Type: Unplanned Release **Start Date:** 1/1/1960

Status: Inactive **End Date:**

Description: The area south of PUREX, inside the facility fence had been posted as a Contamination Area. In 1999, the large posted Contamination Area was covered with clean backfill and changed to an Underground Radioactive Material Area (200-E-103). It is possible this release contributed to the contamination in the area. The release is not separately marked or posted, but is documented on a sign hung on the PUREX south perimeter fence.

Location: The area of contamination extended southwest of PUREX, as far as 61 meters (200 feet) beyond the 200 East Area fence.

Release Description: On September 5, 1960, steam released from the 241-A-151 Diversion Box during jumper testing contaminated an area southwest of PUREX. A plume of contaminated particles extended 200 feet (61 meters) beyond the 200 East Area fence. The average ground deposition was approximately five particles per 9.3 square meters (100 square feet). The maximum contamination level per particle was 100,000 counts per minute. Seven of ten Hanford Site buses, parked at the 200 East Area Badge House, were contaminated on the outside. No private vehicles were involved.

Related Sites/ Structures: The site is associated with 241-A-151 and 200-E-103.

Waste Type: Steam Condensate

Waste Description: Steam rising from the diversion box caused a spread of beta/gamma (specks) with readings up to 100,000 counts per minute per particle. The average ground deposition (specks) was approximately five particles per 9.3 square meters (100 square feet).

The Site Was Consolidated With:

Code: 200-E-103
Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-26 **Classification:** Accepted

Names: UPR-200-E-26; 241-A-151 Release; UN-200-E-26 **Reclassification:** Consolidated (12/7/2004)

Type: Unplanned Release **Start Date:** 1/1/1960

Status: Inactive **End Date:**

Description: The area south of PUREX, inside the facility fence had been posted as a Contamination Area. In 1999, the large posted Contamination Area on the south side of PUREX was covered with clean backfill and changed to an Underground Radioactive Material Area (200-E-103). The release is not separately marked or posted, but is documented on a sign hung on the PUREX south perimeter fence. It is possible this release contributed to the contamination in the area.

Location: Contamination from this release spread southwest of the 241-A-151 Diversion Box, outside of the 200 East Area perimeter fence and across Route 4S.

Release Description: On September 30, 1960, a recently installed jumper was being tested. A gross leak was observed in the 241-A-151 Diversion Box causing an operator to stop test. However, the E-1 process tank emptied causing a cloud of steam to blow out of the faulty jumper connection, contaminating the area around the diversion box and beyond the PUREX fence. Beta/gamma readings ranged from 1 to 3 rad per hour near the diversion box. Just outside the PUREX

exclusion fence, the general contamination decreased to 3,000 counts per minute. Contamination concentrations of approximately 5 particles per 9.3 square meters (100 square feet) were found as far away as the BC Crib Area. Several employees and government vehicles at the job site were contaminated.

Related Sites/ Structures: The release is associated with the 241-A-151 Diversion Box and 200-E-103.

Waste Type: Steam Condensate

Waste Description: A cloud of contaminated steam escaped from a faulty connection inside the diversion box.

Beta/gamma contamination (specks) with readings ranging from 1 to 3 millirads per hour were found near the diversion box. The general contamination levels on surfaces further away averaged 3,000 counts per minute. The waste line being tested was used for routing PUREX strontium interim storage to 244-CR vault.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-27

Classification: Accepted

Names: UPR-200-E-27; 244-CR Contamination Spread; UN-200-E-27

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1960

Description: The release site, within the Tank Farm fenceline, is not specifically marked or posted.

Location: The release originated from the 244-CR Vault and spread eastward, contaminating the inside of the tank farm and also several hundred feet beyond the tank farm perimeter fence.

Release Description: On November 1, 1960, during work in the 244-CR Vault, winds spread contaminated particles eastward. Contamination levels around the vault, inside the fence, ranged between 50 and 100 millirads/hour. Particles reading as high as 40,000 counts per minute were found outside the fence. The original incident report says work was being done in a diversion box when the release occurred. The 241-CR-151 Diversion Box is adjacent to the 244-CR Vault.

Waste Type: Process Effluent

Waste Description: Beta/gamma contamination (specks) with readings of 50 to 100 millirads/hour was found near the vault. Readings of particles on surfaces outside the tank farm fence area were up to 40,000 counts/minute.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-30

Classification: Accepted

Names: UPR-200-E-30; Contamination Within 218-E-10; UN-200-E-30

Reclassification: Consolidated (6/28/2007)

Type: Unplanned Release

Start Date: 1/1/1961

Status: Inactive

End Date: 1/1/1961

Description: The burial ground has been surface stabilized. The burial ground is posted as Underground.

Related Sites/ Structures: The release is associated with the 241-A-151 Diversion Box and 200-E-103.

Waste Type: Steam Condensate

Waste Description: Steam rising from the 241-A-151 Diversion Box resulted in a spread of beta/gamma contamination (specks) with readings ranging from 40,000 to 100,000 counts per minute in the vicinity of PUREX. Readings on surfaces outside of the limited area fence decreased to 1,000 counts per minute. The diversion box provided routing for high level waste from the PUREX F and G cells to the tank farms.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-32

Classification: Accepted

Names: UPR-200-E-32; Coil Leak from 221-B; UN-200-E-32

Reclassification: Consolidated (1/19/2000)

Type: Unplanned Release

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: The site is an unplanned release that affected the 207-B Basin and the 216-B-2-1 Ditch. The unplanned release is not visually marked or posted. The 207-B Basin is labeled and posted as a Contamination Area. The 216-B-2-1 ditch is marked with AC-540 markers and is included within a larger Underground Radioactive Material area. This site has been consolidated with the 207-B Retention Basin.

Location: The release occurred at B-Plant and affected the 207-B Retention Basin and the 216-B-2-1 Ditch. The basin and the ditch are located inside the 200 East Area, east of Baltimore Ave. and south of 241-B Tank Farm.

Release Description: On November 7, 1963, a coil failed in the 221-B Building (6-1 Rare Earth Storage Tank) and caused a liquid release, contaminating the 207-B Retention Basin and the head end of the 216-B-2-1 Ditch. Document HW-79768 states the general dose rates ranged from 500 millirem per hour to 2 Rad per hour. Tumbleweeds driven into the contaminated ditch by high winds were found to be reading 50 rads per hour. The tumbleweeds were removed and transported to the burial grounds.

Related Sites/ Structures: The release was related to B-Plant (221-B) 6-1 Tank inside 221-B. The pipeline from B Plant to the 207-B Basin is sitecode 200-E-112-PL.

Waste Type: Process Effluent

Waste Description: The B Plant 6-1 Rare Earth Storage Tank coil failed and cause a release to the retention basin and 216-B-1 ditch. A sample of the effluent released to the 207-B Retention Basin was analyzed in 1963. It was primarily Cerium-144 (30 curies) and .05 curies of strontium-90.

Description: Dose rates up to 500 millirad per hour were documented. Tumbleweeds that had blown into the ditch read up to 50 rad/hr.

The Site Was Consolidated With:

Code: 207-B

Names: 207-B; 207-B Retention Basin; B Plant Retention Basin

Code: UPR-200-E-34

Classification: Accepted

Names: UPR-200-E-34; Liquid Release to B-Pond and Gable Pond; UN-200-E-34 **Reclassification:** Consolidated (1/19/2000)

Type: Unplanned Release **Start Date:** 1/1/1964

Status: Inactive **End Date:** 1/1/1964

Description: This was a liquid unplanned release to a pond. There is no visual evidence of this release. The release effected the 216-B-3 Pond, 216-A-25 Pond and 216-A-29 Ditch. The 216-B-3 Pond, 216-A-25 Pond, and 216-A-29 Ditch have all been surface stabilized and are posted as Underground Radioactive Material Areas. This site has been consolidated with the 216-B-3 Pond.

Location: The unplanned release was a liquid release from PUREX that terminated in 216-B-3 Pond located east of 200 East area, outside the east perimeter fence and to 216-A-25 (Gable) Pond, located north of 200 East Area via ditches and an underground pipeline.

Release Description: On June 12, 1964, a coil leak in the F-15 Plutonium Uranium Extraction (PUREX) Tank contaminated 216-B-3 (B Pond) and 216-A-25 (Gable Mountain Pond). Approximately one fourth of the release was discharged to 216-B-3 Pond and the remaining three fourths of the contamination was released to 216-A-25 (Gable) Pond.

Related Sites/ Structures: The release is associated with the PUREX facility, 216-A-25, 216-A-29 and 216-B-3.

Waste Type: Process Effluent

Waste Description: The ponds and ditch were contaminated with approximately 10,000 curies of mixed fission products from a coil leak in the PUREX F-15 tank. Water and biota samples found niobium-95, zirconium, yttrium, strontium-89, cerium-144, praseodymium-144, strontium-90 and cesium-137.

The Site Was Consolidated With:

Code: 216-B-3

Names: 216-B-3; 216-B-3 Main Pond; 216-B-3 Swamp; B Plant Swamp; B Pond; B Swamp; B-3 Pond; West Side Overflow Pond

Code: UPR-200-E-36 **Classification:** Accepted

Names: UPR-200-E-36; Contamination Spread North of Semi-Works; Road Contamination North of Semiworks; UN-200-E-36 **Reclassification:** Consolidated (11/22/2004)

Type: Unplanned Release **Start Date:** 1/1/1967

Status: Inactive **End Date:**

Description: The release site is no longer marked or posted. The release was described as contamination that spread in a fan-shaped measuring 150 yards (137 meters) wide and 300 yards (275 meters) long. The contamination effected the road and desert land north of the Strontium Semiworks.

Location: The release effected the road and land north of Strontium Semiworks. The road north of the Semiworks facility is 7th Street. The location description is vague.

Release Description: The release occurred on July 24, 1967 during removal of two pumps from A cell at the Strontium Semiworks facility. The contaminated area consisted of a fan-shaped area extending 150 yards (137 meters) wide and 300 yards (275 meters) long north of A cell at Semiworks (201-C). No conclusive cause of the spread is discussed.

Related Sites/ Structures: The stabilized Semiworks area is known as 200-E-41.

Waste Type: Process Effluent

Waste Description: The release contaminated the area with beta/gamma with readings of 30,000 to 80,000 counts per minute from two pumps removed from the Semiworks A cell.

The Site Was Consolidated With:

Code: 200-E-41

Names: 200-E-41; Stabilized Hot Semiworks Area; Strontium Semi-Works Stabilized Area; UN-216-E-38

Code: UPR-200-E-38

Classification: Accepted

Names: UPR-200-E-38; Release from 241-B-152; UN-200-E-38; UN-216-E-4

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1968

Status: Inactive

End Date: 1/1/1968

Description: 241-B Tank Farm is enclosed with a chain link fence. The release is not separately marked or posted.

Location: The release occurred in the southwest corner of 241-B Tank Farm, adjacent to the 241-B-152 Diversion Box.

Release Description: A line, carrying 221-B cell drain waste, leaked causing a subsidence at the southeast corner of the 241-B-152 Diversion Box. Liquid was observed in the hole. Dose rate levels included 5 rad per hour at a distance of 10 meters (30 feet) and 30 millirem per hour at a distance of 45 meters (150 feet). Contamination spread in a northeast direction from the diversion box. Ground contamination levels ranged from 2,000 to 6,000 counts per minute at a distance of 183 meters (600 feet). Contamination levels decreased to background levels before reaching the 200 East Area perimeter road and fence.

Related Sites/ Structures: The release is associated with the 241-B-152 Diversion Box.

Waste Type: Chemicals

Waste Description: Dose rates ranged from 5 rad per hour to 30 millirem per hour. Ground contamination readings ranged from 2,000 to 6,000 counts per minute. The waste came from the 221-B 9-2 tank and contained ruthenium and cerium.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-40

Classification: Accepted

Names: UPR-200-E-40; Release from the 216-A-36B Crib Sampler; UN-200-E-40

Reclassification: Consolidated (1/19/2000)

Type: Unplanned Release

Start Date: 1/1/1968

Status: Inactive

End Date:

Description: The site is an unplanned release. The site is not separately marked or posted. It has been consolidated with 200-E-103, because it is located within the boundaries of the larger site. 200-E-103 is a surface stabilized area that is posted Underground Radioactive Material.

Location: The release occurred on the ground and blacktop area outside the 216-A-36B Crib Sampler

Shack (#295-A). The sample shack is located inside the PUREX Exclusion fence, south of 202-A, adjacent to the west side of the PUREX Storage Tunnel.

Release Description: On August 5, 1968, the valve to the vent line at the 216-A-36B Crib Sampling Shack was inadvertently left open. Liquid was noted spewing from the vent on the 216-A-36B Crib Sample Shack (295-A). The release contaminated approximately 4.65 square meters (50 square feet) of the blacktop outside the shack. The maximum contamination was 150 millirad/hour.

Related Sites/Structures: The site is associated with the 216-A-36B Crib, the 295-A Sample Shack, UPR-200-E-39 and the surface stabilized area known as 200-E-103.

Waste Type: Process Effluent

Waste Description: The release consisted of contaminated liquid (ammonia scrubber) with maximum beta/gamma readings of 150 millirad/hour.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-41

Classification: Accepted

Names: UPR-200-E-41; UPR-200-E-85; UN-200-E-41
Soil Contamination in the Vicinity of R-13
Stairwell (221-B)

Reclassification: Consolidated (10/6/2005)

Type: Unplanned Release

Start Date: 1/1/1972

Status: Inactive

End Date:

Description: This is a DUPLICATE of UPR-200-E-85.

Location: The site is located in the vicinity of the R-13 stairwell on the south side of the 221-B Building.

Release Description: This site was originally reclassified as Rejected. The reclassification form states that the site was reclassified because it is a duplicate of another site. The reclassification occurred before a Consolidated reclassification status was available. The reclassification status was administratively changed to Consolidated. The reclassification date was not changed. Elevated dose rates were found inside a concrete electrical utility pit during a routine radiation monitoring survey on July 19, 1972. The maximum dose rate levels were up to 12.5 rad per hour, including 1.5 rad per hour of gamma. The release occurred in the ion exchange loading waste export line from tank 18-1 going to 241-BX Tank Farm via the 241-BX-154 diversion box. This waste line is located adjacent to the electrical utility pit. Contaminated waste seeped from the waste line and effected the electric utility pit.

Waste Type: Process Effluent

Waste Description: An estimated 30 curies of cesium-137 with readings of 12.5 rad per hour was released to the soil around the pipeline that carried tank 18-1 waste. Half of the cesium released was removed with the soil excavated to expose the line leak.

The Site Was Consolidated With:

Code: UPR-200-E-85

Names: UPR-200-E-85; Line Leak at 221-B Stairwell R-13; UN-200-E-41; UN-200-E-85; UN-216-E-13; UPR-200-E-41

Code: UPR-200-E-47

Classification: Accepted

Names: UPR-200-E-47; Contamination Spread from 241-

Reclassification: Consolidated (6/13/2002)

The Site Was Consolidated With:**Code:** 200-E-131**Names:** 200-E-131; Contaminated Soil Associated with 241-A Tank Farm Complex

Code: UPR-200-E-49 **Classification:** Not Accepted**Names:** UPR-200-E-49; Roadway Contamination; UN-200-E-49 **Reclassification:** None**Type:** Unplanned Release **Start Date:** 1/1/1975**Status:** Inactive **End Date:** 1/1/1975**Description:** The sites of the release are not currently marked or posted.**Location:** The two contaminated areas were on the roadway between the 241-AY Tank Farm and 218-E-12B Burial Ground.**Release Description:** On February 7, 1975, a thermocouple well was removed from the 241-A-104 Storage Tank by pulling the well into a plastic tube as it was withdrawn from the tank. The contained well was placed on a flatbed truck for transportation to the burial ground. When leaving the Tank Farm gate, the plastic tube was ripped at the end closest to the front of the truck. At each of two downhill grades on the road, condensate in the plastic tube dripped out of the rip. Because the road was covered by 15 centimeters (6 inches) of snow, the driver thought the drips were probably melting snow. Upon arrival at the burial ground, the driver informed the foreman of the drips. A monitoring survey showed the release of contamination, which was limited to the snow cover and did not reach the roadway. The cleanup was begun that day and finished by noon on February 10, 1975.**Waste Type:** Process Effluent**Waste Description:** The road was contaminated with beta/gamma with readings of 100,000 counts/minute while transporting a themocouple from the 241-A-104 tank to the burial ground.

Code: UPR-200-E-51 **Classification:** Accepted**Names:** UPR-200-E-51; Liquid Release from Purex to B-Pond; UN-200-E-51 **Reclassification:** Consolidated (1/19/2000)**Type:** Unplanned Release **Start Date:** 1/1/1977**Status:** Inactive **End Date:****Description:** The site is an unplanned release that discharged to 216-A-29 Ditch, 216-B-3-3 Ditch, and 216-B-3 Pond. There is no visual evidence of this release. It is not separately marked or posted. The 216-B-3 Pond, 216-A-29 Ditch and the 216-B-3-3 Ditch have all been backfilled and surface stabilized. They are posted Underground Radioactive Material areas. This site has been consolidated with the 216-A-29 Ditch.**Location:** The incident involved a release to 216-B-3 Pond via the PUREX Building chemical sewer and the 216-B-3-3 Ditch. All of these waste units are located east of the 200 East Area perimeter fence.**Release Description:** On May 15, 1977, a maximum of 15 kilograms (33 pounds) of cadmium as a nitrate solution was released from the PUREX storage tank, TK-324, to the chemical sewer (216-A-29 Ditch), 216-B-3-3 Ditch, and eventually released into the 216-B-3 Pond (B Pond). The incident occurred during an attempted transfer in the PUREX Building from storage tank TK-324 to storage tank TK-F18. A total of 61 drums that had previously contained cadmium nitrate were rinsed out and the solution was put in storage tank TK-324. TK-324 was discharged to the chemical sewer (216-A-29 Ditch). The cadmium nitrate solution was supposed to be

transferred to TK-F18 for ultimate disposal to an underground storage tank, however, the Instrument Engineering Flow Diagram was not correct regarding the discharge routing from TK-324.

Related Sites/ Structures: The release is associated with the PUREX facility, 216-B-3, 216-B-3-3 and 216-A-29.

Waste Type: Chemicals

Waste Description: A cadmium nitrate solution containing 15 kilograms (33 pounds) of cadmium was released to the pond and ditch system. Water samples found levels of cadmium to be 5 times the drinking water standard.

The Site Was Consolidated With:

Code: 216-A-29

Names: 216-A-29; 216-A-29 Ditch; A-29 Ditch; Snow's Canyon

Code: UPR-200-E-53

Classification: Accepted

Names: UPR-200-E-53; Contamination at 218-E-1; UN-200-E-53

Reclassification: Consolidated (5/6/2004)

Type: Unplanned Release

Start Date: 1/1/1978

Status: Inactive

End Date:

Description: The burial ground is surrounded with concrete markers and Underground Radioactive Material signs. The release site is not marked or posted.

Location: The release occurred at the south end the 218-E-1 Burial Ground .

Release Description: On October 17, 1978, a contamination spread occurred during backfilling operations when shallow buried contaminated waste in an adjacent trench was uncovered by a bulldozer blade. Numerous spots of radioactive contamination were detected throughout an area of approximately 15.3 meters (50 feet) by 45.8 meters (150 feet) at the south end of the dry waste trench. A spot of contamination measuring up to 150 millirads/hour was also detected on the bulldozer which had been used during backfilling operations at the trench on October 12, 1978.

Waste Type: Soil

Waste Description: Beta/gamma with readings to 150 millirads/hour were detected on the bulldozer blade after working in the 218-E-1 Burial Ground uncovered a portion of the buried waste. Contamination spots were detected in an area at the south end of the waste trench.

The Site Was Consolidated With:

Code: 218-E-1

Names: 218-E-1; 200 East Dry Waste No. 001

Code: UPR-200-E-58

Classification: Accepted

Names: UPR-200-E-58; Contaminated Tumbleweeds Found on Dirt Road; UN-200-E-58

Reclassification: Rejected (7/28/2008)

Type: Unplanned Release

Start Date: 1/1/1980

Status: Inactive

End Date:

Description: The release location is not currently marked or posted. The contaminated tumbleweeds were removed in 1980.

Location: A dirt roadway leading from 241-BX Tank Farm to the Dry Waste Burial Ground was

**Related Sites/
Structures:****Waste Type:** Soil**Waste Description:** The release consisted of spotty beta/gamma contamination (specks) on the ground with readings ranging from 600 to 10,000 counts per minute.

Code: UPR-200-E-68	Classification: Accepted
Names: UPR-200-E-68; Radioactive Contamination Spread; UN-200-E-68; UN-216-E-68	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1985
Status: Inactive	End Date:

Description: The release, inside the Tank Farm fenceline, is not marked or posted.**Location:** General contamination was identified from 244-AR Vault to 241-C Tank Farm. The source was determined to be the 241-C-151 Diversion Box, located inside the C Tank Farm fence.**Release Description:** On January 11, 1985, A Radiation Protection Technologist reported finding 2,000 counts per minute removable contamination in the vicinity of the 244-AR Vault. He asked for assistance to define the contamination boundaries. All available Radiation Protection personnel were directed to assist in characterizing the situation. PUREX, B-Plant and 241-A Tank Farm were determined not to be the source. The characterization efforts were complicated by the presence of low level contamination with a rapid decay that was determined to be radon from a prolonged weather inversion. The affected area was in the vicinity of the 241-C Tank Farm. Environmental samples and roadway and surface surveys indicated the 241-C-151 Diversion Box was the source of the contamination spread. Dose rates of 5 rad per hour were found on the cover blocks.**Waste Type:** Process Effluent**Waste Description:** The contamination consisted of beta/gamma particulates, with readings ranging from 2,000 counts per minute to 5 rad per hour on the diversion box cover blocks and other surfaces in 200 East Area.**The Site Was Consolidated With:****Code:** 200-E-133**Names:** 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-70	Classification: Not Accepted
Names: UPR-200-E-70; UPR-216-E-70; Radioactive Contamination from Jumper Removal; UN-200-E-70	Reclassification: None
Type: Unplanned Release	Start Date: 1/1/1984
Status: Inactive	End Date: 1/1/1984

Description: Although several areas adjacent to the 244-A Lift Station are radiologically posted (and are contained within WIDS site code 244-A LS), the area contaminated by this event is not marked or posted since it was decontaminated the next day.**Location:** The 244-A Lift Station is located south of 7th Street and west of Buffalo Ave.**Release Description:** The contamination spread during a jumper removal at the lift station. The contamination on the

Description: released (particulates).

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-75

Classification: Accepted

Names: UPR-200-E-75; 241-B-153 Diversion Box Contamination; UN-200-E-75; UN-216-E-3

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1955

Description: The release site is not separately marked or posted.

Location: The site is an area around the 241-B-153 Diversion Box, located in the southwest corner of the 241-B Tank Farm.

Release Description: Work activities in the 241-B-153 Diversion Box during 1954 and 1955 caused a general buildup of contamination around the 241-B-153 Diversion Box.

Related Sites/ Structures: The release is associated with the 241-B-153 Diversion Box.

Waste Type: Process Effluent

Waste Description: Approximately 1 curie of fission products (particulate build up) was released from working in the 241-B-153 Diversion Box.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-76

Classification: Accepted

Names: UPR-200-E-76; 241-B-152 Pipeline Break; UN-200-E-76; UN-216-E-4

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1968

Status: Inactive

End Date: 1/1/1968

Description: The site, inside the 241-B Tank Farm, is not separately marked or posted. It is a duplicate of UPR-200-E-38.

Location: The release caused the ground to cave in near the southwest corner of the 241-B-152 Diversion Box, inside the 241-B Tank Farm.

Release Description: On January 4, 1968, a soil cave-in was noticed near the southwest corner of the 241-B-152 Diversion Box. High background readings indicated the pipeline that connected the 9-2 tank in the 221-B Plant to the 241-B-110 tank had ruptured.

Related Sites/ Structures: The release is associated with the 241-B-152 Diversion Box.

Waste Type: Process Effluent

Waste Description: The release consisted of solution from the 9-2 Tank in B Plant containing cerium-144 with

Description: 4,780 curies, ruthenium-106 with 340 curies, and zirconium-95/Nb with 850 curies. This is a fission product disposal site, high in salt and is neutral to basic pH waste.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-81

Classification: Accepted

Names: UPR-200-E-81; 241-CR-151 Line Break; UN-200-E-81; UN-216-E-9

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1969

Status: Inactive

End Date: 1/1/1969

Description: The release, inside the tank farm fenceline, is not separately marked or posted.

Location: UPR-200-E-81 occurred in the waste transfer line near the 241-CR-151 Diversion Box, inside the 241-C Tank Farm.

Release Description: On October 15, 1969, a puddle of contaminated liquid, measuring approximately 1.8 meters by 12.2 meters (6 feet by 40 feet), was discovered a few feet west of the 241-CR-151 Diversion Box. The source was determined to be a leak in an underground transfer line from the PUREX facility (F-18 cell drainage line) to the 241-C-102 Waste Storage Tank, via the 241-CR-151 Diversion Box. When the leak was stopped, most of the liquid seeped into the soil. The contaminated area was covered with about 0.5 meters (18 inches) of backfill and clean gravel. A maximum dose rate of 5 rad per hour at distance of 6.1 meters (20 feet) was recorded.

Process Description: The original transfer line had a carbon steel segment between the 241-CR-151 diversion box and 241-C-102. The leak occurred at the welded connection between the carbon steel portion of the line and the stainless steel portion of the pipeline. The transfer line is now all stainless steel.

Related Sites/Structures: UPR-200-E-81 is associated with the 241-CR-151 Diversion Box, the 241-C-102 Tank, and the PUREX 202-A Building.

Waste Type: Process Effluent

Waste Description: Approximately 136,800 liters (36,000 gallons) of PUREX coating waste was released to the soil. The release included strontium-90 (360 curies), cesium-137 (720 curies), cerium-144 (360 curies), zirconium-95/niobium (1,080 curies), and ruthenium-103 (1,080 curies) at the time of release.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-82

Classification: Accepted

Names: UPR-200-E-82; V122; 241-C-152 Line Break; B Plant Ion Exchange Feed Line Leak; UN-200-E-82; UN-216-E-10

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 12/19/1969

Status: Inactive **End Date:** 12/19/1969

Description: A large mound of shotcrete is currently on top of the area where the leak surfaced, inside the tank farm fence.

Location: UPR-200-E-82 occurred at the 241-C-152 Diversion Box (inside the tank farm) and flowed to the northeast, downgrade, until it pooled into an area outside the 241-C Tank Farm fence.

Release Description: On December 19, 1969, an underground waste line (V122) leak was discovered near the 241-C-152 Diversion Box. The source was determined to be the feed line (V122) that ran from 241-C-105 tank to the 221-B Building. Approximately 3800 liters (1000 gallons) of the total liquid released collected on the surface and was visually noticed by a Radiation Monitor. The liquid traveled downgrade, in a northeast direction, until it pooled into an area measuring approximately 0.46 square meter (5 square feet), outside the tank farm fence. The precise location of this area is not provided in the references.

Process Description: The feed for the B Plant cesium ion exchange process was pumped from the 241-C-105 (lag storage) tank through an underground pipeline and several diversion boxes, to the 221-B building.

Related Sites/Structures: UPR-200-E-82 was associated with the 241-C-152 Diversion Box, the 241-C-105 Tank, 200-E-116-PL and the 221-B Canyon Building.

Waste Type: Process Effluent

Waste Description: The waste line leak consisted of B Plant Ion Exchange waste containing cesium-134 (100 curies), cesium-137 (11,300 curies), cerium-144 (260 curies), ruthenium-106 (130 curies) and zirconium-95/niobium (260 curies) at the time of release.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-86 **Classification:** Accepted

Names: UPR-200-E-86; 241-C Tank Farm Line (V812) Break Southwest Corner; UN-200-E-86; UN-216-E-14 **Reclassification:** Consolidated (7/13/2005)

Type: Unplanned Release **Start Date:** 1/1/1971

Status: Inactive **End Date:** 1/1/1971

Description: The site is an area covered with shotcrete, with concrete AC-540 marker posts at each corner. It is posted with Underground Radioactive Material signs.

Location: UPR-200-E-86 occurred near the southwest corner of the 241-C Tank Farm, outside the tank farm fence.

Release Description: On February 25, 1971, routine line (leak detection) monitoring equipment detected a leak in the vicinity of transfer line number 812. The line was being used to transfer process waste (containing approximately 25,000 curies of cesium-137) from the 244-AR Vault to 241-C-106 in 241-C Tank Farm. The leak occurred at the welded junction of a carbon steel segment and a stainless steel segment of the pipeline. The pipeline is identified as line V108/812.

Process Description: The 812 transfer line is a 5 centimeter (2 inch) diameter carbon steel line with stainless steel joints. It is buried 2.4 meters (8 feet) below ground.

Related Sites/ Structures: UPR-200-E-86 is associated with the process transfer line number 812 (Site Code 200-E-153 PL), the 244-AR Vault, and the 241-C Tank Farm.

Waste Type: Process Effluent

Waste Description: A leak of approximately 65802 liters (17,385 gallons) of process waste, containing 25,000

curies of cesium-137, caused approximately 36 cubic meters (1,300 cubic feet) of soil to be contaminated. The waste contained approximately 1.35 curies per gallon of cesium-137.

The Site Was Consolidated With:

Code: 200-E-153-PL

Names: 200-E-153-PL; Direct Buried Transfer Line from 241-C-151 to 244-AR-TK-002; Tank Farm Pipeline; Tank Farm Transfer Line V108/812

Code: UPR-200-E-90

Classification: Accepted

Names: UPR-200-E-90; Ground Contamination Around B Plant Sand Filter; Radioactive Spill Near 221-B Building; UN-200-E-90; UN-216-E-18; UN-216-E-90

Reclassification: Rejected (7/19/2004)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This release site is not separately marked or posted. A 1991 site visit found the area around the 291-B Sand Filter delimited by a light weight chain link fence and marked with surface contamination warning signs.

Location: The site location is described as being approximately 300 feet (92 meters) south of the 221-B Building and adjacent to the 291-B Stack Sand Filter.

Release Description: A correspondence from Harold Maxfield dated September 24, 1981 states UN-216-E-18 (aka UPR-200-E-90) is an operational dose rate zone, established because of high gamma dose rates emitting from the 291-B Stack Area. It was mistakenly designated as an Unplanned Release Site.

Related Sites/ Structures: UPR-200-E-90 is associated with the 291-B Stack Sand Filter.

Waste Type: Process Effluent

Waste Description: In September 1980 the area surrounding the 291-B Stack sand filter (inoperable) and filtration system was found to have high gamma dose rates. Millions of curies of radionuclides filtered through these systems and is the source of the radiation according to BHI-00179.

Code: UPR-200-E-92

Classification: Accepted

Names: UPR-200-E-92; 216-E-20; Ground Contamination Outside 200 East Fence; UN-200-E-92; UN-216-20; UN-216-E-20; UN-216-E-92

Reclassification: Consolidated (4/12/2004)

Type: Unplanned Release

Start Date: 1/1/1980

Status: Inactive

End Date: 1/1/1981

Description: This site was released from radiation zone status after the contaminated soil was removed in 1981. It is no longer marked or posted.

Location: UPR-200-E-92 had been located along the exterior of the eastern 200 East Area perimeter fence.

Release Description: UPR-200-E-92 was the result of contaminated Russian thistle being blown from some of the

Release Description: 200 East Area waste sites and lodging against the east perimeter fence. The thistles decomposed and released radioactive strontium and cesium into the blown sand along the bottom of the fence.

Related Sites/ Structures: The contaminated soil from UPR-200-E-92 was excavated and placed in UPR-200-E-56, which was the site of a leak from the 216-A-24 Retention Basin. WIDS site 200-E-109 addresses the reoccurring contamination of the 200 East Area perimeter fence due to contaminated tumbleweeds accumulating along the fence line.

Waste Type: Vegetation

Waste Description: Small amounts of strontium and cesium were deposited into the sand from contaminated

Russian thistle fragments.

The Site Was Consolidated With:

Code: 200-E-109

Names: 200-E-109; Contaminated Tumbleweed Accumulation; Contamination Spread in Northeast Corner of 200 East Area

Code: UPR-200-E-93

Classification: Accepted

Names: UPR-200-E-93; UN-216-E-21 Ground Contamination Along 200 East Area fence

Reclassification: Consolidated (4/12/2004)

Type: Unplanned Release

Start Date: 1/1/1980

Status: Inactive

End Date: 1/1/1981

Description: This unplanned release is no longer marked or posted.

Location: UPR-200-E-93 was located along the interior of the eastern 200 East Area perimeter fence, extending from the 207-A Retention Basin to the northeast corner of the 200 East Area.

Release Description: UPR-200-E-93 is the result of contaminated Russian thistle being blown from some of the 200 East Area waste sites and lodging against the east perimeter fence. Over a number of years, the thistles decomposed and formed a layer of radioactivity under the sand along the fence.

Process Description: Contamination areas are often identified that are attributed to the accumulation of blowing contaminated tumbleweeds and tumbleweed fragments.

Related Sites/ Structures: The contaminated soil from UPR-200-E-93 was excavated and placed in UPR-200-E-56, which was the site of a leak from the 216-A-24 Retention Basin. WIDS site 200-E-109 addresses the reoccurring contamination of the 200 East Area perimeter fence due to contaminated tumbleweeds accumulating along the fence line.

Waste Type: Vegetation

Waste Description: Small amounts of contamination were deposited into the sand from the contaminated Russian

thistle that collected and then decomposed along the fence line.

The Site Was Consolidated With:

Code: 200-E-109

Names: 200-E-109; Contaminated Tumbleweed Accumulation; Contamination Spread in Northeast Corner of 200 East Area

Code: UPR-200-E-94

Classification: Accepted

Names: UPR-200-E-94; Vehicle Decontamination Area;

Reclassification: Rejected (2/10/2000)

UN-200-E-94; UN-216-E-22

Type: Unplanned Release**Start Date:** 1/1/1979**Status:** Inactive**End Date:** 1/1/1979

Description: The site was a large gravel pit that was sometimes used to decontaminate equipment. The gravel pit had been posted with Surface Contamination Area (SCA) signs. The radiological posting was removed from the gravel pit in 1984. The gravel pit was obliterated by heavy construction equipment in the area during the stabilization of the 216-B-3-1 and 216-B-3-2 ditches. The gravel pit is no longer visible or marked.

Location: The site was located inside a gravel pit located north of the 216-B-3-1 Ditch. The 216-B-3-1 Ditch is located east of the 200 East Area perimeter fence.

Release Description: In June 1979, the Radiation Monitoring Department was informed that moisture was being encountered in the excavation east of the 200 East Area perimeter fence adjacent to the 216-A-24 Crib, where fill dirt was being obtained for the construction of the 241-AN Tank Farm (see Site Code UPR-200-E-56). Follow-up surveys revealed a maximum of 8,000 counts per minute beta/gamma contamination in the moisture, on the earth moving equipment and in the newly hauled-in soil around the new 241-AN Tank Farm. The contaminated equipment was taken to the large gravel pit north of the 216-B-3 Ditch Diverter Station, where it was decontaminated. The designation of the gravel pit as UPR-200-E-94 (alias UN-216-E-22) is the result of the contamination residue on the bottom of the gravel pit, with beta/gamma activity reading 300 counts per minute.

Process Description: In 1970, the gravel pit was posted as a Radiation Zone and used to park regulated (contaminated) equipment during the decontamination of the 216-B-3-2 Ditch. It was used again in 1979 to decontaminate earth moving equipment that became contaminated by digging too close to the 216-A-24 Crib (see UPR-200-E-56). The gravel pit remained posted as a radiological area until 1984.

Related Sites/ Structures: The site is associated with UPR-200-E-56, 216-B-3-1 and 216-B-3-2.

Waste Type: Soil

Waste Description: An earth moving vehicle was found to be contaminated with a maximum of 8000 counts per minute. Equipment decontamination efforts done in the gravel pit left a 300 counts per minute residue on the bottom of the pit. The waste was unknown beta and gamma contamination.

Code: UPR-200-E-97**Classification:** Accepted**Names:** UPR-200-E-97; Contamination Near PUREX Railroad Tunnel; Ground Contamination Around Cribs South of PUREX; UN-200-E-97; UN-216-E-25**Reclassification:** Consolidated (7/19/2004)**Type:** Unplanned Release**Start Date:** 1/1/1980**Status:** Inactive**End Date:**

Description: The site is not separately marked or posted. It had been located near the 216-A-21 crib, inside the stabilized area now known as 200-E-103. The area was surface stabilized in 1999.

Location: The site is located south of the 202-A Building near the railroad tunnel. A map attachment to RHO-CD-1048 indicates it was adjacent to the west side of tunnel 218-E-14.

Release Description: Ground contamination from an unknown source was detected around the cribs south of PUREX, west of the railroad tunnel (218-E-14).

Related Sites/ The release site is associated with the 200-E-103 stabilized area.

Structures:

Waste Type: Soil

Waste Surface soil contamination was identified from an unknown source.

Description:

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-105

Classification: Accepted

Names: UPR-200-E-105; Liquid Release in the 241-BY Tank Farm; UN-200-E-105

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date:

Description: The release site is not separately marked or posted.

Location: The contaminated liquid discharge occurred at the manifold header at the 241-BY-107 Tank, inside the 241-BY Tank Farm.

Release Description: On December 16 and 17, 1952, first cycle waste leaked from the manifold header at the 241-BY-107 Tank in the 241-BY Tank Farm onto the ground surface. A mechanic forgot to replace and tighten the bolts on the manifold header after breaking one of the bolts at the flange connection to the manifold header while removing a waste pump. On December 16, 1952, at 2:55 PM liquid waste started being pumped from the 241-BX-107 Tank to the 241-BY-107 Tank. A pool of contaminated liquid next to 241-BY-107 was discovered by a chemical trainee on December 17, 1952, just after midnight, when he went to the wrong tank by mistake. He took a dose reading, which was well up on the third scale of the CP meter, and immediately left the area. The pumping at the 241-BX-107 Tank was stopped when they realized where the liquid was coming from. About 87,055 liters (23,000 gallons) of first cycle waste was discharged onto the ground surface in a low, well confined area, measuring about 27.9 square meters (300 square feet).

Waste Type: Process Effluent

Waste Description: The release consisted of first-cycle waste. The exposure rate to the chemical operator trainee was 7.5 rad per hour about 0.91 meters (3 feet) from the liquid. Estimated dose to the individual was 60 millirems. Radiation surveys revealed a maximum dose rate of 150 rad per hour at 5.08 centimeters (2 inches) from the surface of the release.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-106

Classification: Accepted

Names: UPR-200-E-106; Contamination at a Burning Ground; UN-200-E-106

Reclassification: Consolidated (5/6/2004)

Type: Unplanned Release

Start Date: 1/1/1946

Status: Inactive

End Date: 1/1/1946

Description: UPR-200-E-106 is an unplanned release that occurred in a burning ground in the 200 East Area. There is no visual evidence of contaminated material remaining in the 200-E Burn Pit. This Unplanned Release is not marked or posted.

Location: The location information contained in the 1946 Occurrence Report is vague. The authors of the PUREX Plant Aggregate Area Management Study Technical Baseline Report (BHI-00178) have assumed that this incident occurred within the 200-E Burning Pit.

Release Description: On September 5, 1946 contaminated towels showing radiation levels as high as 2.4 rads/hour (originally measured as 2.5 reps/hour) were found in one of the "burning grounds". The towels were traceable to the Control Laboratory since they were contained with waste from that location. The acronym rep stands for Roentgen Equivalent Physical with one rep equaling 95 ergs/gram (0.0095 joules/kilogram). One rep is roughly equivalent to 1 rad.

Waste Type: Chemicals

Waste Description: The waste consisted of radiologically contaminated towels.

The Site Was Consolidated With:

Code: 200-E BP

Names: 200-E BP; 200-E Burning Pit; 200 East Burn Pit

Code: UPR-200-E-107

Classification: Accepted

Names: UPR-200-E-107; Contamination Spread in 241-C Tank Farm; UN-200-E-107

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1952

Description: The site is not separately marked or posted from the rest of the tank farm postings.

Location: UPR-200-E-107 occurred within the 241-C Tank Farm.

Release Description: On November 26, 1952, process waste was being directed to the first tank in a three tank cascade series. The waste failed to cascade to the second tank, indicating the overflow line was plugged. Since there was an urgent need to discharge the waste to these tanks, an overground transfer was attempted. The foreman wanted to check the pump operation. He believed the pump was not yet submerged into the waste and opened the air valve. Since the pump leg was already in the liquid, it discharged waste with sufficient force to be propelled 6 meters (20 feet) away. Approximately 19 liters (5 gallons) of waste was discharged to the ground with a dose rate of 4 rad per hour.

Related Sites/Structures: UPR-200-E-107 is associated with the 241-C-110 Tank in the 241-C Tank Farm.

Waste Type: Process Effluent

Waste Description: The waste was tributyl phosphate (TBP) from the 221-U uranium recovery process.

Description: Approximately 18.9 liters (5 gallons) of contaminated liquid was discharged to the ground before the pump could be shut off. The maximum dose rate was 4.2 rad per hour at the surface, including 200 millirem per hour at a distance of 2 inches.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-108 **Classification:** Accepted

Names: UPR-200-E-108; 241-B-102 Tank Release; UN-200-E-108 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1953

Description: The release is not separately marked or posted from the rest of the tank farm.

Location: Contamination spread in and around the 241-B-102 heel jet pit inside the 241-B Tank Farm. The tank is located in the eastern portion of the 241- B Tank Farm.

Release Description: On April 14, 1953, a high level contamination spread was caused when supernatant pumped from 241-B-102 to 241-B-101 spilled to the ground inside the tank farm because a blank was not installed on the heel jet discharge line. The heel jet pit is located near the surface in the center of the tank. Personnel contamination of 4,000 counts per minute on a shoe led to the discovery of the incident. Ground contamination up to 10 rad per hour was identified 3.05 meters (10 feet) from the pit. No significant exposures were known to have occurred. The incident was investigated by the Manufacturing Department as Incident #64, and published as HW-27914. The same incident (same date, location, and circumstances) was later documented by the Radiological Sciences Department on November 5, 1953, as Incident #279 in HW-29957.

Waste Type: Process Effluent

Waste Description: Metal waste supernatant from 241-B-102 was released to the ground. Visible evidence of

ground contamination was noted with dose rates up to 10 rad per hour on the surface.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-109 **Classification:** Accepted

Names: UPR-200-E-109; Release from 241-B-104; UN-200-E-109 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:**

Description: The site is not separately marked or posted from the rest of the tank farm.

Location: The release occurred inside the 241-B Tank Farm near the north side of tank 241-B-104.

Release Description: On November 11, 1953, tributyl phosphate (TBP) waste liquid contaminated the ground around the 241-B-104 Tank due to a blocked riser. The incident was created by a pump float jammed in the riser. About noon on November 10, 1953, operations and maintenance personnel were attempting a routine placement of a portable pump within a 30.48 pump float became jammed about 3.35 meters (11 feet) below the flange and broke loose from the pump. Pending salvage of the float, the concrete riser plug was replaced. Shortly after this happened, a routine transfer of 15140 liters (4000 gallons) of TBP waste, followed by a 757 liter (200 gallon) hot water flush, was made into the 241-B-104 Tank without apparent incident. About 12 hours later another 15140 liter (4000 gallon) waste transfer was made, followed by a steam sparge for 10 to 20 minutes. After the steam sparge, a process operator entered the tank farm to determine if the transfer was complete. An area of approximately 27.9 square meters (300 square feet) surrounding the jammed riser was visibly discolored, with exposure rates of 18 rad per hour at a distance of 15.24 centimeters (6 inches) and 100 millirads per hour at a distance of 9.1 meters

(30 feet). Approximately 567.75 liters (150 gallons) of concentrated waste is estimated to have spread onto the ground. It is assumed that the float partially obstructed the waste flow. When steam pressure was applied, the waste was forced up the riser around the gasketed plug and onto the ground.

Waste Type: Process Effluent

Waste Description: 567.75 liters (150 gallons) of tributyl phosphate waste contaminated the ground at the 241-B-104 Tank. The exposure rate was 18 rad per hour at a distance of 15.24 centimeters (6 inches).

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-110

Classification: Accepted

Names: UPR-200-E-110; 241-BY Valve Pit Release; UN-200-E-110

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1955

Description: The release occurred in the 241-BY Tank Farm. A crescent shaped area around a valve pit was contaminated. The area is not separately marked or posted.

Location: UPR-200-E-110 occurred around the 241-BY-112 Valve Pit, inside the 241-BY Tank Farm.

Release Description: UPR-200-E-110 occurred when liquid contaminant spread through the soil from the 112-BY Valve Pit. Several employees were potentially over-exposed as a result of the release at the 241-BY Tank Farm. A crescent shaped area around the 112-BY Pit was contaminated. A fire hose and two worker's gloves were also contaminated.

Related Sites/Structures: UPR-200-E-110 was associated with the 241-BY-112 Tank, the 241-BY-112 Valve Pit and the 241-BY Tank Farm.

Waste Type: Process Effluent

Waste Description: The release consisted of first cycle waste from the 241-BY-112 Tank. UPR-200-E-110 covered approximately 700 cubic meters (25,000 square feet) of ground around the 112-BY Valve Pit.

Contamination levels up to 22 rad per hour were recorded.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-114

Classification: Accepted

Names: UPR-200-E-114; 202-A Valve Pit; UN-200-E-114

Reclassification: Rejected (4/20/2000)

Type: Unplanned Release

Start Date: 1/1/1974

Status: Inactive

End Date: 1/1/1974

Description: The documented release describes a personnel contamination. The location where the employee became contaminated was not identified beyond "a valve pit outside 202-A."

Location: The event occurred in an unidentified valve pit outside the 202-A Building.

inches. The area around the pit was covered with dirt.

Waste Type: Process Effluent

Waste Description: An unknown amount of caustic flush water containing cesium-137, yttrium-90, and strontium-89/90 was released with dose rates up to 3 rad per hour at 15 centimeters (6 inches).

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-117

Classification: Accepted

Names: UPR-200-E-117; Contaminated Liquid Spill; UN-200-E-117

Reclassification: Consolidated (11/22/2004)

Type: Unplanned Release

Start Date: 1/1/1972

Status: Inactive

End Date:

Description: The release was identified above an encased waste line on the south of PUREX and west of the railroad tunnel. The release site is no longer marked or posted. The release site is within a larger area that was surface stabilized in 1999, known as 200-E-103.

Location: The spill occurred on the south side of 202-A, west of the railroad tunnel.

Release Description: During the excavation of an encased waste line on April 20, 1972, employees encountered liquid spurting up out of ground in the hole they had dug. The excavation was within a few inches of the top of the encasement. Personnel were evacuated from the caisson in which they were working.

Process Description: Underground pipelines V021, V022 and V023 connect the 241-A-151 Diversion Box to the 241-AW Tank Farm.

Related Sites/ Structures: The site is associated with the 241-A-151 Diversion Box and 200-E-103.

Waste Type: Process Effluent

Waste Description: Dose rates following the release were 2 rad per hour including 500 millirad per hour at 0.3 meters (1 foot) from the liquid. Mud samples taken at the point where the leak occurred showed primarily cesium and strontium with little evidence of short-lived radionuclides.

The Site Was Consolidated With:

Code: 200-E-103

Names: 200-E-103; PUREX Stabilized Area; Radiologically Controlled Area - South Side of PUREX

Code: UPR-200-E-118

Classification: Accepted

Names: UPR-200-E-118; Airborne Release from 241-C-107; UN-200-E-118

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date: 1/1/1957

Description: The release site is not separately marked or posted.

Location: The release occurred inside the 241-C Tank Farm, at the 241-C-107 Tank.

Release Description: On April 20, 1957, an airborne particle release caused contamination to spread inside the 241-C Tank Farm fence and extended 91 meters (300 feet) to the south of the badge house and an additional 270 meters (900 feet) to the north of the badge house. The contamination also spread outside of the fence, affecting the south bank of the parking lot. The highest dose rate at the surface was estimated at 50 millirad per hour, with one particle deposited per square foot.

Related Sites/ Structures: UPR-200-E-118 is associated with the 241-C-107 Tank and the 241-C Tank Farm.

Waste Type: Soil

Waste Description: The contaminated particles on the ground surface read up to 3,000 counts per minute.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-119	Classification: Accepted
Names: UPR-200-E-119; Contamination Spread Inside 241-AX; UN-200-E-119	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1969
Status: Inactive	End Date: 1/1/1969

Description: The release occurred on the ground near the 241-AX-104 Tank. It is not separately marked or posted from the rest of the tank farm.

Location: UPR-200E-119 occurred adjacent to the 241-AX-104 Tank, inside the 241-AX Tank Farm fence.

Release Description: An employee mistakenly pulled a contaminated electrode cable out of Tank 241-AX-104 and set it on the ground. He then removed his contaminated gloves and set them on the ground. Contamination was limited to a small area near the 241-AX-104 Tank, the employee, and the change house. Due to the high dose rate on the electrode, the employee received a whole body and extremity dose.

Related Sites/ Structures: UPR-200-E-119 was associated with the 241-AX-104 Tank and Change House.

Waste Type: Process Effluent

Waste Description: The release consisted of high-level waste from Tank 241-AX-104 dripping onto the soil from a contaminated electrode cable that had been inside the 241-AX-104 tank.

The Site Was Consolidated With:

Code: 200-E-131

Names: 200-E-131; Contaminated Soil Associated with 241-A Tank Farm Complex

Code: UPR-200-E-125	Classification: Accepted
Names: UPR-200-E-125; 241-A-104 Release; UN-200-E-125	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1975

Status: Inactive **End Date:** 1/1/1975
Description: The release is within the 241-A Tank Farm fence. The site is not separately marked or posted.
Location: UPR-200-E-125 occurred in the soil underneath the 241-A-104 Tank, inside the 241-A Tank Farm.
Release Description: Single Shell Tank 241-A-104 was classified a "Confirmed Leaker" on April 8, 1975 due to radiation readings increasing at several locations beneath the tank. Occurrence Report 75-39 was issued to document the event.

Related Sites/ Structures: UPR-200-E-125 was associated with the 241-A-104 Tank and the 241-A Tank Farm.

Waste Type: Process Effluent
Waste Description: Approximately 9463 liter (2500 gallon), containing 18,000 curies of cesium-137 with levels reading to 6,450 counts per minute, was released from the 241-A-104 tank.

The Site Was Consolidated With:

Code: 200-E-131
Names: 200-E-131; Contaminated Soil Associated with 241-A Tank Farm Complex

Code: UPR-200-E-126 **Classification:** Accepted
Names: UPR-200-E-126; 241-A-105 Tank Leak; UN-200-E-126 **Reclassification:** Consolidated (6/13/2002)
Type: Unplanned Release **Start Date:** 1/1/1965
Status: Inactive **End Date:** 1/1/1965
Description: The unplanned release is not separately marked or posted.
Location: UPR-200-E-126 occurred in the soil beneath the 241-A-105 Tank, inside the 241-A Tank Farm.
Release Description: In January 1965, soon after Tank 241-A-105 was filled, a sudden steam release of severe intensity occurred. An investigation revealed that the bottom liner had bulged significantly, thus creating a void volume of 80,000 gallons (303,000 liters). Approximately 18,900 liters (5000 gallons) of waste leaked from the deformed tank.

Related Sites/ Structures: UPR-200-E-126 is associated with the 241-A-105 Tank and the soil beneath the tank.

Waste Type: Process Effluent
Waste Description: Approximately 18,900 liters (5000 gallons) of waste leaked from the tank that was deformed after a sudden, volatile release of steam.

The Site Was Consolidated With:

Code: 200-E-131
Names: 200-E-131; Contaminated Soil Associated with 241-A Tank Farm Complex

Code: UPR-200-E-127 **Classification:** Accepted
Names: UPR-200-E-127; 241-B-107 Leak; UN-200-E-127 **Reclassification:** Consolidated (6/13/2002)
Type: Unplanned Release **Start Date:** 1/1/1968
Status: Inactive **End Date:**
Description: The site is underground, under the 241-B-107 Tank.

Location: The release occurred in the soil surrounding and beneath the 241-B-107 Tank inside the 241-B Tank Farm.

Process Description: Cramer (1987) reported that this UPR occurred in 1968 when 30,300 liters (8,000 gallons) of waste containing 2,000 curies of cesium-137 leaked from Tank 241-B-107.

Waste Type: Process Effluent

Waste Description: Approximately 30,300 liters (8,000 gallons) of waste containing 2,000 Curies of cesium-137 leaked from the 241-B-107 Tank.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-128

Classification: Accepted

Names: UPR-200-E-128; 241-B-110 Leak; UN-200-E-128

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1968

Status: Inactive

End Date:

Description: The site is a release underneath the 241-B-110 Tank.

Location: The release occurred in the soil surrounding and beneath the 241-B-110 Tank, inside the 241-B Tank Farm. The tank is located in the northern portion of the 241-B Tank Farm.

Process Description: The release occurred in 1969 when 31,500 liters (8,300 gallons) of waste containing 4,300 curies of cesium-137 leaked from Tank 241-B-110.

Waste Type: Process Effluent

Waste Description: 31,500 liters (8,300 gallons) of waste from the 241-B-110 Tank containing 4,300 curies of cesium-137 leaked from the 241-B-110 tank.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-129

Classification: Accepted

Names: UPR-200-E-129; 241-B-201 Leak; UN-200-E-129

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This site is the soil surrounding and beneath the 241-B-201 Tank in the 241-B Tank Farm.

Location: The tank is located on the north side of the 241-B Tank Farm, inside the fence.

Release Description: In 1968, it was reported the tank had lost 4560 liters (1200 gallons) of waste containing 420 curies of cesium-137. Slowly decreasing liquid levels prompted the tank to be categorized as Questionable Integrity in 1971. In June of 1982, tank 241-B-201 was classified as a confirmed leaker. It was documented on Operating Limit Deviation Report 82-04.

Waste Type: Process Effluent

Waste Type: Process Effluent

Waste Description: Approximately 4,500 liters (1,200 gallons) of waste containing 420 curies of cesium-137 leaked from the 241-B-201 Tank.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-130

Classification: Accepted

Names: UPR-200-E-130; 241-B-203 Leak; UN-200-E-130

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1977

Description: The release, under the 241-B-203 Tank, is not separately marked or posted.

Location: This release is the soil surrounding and underneath the 241-B-203 Tank, located inside the 241-B Tank Farm. The tank is in the northwest corner of the 241-B Tank Farm.

Release Description: Between 1951 and 1977, unplanned release (UPR) occurred when about 300 gallons (1,136 L) of lanthanum fluoride escaped from tank 241-B-203 and contaminated the soil surrounding and beneath the tank. The leak was determined by decreasing liquid level measurements.

Waste Type: Process Effluent

Waste Description: Approximately 1,135 liters (300 gallons) of waste containing lanthanum fluoride leaked from the 241-B-203 Tank.

The Site Was Consolidated With:

Code: 200-E-120

Names: 200-E-120; Contaminated Soil at 241-B Tank Farm; Contamination Migration Beyond the 241-B fence

Code: UPR-200-E-131

Classification: Accepted

Names: UPR-200-E-131; 241-BX-102 Release; UN-200-E-131

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1971

Status: Inactive

End Date:

Description: The release is not separately marked or posted.

Location: The release includes the soil around and underneath the 241-BX-102 tank, inside the 241-BX Tank Farm.

Release Description: The tank was determined to be leaking based on liquid level measurements and dry well radiation detection profiles. Over time, approximately 266,000 liters (70,000 gallons) of tank waste leaked into the soil. Nineteen new wells were added in 1970 to determine the extent of the plume. An estimated 930 cubic meters (31,000 cubic feet) of soil were affected by the leak. The plume extends eastward in a 1.8 meters (6 foot) band for approximately 30 meters (100 feet).

Waste Type: Process Effluent

Waste Description: Approximately 266,000 liters (70,000 gallons) of high-level, nonboiling liquid waste from the 241-BX-102 Tank was released. It contained 51,000 curies of cesium-137.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-132

Classification: Accepted

Names: UPR-200-E-132; 241-BX-102 Tank Leak; UN-200-E-132

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1974

Status: Inactive

End Date:

Description: The area is not separately marked or posted.

Location: The site is the soil beneath the 241-BX-102 Tank, inside the 241-BX Tank Farm.

Release Description: Waste leaked to the ground from the 241-BX-102 Tank.

Related Sites/ Structures: The release is associated with the 241-BX-102 Tank and UPR-200-E-131.

Waste Type: Process Effluent

Waste Description: 9,500 liters (2,500 gallons) of waste leaked from the 241-BX-102 Tank.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-133

Classification: Accepted

Names: UPR-200-E-133; 241-BX-108 Leak; UN-200-E-133

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The release is not separately marked or posted.

Location: The release site includes the soil surrounding and underneath the 241-BX-108 Tank, inside the 241-BX Tank Farm.

Release Description: The release occurred over time, from 1949 through 1974.

Waste Type: Process Effluent

Waste Description: 95,000 liters (2,500 gallons) of waste leaked from the 241-BX-108 Tank containing

Description: approximately 500 curies of cesium-137.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-134

Classification: Accepted

Names: UPR-200-E-134; 241-BY-103 Tank Leak; UN-200-E-134 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The release is not separately marked or posted.

Location: The release site includes the soil surrounding and underneath the 241-BY-103 Tank, inside the 241-BY Tank Farm.

Release Description: The release occurred over time. The tank was active from 1954 to 1973.

Waste Type: Process Effluent

Waste Description: The release consisted of approximately 19,000 liters (5,000 gallons) of waste from the 241-BY-103 Tank containing PUREX coating waste, tributyl phosphate process waste, and organic wash waste from the 241-BX, 241-BY, 241-B and 241-C tank farms.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-135 **Classification:** Accepted

Names: UPR-200-E-135; 241-BY-108 Tank Leak; UN-200-E-135 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The release is not separately marked or posted.

Location: The release site includes the soil surrounding and underneath the 241-BY-108 Tank, inside the 241-BY Tank Farm.

Release Description: The release from the tank occurred over time. The tank was active from 1955 to 1972.

Related Sites/Structures: The release is associated with the 241-BY-108 tank.

Waste Type: Process Effluent

Waste Description: The release consisted of approximately 19,000 liters (5,000 gallons) of tributyl phosphate waste and evaporator bottoms from 241-BY and 241-C Tank Farms.

The Site Was Consolidated With:

Code: 200-E-132

Names: 200-E-132; 241-BX/BY Tank Farm Contaminated Soil; Contamination Migration Beyond the 241-BX/BY fence

Code: UPR-200-E-136 **Classification:** Accepted

Names: UPR-200-E-136; 241-C-101 Tank Leak; UN-200-E-136 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1946

Status: Inactive **End Date:** 1/1/1970

Description: The release, inside the 241-C Tank Farm under Tank 241-C-101, is not separately marked or posted.

Location: UPR-200-E-136 includes the soil around and underneath the 241-C-101 Tank, inside the 241-C Tank Farm.

Release Description: UPR-200-E-136 occurred over a period of time, due to a liquid level decrease in Tank 241-C-101.

Related Sites/ Structures: UPR-200-E-136 was associated with the 241-C-101 Tank and the 241-C Tank Farm.

Waste Type: Process Effluent

Waste Description: It is estimated that between 64,600 and 91,200 liters (17,000 and 24,000 gallons) of waste, containing 2,000 curies of radionuclides, has leaked from the 241-C-101 tank. The tank was active from 1946 through 1970 and received bismuth phosphate metal waste, tributyl phosphate process waste and PUREX coating waste.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-137 **Classification:** Accepted

Names: UPR-200-E-137; 241-C-203 Leak; UN-200-E-137 **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/1977

Description: The release, at the 241-C-203 Single-Shell Tank, is not separately marked or posted.

Location: UPR-200-E-137 includes the soil around and underneath the 241-C-203 Single-Shell Tank, inside the 241-C Tank Farm.

Related Sites/ Structures: UPR-200-E-137 was associated with the 241-C-203 Tank and the 241-C Tank Farm.

Waste Type: Process Effluent

Waste Description: Approximately 1520 liters (400 gallons) of liquid, containing high level PUREX waste, has leaked from the 241-C-203 tank.

The Site Was Consolidated With:

Code: 200-E-133

Names: 200-E-133; Contaminated Soil at 241-C Tank Farm; Contamination Migration Beyond the fence at C Farm

Code: UPR-200-E-138 **Classification:** Accepted

Names: UPR-200-E-138; UPR-200-W-66; Liquid Release from B-Plant; UN-200-E-138 **Reclassification:** Consolidated (1/19/2000)

Type: Unplanned Release **Start Date:** 1/1/1970

Status: Inactive **End Date:** 1/1/1970

Description: This is a liquid Unplanned Release from 221-B to the 216-B-2-2 Ditch that terminated in the 216-B-3 Pond. The ditch is within a large, surface stabilized, Underground Radioactive

Material area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 Ditches. The Unplanned Release is not separately marked. This release has been consolidated with the 216-B-2-2 Ditch.

Location: The origin of the release occurred at the 8-1 Tank, inside the 221-B Building, in the 200 East Area. The release contaminated an area in the 216-B-2-2 Ditch and the 216-B-3 Pond.

Release Description: On March 22, 1970, a leaking manometer sensing line from the 8-1 Tank inside the 221-B Building was flushed down a floor drain connected to a chemical sewer that contaminated an area in the 216-B-2-2 Ditch and the 216-B-3 Pond. The 207-B Retention Basin was bypassed and was not contaminated as a result of this release. The dose rate on the manometer line in the B Plant pipe gallery was 500 R/hr at a distance of 4 inches. On March 23, 1970 at 6:00am, a dose rate of 5 R/hr was noted at check point one of the 216-B-2-2 Ditch. On March 24, 1970 at 6:00am, the dose rate at check point one of the 216-B-2-2 ditch was 2 R/hr. Check point two was 10 mr/hr, check point three was 5 mr/hr, check point four was 2R/hr and check point five was 1 R/hr.

Process Description: After UPR-200-E-138 occurred, the chemical sewer piping from the 221-B Building was flushed to the 216-B-2-2 Ditch (see 200-E-188-PL). Due to the contamination levels from the release, the ditch was then backfilled and a replacement ditch (216-B-2-3) was excavated parallel to and south of the entire length of the old ditch. B Plant effluent was then routed to the new ditch. This pipeline bypasses the 207-B Retention Basin.

Related Sites/Structures: UPR-200-E-138 was associated with a manometer sensing line from the 8-1 Tank (inside the 221-B Building), the 216-B-2-2 Ditch, the 216-B-2-3 Ditch and the 216-B-3 Pond. The pipeline associated with this release is sitecode 200-E-188-PL (line 2904-2).

Waste Type: Process Effluent

Waste Description: Radioactive liquid was released while attempting to measure the liquid level in the Storage Tank 8-1, located inside the 221-B Building. A breakdown of the radioactive material released indicates 1,495 curies (total beta) was discharged to the ditch including approximately 950 curies of strontium-90, 96 curies of cerium/promethium-144 and 1 curie of cesium-137.

The Site Was Consolidated With:

Code: 216-B-2-2

Names: 216-B-2-2; 216-B-2-2W; 216-B-1 Ditch

Code: UPR-200-E-140	Classification: Accepted
Names: UPR-200-E-140; PCB Oil Spill at 211-B Bulk Chemical Storage Area; UN-200-E-140	Reclassification: Rejected (7/28/2008)
Type: Unplanned Release	Start Date: 1/1/1986
Status: Inactive	End Date: 1/1/1986

Description: No warning signs or evidence of the unplanned release were observed during a 1991 site visit. Later, a single post was placed into the ground, with a WIDS Sitecode number sign, to mark the approximate location where the release occurred.

Location: The 211-B Bulk Storage area is located north of the 221-B building. The spill site is located at the southwest corner of the 211-B Bulk Chemical Storage Area in the 200 East Area.

Release Description: The Hanford Site Waste Management Units Report (1987) states that UPR-200-E-140 occurred on April 23, 1986. Less than 7.6 liters (2 gallons) of oil containing between 1 to 38 parts per million of polychlorinated biphenyl (PCB) was spilled to the ground at the southwest corner of the 211-B Bulk Storage Area.

Related Sites/ UPR-200-E-140 was associated with the 211-B Bulk Chemical Storage Area

Related Sites/**Structures:****Waste Type:** Chemicals**Waste Description:** The release consisted of oil contaminated with polychlorinated biphenyls (PCBs) at a concentration of 1 to 38 parts per million.**Code:** UPR-200-E-141**Classification:** Not Accepted**Names:** UPR-200-E-141; 2718-E Building Uranyl Nitrate Spill to Ground; UN-200-E-141**Reclassification:** None**Type:** Unplanned Release**Start Date:** 1/1/1984**Status:** Inactive**End Date:** 1/1/1984**Description:** The site is a release of corrosive uranyl nitrate onto asphalt and soil that occurred at the 2718-E Building. The site was located within a fenced area that includes the 209-E facility. The contaminated asphalt and soil were removed until only background levels remained. The site is not currently marked or posted.**Location:** The site had been adjacent to the 216-C-7 Crib and the southeast corner of the 2718-E building. It was southwest of the 209-C Building.**Release Description:** In September 1984, a 208-liter (55-gallon) container failed due to corrosion, releasing its contents.**Related Sites/** UPR-200-E-141 was associated with the 2718-E Building.**Structures:****Waste Type:** Chemicals**Waste Description:** The release consisted of uranyl nitrate (corrosive), and 84% uranium-235 (source radioactive) from a 207 liter (55 gallon) drum being stored on an asphalt pad.**Code:** UPR-200-E-142**Classification:** Accepted**Names:** UPR-200-E-142; 202-A Diesel Fuel Spill; UN-200-E-142**Reclassification:** Rejected (7/28/2008)**Type:** Unplanned Release**Start Date:** 1/1/1986**Status:** Inactive**End Date:****Description:** The release site is not physically marked.**Location:** The site is located north of the 202-A Building at the 202-A Building diesel fuel tank.**Release Description:** The Hanford Site Waste Management Units Report (1987) states that on November 17, 1986, the tank of a diesel-fueled compressor overflowed during filling. The release consisted of 76 liters (20 gallons) of diesel fuel.**Waste Type:** Oil**Waste Description:** The release consisted of approximately 75.7 liters (20 gallons) of diesel fuel.**Code:** UPR-200-W-7**Classification:** Accepted**Names:** UPR-200-W-7; Contamination Spread from the 241-T-151 and 241-T-152 Diversion Boxes; UN-**Reclassification:** Consolidated (6/13/2002)

200-W-7

Type: Unplanned Release**Start Date:** 1/1/1950**Status:** Inactive**End Date:**

Description: The release occurred inside the 241-T Tank Farm. The Tank Farm is surrounded with a chain link fence and posted with radiological warning signs. The diversion boxes have been covered with a protective foam layer. The unplanned release is not separately marked or posted.

Location: The 241-T-151 and 152 Diversion Boxes are located in the southeast corner of the 241-T Tank Farm - inside the tank farm fence.

Release Description: Work done in the spring of 1950 at the 241-T-151 and 241-T-152 diversion boxes resulted in contamination spread to the ground around both boxes.

Waste Type: Process Effluent**Waste Description:** Dried, loose specks spread from the diversion box and contaminated the surrounding area.**The Site Was Consolidated With:****Code:** 200-W-93**Names:** 200-W-93; Contaminated Soil at 241-T Tank Farm**Code:** UPR-200-W-10**Classification:** Accepted**Names:** UPR-200-W-10; Contamination Spread at 203-S UNH Tanks; UN-200-W-10**Reclassification:** Consolidated (7/19/2004)**Type:** Unplanned Release**Start Date:** 1/1/1952**Status:** Inactive**End Date:** 1/1/1952

Description: The site consisted of an area around the 203-S Uranium Nitrate Hexahydrate (UNH) tanks. The 203-S facility area has been decommissioned and surface stabilized (see 200-W-22). It is currently posted with Underground Radioactive Material signs. The release is not separately marked or posted.

Location: The 203-S Uranium Nitrate Hexahydrate (UNH) tanks were located northwest of the 202-S building.

Release Description: In the summer of 1952, the ground around the 203-S Uranium Nitrate Hexahydrate storage tanks were contaminated with uranium. A maximum of 10,000 counts per minute at 25 centimeters (1 inch) was found in this area. The contaminated area was covered with blacktop and surrounded with a wooden rail fence. The fence was posted with Radiation Zone signs in 1952.

Process Description: The 203-S, 204-S and 205-S Facilities were constructed in the early 1950's as a process unit for the decontamination of uranyl nitrate hexahydrate (UNH) produced by Reduction Oxidation (REDOX) operations. The primary process unit consisted of a column filled with silica gel that removed traces of fission products from the UNH. The silica gel column (SG-1) was located in the underground 205-S vault. The vault also contained a waste neutralization tank. Operations in the vault were accomplished remotely. The 205-S facility was a two story, aboveground, chemical make-up building. It contained two chemical make-up tanks, a UNH sample room and extensive piping connected to the REDOX facility and the underground vault. The 203-S facility was an aboveground UNH storage facility that consisted of two 19,000 liter (5,000 gallon) stainless steel tanks that were set in an open concrete basin. A UNH Unloading Facility was located at the adjacent railroad siding. An aboveground UNH pipeline connected the 203-S, 204-S, 205-S Area to the 224-U (UO₃ Plant). During the REDOX Plant operation, the

UNH solution was pumped from REDOX to the 205-S silica gel column for purification. The purified UNH was stored in the 203-S and 204-S tanks and then routed to 224-U for final processing via the above ground pipeline.

Related Sites/ Structures: The site is associated with the 203-S tanks and sitecode 200-W-22.

Waste Type: Soil

Waste Description: The release was described as uranium contamination of the soil with a maximum reading of 10,000 counts per minute at 25 centimeters (1 inch).

The Site Was Consolidated With:

Code: 200-W-22

Names: 200-W-22; 203-S/204-S/205-S Stabilized Area

Code: UPR-200-W-11

Classification: Accepted

Names: UPR-200-W-11; UPR-200-W-16; 218-W-1 Burial Ground Fire; UN-200-W-11

Reclassification: Consolidated (4/12/2004)

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1952

Description: This site was a result of a spontaneous fire in the 218-W-1 Burial Ground. It is also a duplicate of UPR-200-W-16, which was mapped correctly on the 218-W-1 Burial Ground.

Location: The unplanned release occurred in and surrounding one of the trenches located in the 218-W-1 Burial Ground. The trench where the fire occurred runs east and west and was roughly in the center of the burial ground. A fire in the dry waste, spread plutonium contamination to the north and south sides of the trench and outside the burial ground in the vicinity of 231-W (also known as 231-Z). The earliest document (HW-25227) described the release as "in the vicinity of the Z Facility" and also as "the area north of the Isolation Building" (231-W).

Release Description: A fire occurred on July 9, 1952 in the "200 West Burial Ground," causing a spread of plutonium contamination to the north of the Isolation Building. Spotty airborne plutonium contamination from this fire fell out of the smoke in the vicinity of the Z Facility. The fire was probably caused by spontaneous ignition of contaminated waste. A survey of the area found a maximum of 20,000 disintegrations inside the burial ground and 30,000 disintegrations outside the burial ground.

Related Sites/ Structures: This fire actually occurred at the 218-W-1 Burial Ground, and not immediately outside the PFP Building, as it was mis-mapped. The correct location (WIDS site UPR-200-W-16) was verified in Selby and Soldat (1958).

Waste Type: Chemicals

Waste Description: Eighteen air samples were collected near the 200 West Area Burial Ground during the fire of July 9. Only one of the samples showed detectable alpha activity, this being 2.6 by 2.6E+12 microcuries/cubic centimeter. A vegetation sample collected near the Meteorology Tower on the following day showed an activity density from alpha emitters of 1.5E+06 microcuries/gram. Resamples collected several days later did not confirm this result.

The Site Was Consolidated With:

Code: 218-W-1

Names: 218-W-1; Solid Waste Burial Ground #1; 200-W Area Dry Waste No. 001

Description: pond increased from 6 millireps/hour to 700 millireps/hour.

The acronym "rep" stands for Roentgen equivalent physical. One rep equals 95 ergs/gram (0.0095 joules/kilogram). One rep is roughly equivalent to 1 rad.

The Site Was Consolidated With:

Code: 207-S

Names: 207-S; 207-S Retention Basin; REDOX Retention Basin

Code: UPR-200-W-15

Classification: Accepted

Names: UPR-200-W-15; Liquid Release from REDOX to 207-S and 216-S-17 Pond; UN-200-W-15

Reclassification: Consolidated (1/25/2000)

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1952

Description: The unplanned release was a contaminated liquid release to the 207-S Retention Basin and the 216-S-17 Pond (REDOX Swamp). Both the pond and the basin are surface stabilized and posted as "Underground Radioactive Material". The release is not separately marked or posted.

Location: The 207-S Retention Basin is located inside the 200 West Area, southwest of 202-S. The 216-S-17 Pond is located southwest of 200 West Area, outside the perimeter fence.

Release Description: In October 1952, a steam coil failure in the REDOX "D-12" Waste Concentrator caused gross contamination of process cooling water, the 207-S Retention Basin, and the swamp area outside of the 200 West Area (216-S-17). Dose rates at the swamp up to 2 Rad per hour were recorded. A dike was constructed to maintain a constant water level.

Process Description: The 216-S-17 Pond was the only pond receiving REDOX process cooling water when the release occurred. The pond was used from 1951 to 1954 and was taken out of service because it exceeded contamination limits.

Related Sites/Structures: The release is associated with the REDOX facility (202-S), the 207-S Retention Basin, and the 216-S-17 Pond.

Waste Type: Steam Condensate

Waste Description: According to the October 1952 monthly report, fission product activity was detected in the 207-S Retention Basin and at the edge of the 216-S-17 Pond. Measurements taken of dry sand at the periphery of the pond were as high as 2200 millireps/hour (CP window open) and 80 millirads/hour (CP window closed).

The acronym "rep" stands for Roentgen equivalent physical. One rep equals 95 ergs/gram (0.0095 joules/kilogram). One rep is roughly equivalent to 1 rad.

The Site Was Consolidated With:

Code: 207-S

Names: 207-S; 207-S Retention Basin; REDOX Retention Basin

Code: UPR-200-W-16

Classification: Accepted

Names: UPR-200-W-16; Fire at 218-W-1 Burial Ground

Reclassification: Consolidated (5/6/2004)

Type: Unplanned Release

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1952

Description:

Location: The unplanned release occurred in and surrounding one of the trenches located in the 218-W-1 Burial Ground. The trench where the fire occurred runs east and west and is roughly in the center of the burial ground. A fire in the dry waste spread plutonium contamination to the north and south sides of the trench and outside the burial ground in the vicinity of 231-W (also known as 231-Z).

Release Description: A fire in the Dry Waste Burial Ground occurred on July 9, 1952, spreading alpha contamination from waste boxes. A survey of the area found a maximum of 20,000 disintegrations inside the burial ground and 30,000 disintegrations outside the burial ground.

Related Sites/ Structures: This fire occurred in the 218-W-1 Burial Ground.

Waste Type: Ash

Waste Description: A fire occurred in the 200 West Area Dry Waste Burial Ground on July 9, 1952. Surveys after the fire did not reveal any contamination spread to personnel or equipment. However, appreciable alpha contamination was found on the ground. The maximum reading was 200,000 disintegrations per minute in the burial ground and 30,000 disintegrations outside the burial ground. The burial trench contained cardboard boxes used to dispose of dry waste such as rags, paper, gloves, etc. Procedures limit the amount of plutonium to 5 grams per box, although most boxes contained less than one gram of plutonium. It was estimated that less than 500 grams of plutonium would have been present in the burial trench at the time of the fire.

The Site Was Consolidated With:

Code: 218-W-1

Names: 218-W-1; Solid Waste Burial Ground #1; 200-W Area Dry Waste No. 001

Code: UPR-200-W-17	Classification: Accepted
Names: UPR-200-W-17; Contamination Spread form 241-TX-106 Pump Removal; UN-200-W-17	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1952
Status: Inactive	End Date: 1/1/1952

Description: The release occurred inside the tank farm fence. The tank farm is surrounded with a chain link fence and radiological warning signs. The release is not separately marked or posted.

Location: The release occurred inside the 241-TX Tank Farm fence, extending southward from the 241-T-106 Tank to the 244-TXR Vault area and northward from 241-TX-106 to the 241-TX-114 Tank.

Release Description: On September 12, 1952, contamination spread in the 241-TX Tank Farm during the removal of a temporary process waste pump from the 241-TX-106 Tank. Waste was being transferred from 241-TX-106 to 241-TX-114 Tank via an overground line. The contamination on a pump seal was not sufficiently removed or packaged prior to moving the assembly, affecting the ground, personnel, and vehicles at the job site. Adverse wind conditions developed before the contamination could be totally removed or fixed, which caused the contamination spread to enlarge.

Waste Type: Chemicals

Waste Description: Contamination consisted of cerium, cesium, nobelium, ruthenium, strontium, and zirconium. After the wind had subsided, the southern area of the 241-TX tank farm was found to be contaminated generally up to 6,000 c/m with isolated spots up to 50,000c/m. The "major construction zone" immediately south of the 241-TX area had lesser amounts of contamination up to 2000c/m with a maximum of 35,000 c/m detected. Less than 1 g of solvent was dispersed

by the wind.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-18

Classification: Accepted

Names: UPR-200-W-18; Liquid Release to 216-U-9

Reclassification: Consolidated (1/25/2000)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date:

Description: WIDS site UPR-200-W-18 has been reclassified based on documentation that verified it was a DUPLICATE of UPR-200-W-139. Other documentation verified that WIDS site UPR-200-W-139 was located within the boundary of the larger site of 216-U-9 Ditch and has been consolidated into that site. Future updates and closeout information will only be added to 216-U-9 Ditch. This site will no longer be updated.

Location: The site is located in the 200 West Area.

Release Description: In September 1953, contamination from an unknown source was detected in the 216-U-9 Ditch.

Related Sites/ Structures: The site is associated with the 216-U-9 Ditch.

Waste Type: Soil

Waste Description: The waste was unknown contamination of the 216-U-9 ditch.

The Site Was Consolidated With:

Code: 216-U-9

Names: 216-U-9; U Swamp-S Swamp Ditch; 216-U-6

Code: UPR-200-W-21

Classification: Accepted

Names: UPR-200-W-21; Process Line Cave-in at 241-TX-154 Diversion Box; UN-200-W-21; UN-216-W-36

Reclassification: Consolidated (12/7/2004)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1953

Description: The release affected an area between 221-T and 222-T. This area is currently covered with shotcrete and posted with Underground Radioactive Material signs. A single post and sign marks the approximate location where the release occurred.

Location: The release occurred at the 241-TX-154 Diversion Box, located east of 221-T.

Release Description: A cave-in occurred above a process line near the 241-TX-154 Diversion Box causing an area of contamination on both sides of the diversion box, between 221-T and 222-T. The reported dose rate was 25 rad per hour at a distance of eight inches. More than one contamination release occurred at this site (UPR-200-W-38).

Related Sites/ Structures: The release is associated with the 241-TX-154 Diversion Box and UPR-200-W-38.

Waste Type: Process Effluent

Waste Description: The release consisted of T Plant process waste with a maximum dose rate of 25 rad per hour at a distance of 20 centimeters (8 inches).

The Site Was Consolidated With:

Code: UPR-200-W-38

Names: UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C; UN-200-W-38; UPR-200-W-160

Code: UPR-200-W-24

Classification: Accepted

Names: UPR-200-W-24; Release from the 244-UR Vault; UN-200-W-24
Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1953

Description: The release was a fan shaped contamination spread from the 244-UR Vault extending southeast across Camden Avenue and 16th Street. The release occurred in 1953. No visual evidence or posting related specifically to this release currently exists.

Location: The release originated from the 244-UR vault located inside the 241-U Tank Farm fence and extended to the southeast, across Camden Avenue to the 207-U Retention Basin area.

Release Description: On April 30, 1953, a contamination spread was caused by a violent chemical reaction in the 002 Blending Tank of the 244-UR Vault. The incident occurred when metal waste supernate was being pumped from the 241-U-109 Tank into the 002-UR Blending Tank inside the 244-UR Vault. Pressure built up from the waste reacting with acid in the 002 tank and was suddenly relieved through a riser. A geyser of liquid was seen rising 9 meters (30 feet) above the vault cover blocks, persisting for approximately 30 seconds. Five people in the area were found to be contaminated with maximum contamination levels of 4,000 counts per minute. Wind (estimated at 20 miles per hour) blew the contamination in a southeast direction beyond the tank farm fence and across the road (Camden Avenue). Ground surface contamination varied from 35 rad per hour at the point of origin (on the 244-UR cover blocks) inside the tank farm, diminishing to 500 counts per minute 300 meters (1,000 feet) away, outside the tank farm.

Process Description: Uranium metal waste supernate was being pumped from the 109-U tank to the 002-UR blending tank prior to being fed into 221-U for continuation in the Tri butyl Phosphate separations process

Waste Type: Chemicals

Waste Description: Waste included metal waste supernate combined with nitric acid, with readings varying from 35 rad/hour at the source of the contamination to a few hundred counts per minute at a distance of 305 meters (1,000 feet) from the source.

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-26

Classification: Accepted

Names: UPR-200-W-26; Contamination Spread During Burial Operation
Reclassification: Consolidated (5/6/2004)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1953

Description: The release is not marked or posted. All the inactive 200 West Area burial grounds are marked and posted Underground Radioactive Material. Only portions of the railroad tracks are currently posted with radiological signs. No specific location or maps are included in the Radiation Incident Investigation Report to indicate where the contamination was found.

Location: Contamination was identified in the railroad burial ground and along the railroad tracks.

Release Description: On November 27, 1953, a box of used connectors was removed from 221-T and buried in the railroad burial garden. While unloading the box from the flatcar, the box lid was dislodged and contamination was spread to the flatcar and to the surrounding ground. Before the contamination had been removed, a sudden strong wind resulted in additional contamination spread. More contamination was discovered when a comprehensive traverse survey was made of the burial garden and adjacent areas, the T plant railroad spur, and (following discovery of previously unsuspected railroad contamination) the main railroad line between the burial garden and REDOX. The Radiation Incident Investigation report did not include any recommendations for reducing the contamination at the burial ground.

Related Sites/ Structures: This release is probably associated with the 218-W-1A Burial Ground, near T Plant.

Waste Type: Chemicals

Waste Description: A comprehensive traverse survey was made of the burial garden and adjacent areas, the T plant railroad spur, and (following discovery of previously unsuspected railroad contamination) the main railroad line between the burial garden and Reduction Oxidation (REDOX). Survey results were as follows: general particulate contamination in and near the burial garden with spots up to 600 mrep/hour (uncorrected for source size) at the surface; numerous spots along the T plant spur of similar levels, with one spot of 15 rep/hour at surface; general particulate contamination in large areas to the southeast and southwest of the burial garden; and numerous spots on both sides of the main railroad line to REDOX having dose rates up to 2 rep/hour (uncorrected for source size) at surface. Highest concentrations of particles (greater than one particle per square yard) were found along the main line west of U plant and west of the powerhouse, and in a large area southwest of the burial garden. Analysis of three spots of contamination, taken from (1) the area southwest of the burial garden, (2) from the T plant spur, and (3) the main line near U plant, revealed the activity to be greater than 95% ruthenium.

The Site Was Consolidated With:

Code: 218-W-1A

Names: 218-W-1A; Equipment Burial Ground #1; 200-W Area Industrial Waste Burial Ground #1

Code: UPR-200-W-27

Classification: Accepted

Names: UPR-200-W-27; Duplicate of UPR-200-W-29; Transfer Line Leak at 23rd and Camden; UN-200-W-27; UN-216-W-5

Reclassification: Consolidated (4/12/2004)

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date:

Description: This is a DUPLICATE of UPR-200-W-29, which occurred on November 15, 1954 at the corner of 23rd and Camden Avenue.

Location: The site is located at the southeast corner of the intersection of Camden Street and 23rd Street.

Release Description: The release was caused by the failure of an un-encased first-cycle waste line from T Plant, which resulted in a cave-in, run-off of solution, and high ground-surface dose rates.

Waste Type: Process Effluent

Waste Description: The release was approximately 3800 liters (1000 gallons) of first-cycle process waste from T Plant. (This is a duplicate of UPR-200-W-29)

The Site Was Consolidated With:

Code: UPR-200-W-29

Names: UPR-200-W-29; 23rd and Camden Line Break; Transfer Line Leak; UN-200-W-27; UN-200-W-29; UN-216-W-5; UPR-200-W-27

Code: UPR-200-W-30 **Classification:** Accepted

Names: UPR-200-W-30; 216-S-12; UN-200-W-30 **Reclassification:** Consolidated (1/25/2000)

Type: Trench **Start Date:**

Status: Inactive **End Date:**

Description: WIDS site UPR-200-W-30, has been reclassified based on documentation that verified it was a DUPLICATE of 216-S-12. Future updates and closeout information will only be added to 216-S-12. This site will no longer be updated. The site was surrounded with a light chain and "Underground Radioactive Material" signs. A concrete marker post was labeled 216-S-12. The surface was sand and gravel with no vents or evidence of subsidence.

Location: The site was located northeast of the 202-S building, north of the 291-S stack.

Release Description: Early in July 1954, the REDOX stack was flushed and approximately 75,700 liters (20,000 gallons) of flush water was drained into a pit 6.1 meters (20 feet) wide, 27.4 meters (90 feet) long and 3 meters (10 feet) deep situated in the northeast corner of the REDOX exclusion area. An estimated five curies of beta particle emitters and two to three curies of gamma particle emitters, predominantly ruthenium and zirconium-niobium, were disposed of here and covered with several feet of clean soil. The approximate coordinates are: N-34965 and W-73384.

Process Description: The site was a single-use liquid waste disposal pit used for 291-S stack flush water.

Related Sites/Structures: The site was associated with the 291-S Stack and 216-S-12. The excavation was described as a 6.1 meters (20 feet) wide by 27.4 meters (90 feet) long by 3 meters (10 feet) deep pit near the northeast corner of the REDOX stack.

Waste Type: Water

Waste Description: The site received 68,100 liters (18,000 gallons) of flush water from the 291-S (REDOX) Stack. The water contained ammonium nitrate (600 kilograms). The material contained an estimated five curies of beta particle emitters and two to three curies of gamma particle emitters that were predominantly ruthenium and zirconium-niobium. Potential contaminants of concern include cobalt-60, cesium-137, strontium-90, plutonium-239/240, and uranium-238.

The Site Was Consolidated With:

Code: 216-S-12

Names: 216-S-12; 291-S Stack Wash Sump; REDOX Stack Flush Trench; UPR-200-W-30

Code: UPR-200-W-34 **Classification:** Accepted

Names: UPR-200-W-34; Overflow of the 216-S-10 Ditch; UN-200-W-34 **Reclassification:** Consolidated (1/19/2000)

Type: Unplanned Release **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The site is an unplanned release resulting from an overflow of the 216-S-10 Ditch. The site is

Description: contaminated to a maximum of 100 millirad/hour. The site was cleaned by removing the cartons to the proper burial trench and decontaminating the pit

The Site Was Consolidated With:

Code: 218-W-4C

Names: 218-W-4C; Dry Waste No. 004C

Code: UPR-200-W-40

Classification: Not Accepted

Names: UPR-200-W-40; 216-T-30; Line Break Near 241-TX-154; UN-200-W-40; UPR-200-W-160; UPR-200-W-38

Reclassification: None

Type: Unplanned Release

Start Date: 1/1/1955

Status: Inactive

End Date: 1/1/1955

Description: This site code is recommended for deletion because it is a duplicate of UPR-200-W-38 and UPR-200-W-160. UPR-200-W-38 has been selected to be the 'surviving' site code for this incident.

Location: The spill occurred in 200 West Area, southeast of the 221-T Building between the 241-TX-154 Diversion Box and the 241-TX-302C Catch Tank.

Release Description: On December 30, 1955, highly radioactive waste was spilled on the ground. The release consisted of highly radioactive liquid waste due to failure of an underground line during a waste transfer from the 241-TX-302C Catch Tank. A pool of liquid waste with a high dose rate was identified on the surface near the 241-TX-302 Catch Tank (December 30, 1955). It was estimated that several thousand gallons of "metal" waste and rain water had been released to the ground.

Waste Type: Process Effluent

Waste Description: Several thousand gallons of primarily metal waste and rainwater. RHO-CD-673 estimated 19,000 liters (5026 gallons). Other reference documents estimated 7520 liters (2000 gallons). The waste was high in salt and is neutral to basic. High beta/gamma levels were recorded, up to 100 rads/hour at 0.3 meters (1 foot) above the liquid.

The Site Was Consolidated With:

Code: UPR-200-W-38

Names: UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C; UN-200-W-38; UPR-200-W-160

Code: UPR-200-W-42

Classification: Accepted

Names: UPR-200-W-42; Contamination found at 2706-S; UN-200-W-42

Reclassification: Consolidated (7/19/2004)

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: This site is located within the UPR-200-W-41 surface stabilized area. In 1996, the 2706-S shack was still standing, but the release site was not separately marked or posted. The railroad track adjacent to 202-S had been covered with clean dirt. The section of covered track from the fence to the first gravel road intersection is posted as an Underground Radioactive Material area.

Location: In 1957, contamination was found in and around the railroad shack (2706-S) near the REDOX facility.

Release On February 3, 1957, an unusually high radiation background was noticed by two operators on

Description: a routine supply check in the railroad shack (2706-S) north of REDOX. The shack was evacuated and radiation monitoring was immediately called. A follow up survey revealed contamination on the papered floor to 3,200 millirad/hour. Spotty contamination to 500 millirad/hour was found on the snow outside of the shack by the south exit, near the 202-S Canyon Building, and toward the telephone and railroad tracks. The cause of the contamination is unknown.

Related Sites/ Structures: The site is associated with the REDOX railroad cut and UPR-200-W-41.

Waste Type: Chemicals

Waste Description: The floor of the shack was contaminated with beta/gamma with readings to 500 millirads/hour on the snow outside of the shack and beta/gamma with readings to 3,200 millirads/hour on the papered floor inside the shack.

The Site Was Consolidated With:

Code: UPR-200-W-41

Names: UPR-200-W-41; Railroad Contamination; REDOX Railroad Cut Contamination; UN-200-W-41

Code: UPR-200-W-45

Classification: Accepted

Names: UPR-200-W-45; Burial Box Collapse

Reclassification: Rejected (6/18/2008)

Type: Unplanned Release

Start Date: 1/1/1957

Status: Inactive

End Date:

Description: This release is no longer able to be visually identified. The release is not marked or posted. Based on the date of the release and a sketch included in HW-54636, it is assumed to be associated with 218-W-2A Burial Ground.

Location: Airborne contamination was spread from a 200 West Burial Ground and covered an estimated 10 square kilometers (4 square miles) in and around the 200 West Area.

Release Description: On November 6, 1957, a burial box containing ruthenium contaminated process equipment from REDOX collapsed and released contamination throughout 200 West Area. The incident presumably occurred after the first bucket of dirt was dropped on the burial box lid in the burial ground at 0800 hours. A cloud of contamination was released and spread outside the burial ground. Skin and/or personal clothing contamination to twelve Chemical Processing Department employees occurred. Fifteen vehicles were also contaminated at the time of the incident, 5 of which were contaminated on the tires only. The cause of the contamination spread was believed to be thermal convection currents coming from around the contaminated equipment and becoming airborne. The heaviest contamination spread to the south and in subsequent days the contamination spread throughout the area by high winds. The half life of ruthenium-106 is 372.5 days.

Related Sites/ Structures: Based on the date of the release and a sketch included in HW-54636, it is assumed to be associated with 218-W-2A Burial Ground. 218-W-2A was active in 1957. The adjacent railroad track was used to transport large pieces of contaminated equipment.

Waste Type: Chemicals

Waste Description: Collapse of wooden burial box containing ruthenium contaminated process equipment from Reduction Oxidation (REDOX) during burial operations in a 200 West Area Burial Ground. Extensive surveys revealed ground contamination of 5 to 100 particles per 0.09 square meter (5 to 100 particles per square foot). A majority of the readings were from 10,000 to greater than 80,000 counts per minute, with a maximum of 1,100 millirads/hour.

Status: Inactive **End Date:** 1/1/1958

Description: The release site is not currently marked or posted. The area where this release had been located in 1958 was surface stabilized in 1992.

Location: A contamination spread caused an oval shaped area of ground that extended southward from the diversion box and included 10th Street and the south end of the 207-S Retention Basin.

Release Description: A contamination spread from the 241-S Diversion Box occurred on September 15, 1958. It contaminated the ground around the diversion box and an oval shaped area from the diversion box extending southward and includes the south end of the 207-S Retention Basin.

Waste Type: Process Effluent

Waste Description: Contaminated particulates from the diversion box contaminated a large area south of the tank farm.

The Site Was Consolidated With:

Code: UPR-200-W-51
Names: UPR-200-W-51; UPR-200-W-52; Release from 241-S Diversion Box; UN-200-W-51

Code: UPR-200-W-53 **Classification:** Accepted

Names: UPR-200-W-53; Burial Box Collapse **Reclassification:** Consolidated (5/6/2004)

Type: Unplanned Release **Start Date:** 1/1/1959

Status: Inactive **End Date:**

Description: The release site is not separately marked or posted.

Location: The major portion of the contamination was spread about 101 hectares (250 acres) extending in an easterly direction from the 218-W-2A Burial Ground to within 275 meters (300 yards) of the east perimeter fence of the 200 West Area. Spotty particulate contamination was also detected outside of the 200 West Area perimeter fence.

Release Description: On January 8, 1959, a burial box containing REDOX cell jumpers collapsed during backfilling operations at the burial grounds and spread fission product contamination generally eastward covering about 101 hectares (250 acres) in 200 West Area. Ten people received low-level skin and personal clothing contamination and thirteen government-owned vehicles and two railroad diesel engines were also contaminated. One private vehicle was contaminated. Contamination levels ranged from 50 millirads/hour at the burial site to 60,000 counts per minute at T-Plant. Readings up to 400 counts per minute were obtained east of the 200 West Area fence.

Waste Type: Equipment

Waste Description: The release contained fission product (ruthenium-106) with beta/gamma readings that ranged from 50 millirads/hour at the burial site to 60,000 counts/minute at T Plant and readings east of the 200 West Area fence at 400 counts/minute.

The Site Was Consolidated With:

Code: 218-W-2A
Names: 218-W-2A; Equipment Burial Ground #2; Industrial Waste No. 02A

Code: UPR-200-W-59 **Classification:** Accepted

Names: UPR-200-W-59; Contaminated Liquid Released to 216-S-16P **Reclassification:** Consolidated (1/25/2000)

Type: Unplanned Release **Start Date:** 1/1/1965

Status: Inactive **End Date:** 1/1/1965

Description: The site is a liquid unplanned release to the 216-S-16 Pond (WIDS site code 216-S-16P), and has been consolidated with that pond. The pond has been surface stabilized and posted as an "Underground Radioactive Material" area. The release is not separately marked or posted.

Location: The 216-S-16 Pond is located southwest of the 200 West area outside the perimeter fence.

Release Description: On September 26, 1965, a leak occurred in the 2D column feed tank (F-1) cooling coil. Process effluent entered the cooling water from the coil and was transported from REDOX to the 216-S-16 Pond. The maximum dose rate found at the water edge of the #1 pond lobe inlet was 190 millirads/hour. The release was promptly detected by a radiation monitor.

Process Description: Process cooling water and steam condensate was routinely discharged to the 216-S-16 pond from the REDOX facility.

Related Sites/ Structures: The release is associated with the REDOX facility (202-S) and the 216-S-16 Pond.

Waste Type: Process Effluent

Waste Description: Beta/gamma radiation with a maximum dose rate of 190 millirads/hour was measured at the 216-S16 Pond #1 Pond (lobe) inlet .

The Site Was Consolidated With:

Code: 216-S-16P
Names: 216-S-16P; REDOX Pond #2; 202-S Swamp #1; 202-S Swamp and Ditch

Code: UPR-200-W-62 **Classification:** Accepted

Names: UPR-200-W-62; Duplicate of UPR-200-W-97; Line Leak at 23rd and Camden; UN-200-W-62; UN-216-W-5 **Reclassification:** Consolidated (12/7/2004)

Type: Unplanned Release **Start Date:** 1/1/1966

Status: Inactive **End Date:**

Description: The area has been stabilized with gravel. It is surrounded with Underground Radioactive Material signs.

Location: The incident occurred at the corner of Camden Avenue and 23rd Street in 200 West Area.

Release Description: On May 4, 1966, contaminated liquid waste leaked from a ruptured transfer line and came to the ground surface during transfer of second-cycle waste (bismuth phosphate) from the 241-T-107 Tank to the 242-T evaporator feed tank. Liquid ran from the site of the leak and spread over an area about 2 yards (1.83 meters) wide and 40 yards (36.58 meters) long. Surface dose rates ranged from 20 to 5000 millirads/hour. The cause of the rupture is listed in the radiation occurrence report as faulty supervisor judgment. The same line that failed in 1954 was mistakenly tested in 1966, causing liquid waste to surface again.

Related Sites/ Structures: The site is a duplicate of UPR-200-W-97. The site is associated with UPR-200-W-29 because a repeat release from the same broken transfer line (documented in UPR-200-W-29 in 1954) occurred again in 1966.

Waste Type: Chemicals

Waste Description: Contaminated second-cycle waste consisting of bismuth phosphate, with readings from 20 to 5,000 millirads/hour.

The Site Was Consolidated With:

One Site was Consolidated with:**Code:** UPR-200-W-97**Names:** UPR-200-W-97; Transfer Line Leak; UN-200-W-97; UN-216-W-5

Code: UPR-200-W-68**Classification:** Accepted**Names:** UPR-200-W-68; Road Contamination; UN-200-W-68**Reclassification:** Rejected (7/28/2008)**Type:** Unplanned Release**Start Date:** 1/1/1972**Status:** Inactive**End Date:****Description:** The release is not physically marked or posted.**Location:** Contamination was found near the intersection of Dayton Avenue and 13th Street in 200 West Area.**Release Description:** On February 8, 1972, beta-gamma contamination was found on the blacktop at the intersection of Dayton Avenue and 13th Street during a routine survey of 200 West Area roadways. Initial surveys revealed two spots on the roadway to a maximum of 4.5 rads/hour at 5.1 centimeters (2 inches). Extensive surveys made on the following shift discovered a stretch of road of about 30.5 meters (100 feet) with spotty contamination of 5,000 to 80,000 counts per minute (exclusive of previously-mentioned spots) on 13th Street and several spots ranging from 5,000 to 20,000 counts per minute on Dayton Avenue. One Hanford Patrol vehicle (HO-1A 2564) had 10,000 counts per minute in the left rear fender well (which was promptly cleaned). The cause of the contamination was not conclusively determined. The most likely source of the contamination was dripping from an earlier transport of temperature probes from 241-SX Tank Farm to the burial ground.**Waste Type:** Chemicals**Waste Description:** Beta/gamma contamination with readings from 5,000 to 80,000 counts/minute was found.**Description:** Initial surveys revealed two spots to a maximum of 4.5 rads/hour at 5.1 centimeters (2 inches). Assumed to be from tank farm equipment being transported to burial ground.

Code: UPR-200-W-69**Classification:** Accepted**Names:** UPR-200-W-69; Railroad Contamination; UN-200-W-69**Reclassification:** Rejected (5/13/2008)**Type:** Unplanned Release**Start Date:** 1/1/1973**Status:** Inactive**End Date:****Description:** The contamination was identified in 1973. The area was bladed and released from Radiation Zone status in 1974. This Unplanned Release is no longer marked or posted.**Location:** Contamination was identified north and northeast from the 204-S Unloading Station and between the 204-S railroad spur and the REDOX railroad cut.**Release Description:** On March 2, 1973, a contamination status survey starting at the 204-S Unloading Station led to the discovery of a beta-gamma contamination spread north and northeast of the station. Numerous spots of ground contamination of 2,000 to 50,000 counts per minute were noted with infrequent spots of 20 to 100 millirads/hour. A spot measuring 5,000 millirads/hour was discovered near the railroad gate, outside the radiation zone. Inside the zone, the sump pit was found contaminated from 1,000 to 5,000 millirads/hour and the grating from the sump that was stacked nearby measured to 800 millirads/hour. The survey was extended outside the REDOX exclusion fence where several spots of 5,000 to 100,000 counts per minute (20 to 40 millirads/hour uncorrected) were detected between the 204-S railroad spur and the REDOX

Release Description: On April 4, 1978, contaminated coyote feces were found while soil samples were being collected for the Environmental Surveillance Program. Radioisotopic analyses were performed on samples of the feces. Apparently, the coyotes had eaten mice which had gained entry into medium or high level radioactive waste contamination systems. Many possible source areas exist in 200 West Area.

Waste Type: Animal Waste

Waste Description: The waste contained plutonium-239, americium-241, cerium-144, europium-155, and strontium-90 with beta/gamma readings to 40,000 counts/minute and alpha readings to 55,000 counts/minute.

Code: UPR-200-W-79	Classification: Accepted
Names: UPR-200-W-79; Contamination Spread at 241-Z; UN-200-W-79	Reclassification: Consolidated (5/14/2004)
Type: Unplanned Release	Start Date: 1/1/1978
Status: Inactive	End Date:

Description: Alpha contamination was spread inside and outside of the 241-Z Sump radiation zone fence. The area was decontaminated and is no longer marked or posted. It occurred in the graveled and concrete area around the 241-Z Building.

Location: The release occurred at the 241-Z area, south of the 234-5Z building, and inside the 234-5Z exclusion fence.

Release Description: On October 6, 1978, contamination was detected due to the failure of the pH line at the 241-Z Sump. During replacement of steam valves and lines at the 241-Z Sump D-7 and D-8 sample cabinets, Radiation Monitoring detected alpha contamination in excess of 40,000 disintegrations per minute on an out of service pH control line behind the D-8 sample cabinet. Other locations which were contaminated in excess of 40,000 disintegrations per minute included the concrete pad under the D-7 and D-8 sample cabinets, and the steam line to the sample cabinets. Ground contamination of a five-foot square dirt area under the pH meter lines and another five-foot square dirt area north of the D-7 and D-8 sample cabinets outside of the 241-Z Sump radiation zone fence was detected. Alpha contamination was detected up to 2,000 disintegrations per minute under the pH lines and up to 500 disintegrations per minute outside the fence area. The apparent cause of the contamination was the failure of the pH line due to normal deterioration. The line had not been used or worked on for many years.

Related Sites/ Structures: The area is associated with UPR-200-W-75.

Waste Type: Process Effluent

Waste Description: Alpha contamination with readings from 500 to 2,000 disintegrations per minute was detected behind the 241-Z "D-8" sample cabinet. Alpha contamination in excess of 40,000 disintegrations per minute was detected on the pH line, concrete pad, soil and steam line.

The Site Was Consolidated With:

Code: 241-Z
Names: 241-Z; 241-Z Sump; 241-Z Tank Farm; 241-Z Tank Pit; 241-Z Treatment and Storage System; 241-Z Treatment and Storage Tanks; 241-Z-D-4; 241-Z-D-5; 241-Z-D-7; 241-Z-D-8

Code: UPR-200-W-80	Classification: Accepted
Names: UPR-200-W-80; 241-S/SX Contamination	Reclassification: Consolidated (6/13/2002)

The Site Was Consolidated With:**Code:** 218-W-3A**Names:** 218-W-3A; Dry Waste No. 003A

Code: UPR-200-W-85**Classification:** Accepted**Names:** UPR-200-W-85; Radioactive Spill from Multipurpose Transfer Box; UN-200-W-85; UN-216-W-85**Reclassification:** Rejected (7/28/2008)**Type:** Unplanned Release**Start Date:** 1/1/1982**Status:** Inactive**End Date:** 1/1/1982**Description:** The site where UPR-200-W-85 occurred is a concrete pad west of the 2706-T building. A 1998 site visit found a new equipment decontamination and waste handling building (2706-TA) has been built on this concrete pad. The concrete pad was sealed with an epoxy coating. The building entry is posted as FCA-2706-002. The release site is not marked or posted.**Location:** UPR-200-W-85 occurred west of the 2706-T Building, which lies northwest of the 221-T Canyon Building in the 200 West Area.**Release Description:** In April 1982, a multi-purpose transfer box was moved from the 221-T railroad cut to the cement pad behind the 2706-T Building. While parked on the pad, liquid was observed dripping from the box. The apparent cause of the leak was a weld failure on the outside sheathing covering the concrete shell. Contamination levels up to 100,000 counts per minute were found on the ground. The contamination was cleaned up at the 2706-T pad area. The railroad track from the 2706-T Building to the 221-T railroad cut was surveyed and no contamination was detected.**Related Sites/ Structures:** UPR-200-W-85 was associated with a concrete pad behind the 2706-T Building, and the railroad tracks between the 2706-T Building and the 221-T railroad cut.**Waste Type:** Process Effluent**Waste Description:** The contents of the multi-purpose box is not known. The radiological reading on the spill was 100,000 counts per minute beta/gamma.

Code: UPR-200-W-86**Classification:** Accepted**Names:** UPR-200-W-86; Contaminated Pigeon Feces at 221-U and 204-S; UN-200-W-86; UN-216-W-86**Reclassification:** Rejected (1/3/2008)**Type:** Unplanned Release**Start Date:** 1/1/1981**Status:** Inactive**End Date:** 1/1/1981**Description:** No physical posting or markers currently identify this unplanned release.**Location:** Contamination was found around 221-U Building and the 204-S Waste Unloading Facility.**Release Description:** In 1981, contaminated pigeon feces were found at several facilities in 200 West Area. The largest amount of contaminated bird feces, as well as the highest levels of contamination, were found at 221-U and near 204-S. The source of the contamination was determined to be the contaminated water accumulating in the 204-S tank basin. The contamination that prompted this occurrence report (81-72) was found and reported on October 27, 1981.**Related Sites/ Structures:** The release is mainly associated with the 204-S facility and 221-U.

Process Description: Uranyl nitrate was routinely transported from PUREX in 200 East Area to 224-U in 200 West Area in tanker trucks.

Related Sites/Structures: UPR-200-W-88 was associated with a section of roadway inside the 200 West main gate, the intersection of Route 3 and Route 4N.

Waste Type: Chemicals
Waste Description: The waste had beta and gamma contamination with readings from 300 to 650 counts per minute.

Code: UPR-200-W-89 **Classification:** Not Accepted

Names: UPR-200-W-89; Radioactive Contamination Southwest of 236-Z Building; UN-200-W-89; UN-216-W-89 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:** 1/1/1985

Description: The spill site was decontaminated and released by April 4, a few days after it occurred on March 29, 1985. The site was an area of asphalt outside the 236-Z Building. The release site is not marked or posted.

Location: The release site was a 3 foot (0.92 meter) area of asphalt at the southeast corner of the 236-Z Building inside the Z Plant fence.

Release Description: A fork-lift operator transported three recycled containers from Vault 236 to burial boxes located at the southeast corner of the 236-Z Building. While placing the fork-lift platform on the ground, a recycled container slid off and tipped over.

Related Sites/Structures: UPR-200-W-89 was associated with the 236-Z Building and Vault 236.

Waste Type: Chemicals
Waste Description: The waste contained alpha contamination with readings up to 50,000 disintegrations per minute.

Code: UPR-200-W-90 **Classification:** Accepted

Names: UPR-200-W-90; Radioactive Contamination South of 236-Z Building; UN-200-W-90; UN-216-N-90 **Reclassification:** Rejected (5/14/2004)

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:** 1/1/1985

Description: Radioactive contamination was immediately removed to background levels. The release was to six personnel moving a box of contaminated pipes and affected an area of ground outside of the 236-Z Building. The area is not marked or posted.

Location: UPR-200-W-90 occurred in an area approximately 1,000 feet (300 meters) outside of the 234-5Z Building and south of the 236-Z Building in the 200 West Area.

Release Description: Six employees and an area of ground were contaminated during the transport and loading of pipe sections into a burial box. Apparently, while lifting the second load into the box, the plastic that covered the pipe was ruptured.

In September 1953, the dose rate in the basin rose to 2 rad per hour. In 1954, the contaminated concrete basin was filled with soil to prevent the contamination from spreading.

Process Description: Process cooling water and stem condensate was routinely discharged to the 207-S Retention Basin before being sent to other waste disposal sites.

Related Sites/ Structures: The site is associated with the 202-S facility and the 207-S Retention Basin.

Waste Type: Process Effluent

Waste Description: The basin has been contaminated with approximately 10 curies of fission products.

The Site Was Consolidated With:

Code: 207-S

Names: 207-S; 207-S Retention Basin; REDOX Retention Basin

Code: UPR-200-W-100

Classification: Accepted

Names: UPR-200-W-100; 105-TX to 118-TX Process Line Leak; UN-200-W-100; UN-216-W-8

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1954

Status: Inactive

End Date: 1/1/1954

Description: The release occurred inside the 241-TX Tank Farm. The tank farm is surrounded with a chain link fence and has been stabilized with gravel. The release is not separately marked or posted.

Location: The location of this Unplanned Release is difficult to define due to discrepancies in reference documentation. The most reliable reference, ARH-2757, places the release inside the 241-TX Tank Farm fence, east of the 241-TX-105 tank.

Release Description: First cycle waste was discovered leaking from a waste transfer line in November 1954. The maximum dose rate was 4.5 rad per hour at a distance of 1.2 meters (4 feet). The liquid release covered an area of approximately 30 by 38 meters (100 by 125 feet).

Related Sites/ Structures: UPR-200-W-100 is associated with the 241-TX-105 and 241-TX-108 tanks and the 241-TX Tank Farm.

Waste Type: Process Effluent

Waste Description: The release consisted of first-cycle, high-salt, neutral to basic waste containing fission products with a maximum dose rate of 4.5 rad per hour at a distance of 1.2 meters (4 feet). The waste contained approximately 10 curies of fission products.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-104

Classification: Accepted

Names: UPR-200-W-104; 216-U-10 Pond Leach Trench; U Pond Fingers; UN-216-W-14

Reclassification: Consolidated (1/25/2000)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: Radioactive Material" warning signs. The leach trenches were stabilized along with the 216-U-10 Pond. The AC-540 markers at the ends of the trenches are labeled 216-U-10 and URM. This site has been consolidated with the 216-U-10 Pond.

Location: The release site runs northwest from the northeast corner of the 216-U-10 Pond.

Process Description: The trench was dug to provide additional leaching area for 216-U-10 Pond overflow water.

Related Sites/ Structures: UPR-200-W-104 was associated with the 216-U-10 Pond.

Waste Type: Process Effluent

Waste Description: A trench was dug to give additional leaching surface for overflow water from the 216-U-10 Pond. There is low-level, beta/gamma and alpha activity in the bottom of the leach trench. Contaminants of concern include cesium-137, americium-241, cerium-144 and potassium-40.

The Site Was Consolidated With:

Code: 216-U-10

Names: 216-U-10; 216-U-10 Pond; 231 Swamp; U Swamp; 216-U-1

Code: UPR-200-W-105 **Classification:** Accepted

Names: UPR-200-W-105; 216-U-10 Pond Leach Trench; UN-216-W-15 **Reclassification:** Consolidated (1/25/2000)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site is historically identified as an unplanned release. The site is posted with "Underground Radioactive Material" warning signs. The leach trenches were stabilized along with the 216-U-10 Pond. The AC-540 markers at the ends of the trenches are labeled 216-U-10 and URM. This site has been consolidated with the 216-U-10 Pond

Location: The trench runs directly east from the center of the east side of the 216-U-10 Pond.

Process Description: The trench was dug to provide additional leaching area for 216-U-10 Pond overflow water.

Related Sites/ Structures: UPR-200-W-105 was associated with the 216-U-10 Pond.

Waste Type: Process Effluent

Waste Description: A trench was dug to provide additional leaching surface for overflow water from the 216-U-10 Pond. There is low-level, beta/gamma and alpha activity in the bottom of the leach trench. Potential contaminants of concern include cesium-137, strontium-89, strontium-90, potassium-40, and europium-154.

The Site Was Consolidated With:

Code: 216-U-10

Names: 216-U-10; 216-U-10 Pond; 231 Swamp; U Swamp; 216-U-1

Code: UPR-200-W-106 **Classification:** Accepted

Names: UPR-200-W-106; 216-U-10 Pond Leach Trench; UN-216-W-16 **Reclassification:** Consolidated (1/25/2000)

Type: Unplanned Release **Start Date:**

Status: Inactive**End Date:****Description:** The site is historically identified as an unplanned release. The release site is posted with "Underground Radioactive Material" warning signs. The leach trenches were stabilized along with the 216-U-10 Pond. The AC-540 markers at the ends of the trenches are labeled 216-U-10 and URM. This site has been consolidated with the 216-U-10 Pond.**Location:** The trench runs east from the east side of the 216-U-10 Pond and is south of the UPR-200-W-105 Trench.**Process Description:** The trench was dug to provide additional leaching area for 216-U-10 Pond overflow water.**Related Sites/** UPR-200-W-106 was associated with the 216-U-10 Pond.**Structures:****Waste Type:** Process Effluent**Waste Description:** A leach trench was dug to provide additional leaching surface for overflow water from the 216-U-10 Pond. There is low-level, beta/gamma and alpha activity in the ground surface on the bottom of the leach trench. Potential contaminants of concern include cesium-137, strontium-89, strontium-90, and potassium-40.**The Site Was Consolidated With:****Code:** 216-U-10**Names:** 216-U-10; 216-U-10 Pond; 231 Swamp; U Swamp; 216-U-1

Code: UPR-200-W-107**Classification:** Accepted**Names:** UPR-200-W-107; 216-U-10 Pond Flood Plain; UN-216-W-17**Reclassification:** Consolidated (1/25/2000)**Type:** Unplanned Release**Start Date:** 1/1/1952**Status:** Inactive**End Date:** 1/1/1957**Description:** The site is historically identified as an unplanned release. The release site is a flood plain that was incorporated into the 216-U-10 Pond stabilization area. The pond is posted with "Underground Radioactive Material" signs. The flood plain cannot be distinguished from the backfilled pond. This site has been consolidated with the 216-U-10 Pond.**Location:** The site was located south of the 216-U-10 Pond in the flood plain near the corner of 13th Street and Dayton Ave.**Process Description:** The flood plain was a low area that provided additional leaching area for 216-U-10 Pond overflow water.**Related Sites/** UPR-200-W-107 was associated with the 216-U-10 Pond.**Structures:****Waste Type:** Process Effluent**Waste Description:** The waste water that inundated the site came from the 216-U-10 Pond which received the waste water from the 216-U-14 Ditch, the 216-Z-11 Ditch, and cooling water from the 401-SX Building condensers in the 241-SX Tank Farm. Potential contaminants of concern include cesium-137, strontium-90, and potassium-40.**The Site Was Consolidated With:****Code:** 216-U-10**Names:** 216-U-10; 216-U-10 Pond; 231 Swamp; U Swamp; 216-U-1

Waste Description: The waste was 26,500 liters (7000 gallons) of interface crud, activated charcoal, and diatomaceous earth, containing about one curie of fission products.

The Site Was Consolidated With:

Code: 216-U-15

Names: 216-U-15; 388-U Tank Dumping; U-152 Interface Crud Burial; UN-200-W-158; UN-216-W-10; UPR-200-W-125

Code: UPR-200-W-126	Classification: Accepted
Names: UPR-200-W-126; Contamination Release Inside 241-TX Tank Farm	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1975
Status: Inactive	End Date: 1/1/1975

Description: The tank farm that is surrounded by a chain link fence and is posted with radiological warning signs, including Underground Radioactive Material, Radiation Area, Fixed Contamination Area, Radiological Buffer Area and Radioactive Material Area. The release site is not separately marked or posted.

Location: UPR-200-W-126 occurred at the 241-TX-153 Diversion Box, inside the 241-TX Tank Farm, southeast of the 241-TX-101 Tank.

Release Description: While removing old gaskets on an over-ground transfer line from the 241-TX-153 Diversion Box to the 241-TX-101 Tank, a pipe fitter and an operator became contaminated. As the gaskets were being placed into a plastic bag, spotty contamination became airborne. Both employees had approximately 2000 counts per minute on their faces.

Related Sites/Structures: UPR-200-W-126 is associated with the 241-TX-153 Diversion Box and the 241-TX-101 Tank.

Waste Type: Process Effluent

Waste Description: Spotty contamination became airborne. The employee received contamination levels reading up to 2,000 counts per minute.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-127	Classification: Accepted
Names: UPR-200-W-127; Liquid Release from 242-S Evaporator to the Ground; UN-200-W-127	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1980
Status: Inactive	End Date: 1/1/1980

Description: The site was a pool of liquid that was covered with clean dirt located inside the tank farm fence, on the east side of the evaporator building. In June 2001, a gravel pile was noted near where the release occurred, but the area is not specifically marked or separately posted.

Location: UPR-200-W-127 occurred on the east side of the 242-S Evaporator Building, inside the 241-S Tank Farm fence.

Release Description: At approximately 5:30 on the morning of February 26, 1980, a radiation area detector (Area Radiation Monitor) sounded and notified the building operator of an elevated dose rate in the

241-S Tank Farm. The operator left the building to investigate and found a pool of liquid on the ground surface, on the east side of the 242-S Evaporator building. The operator immediately left the area. A Radiation Monitor arrived and determined that high radiation levels existed all around the building. Barricades were set up to restrict access to the area.

Related Sites/ UPR-200-W-127 is associated with the 241-S Tank Farm.

Structures:

Waste Type: Process Effluent

Waste The release was an unknown liquid associated with the 241-S Tank Farm.

Description:

The Site Was Consolidated With:

Code: 200-W-96

Names: 200-W-96; Contaminated Soil at 241-S/SX/SY Tank Farm

Code: UPR-200-W-128	Classification: Accepted
Names: UPR-200-W-128; Contamination Release Inside 241-U Tank Farm	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1971
Status: Inactive	End Date: 1/1/1971

Description: The release occurred inside the tank farm fence, adjacent to the 241-U-103 Tank. The release is not separately marked or posted.

Location: UPR-200-W-128 occurred at the 241-U-103 Tank, located inside the 241-U- Tank Farm.

Release Description: The Radiation Incident Report states that an employee cut through a waste line, located in the 241-U-103 Tank pit. The incident resulted in contamination of two employees and their surroundings. Their skin, clothes and hair were contaminated with levels ranging from 3000 to 20,000 counts per minute.

Related Sites/ UPR-200-W-128 is associated with the 241-U-103 Tank and the 241-U Tank Farm.

Structures:

Waste Type: Process Effluent

Waste The release consisted of liquid waste contaminated with fission products.

Description:

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-129	Classification: Accepted
Names: UPR-200-W-129; Contamination Release Inside 241-TX Tank Farm	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1971
Status: Inactive	End Date: 1/1/1971

Description: The personnel contamination incident release occurred inside the fenced 241-TX Tank Farm. The release site is not separately marked or posted.

Location: UPR-200-W-129 occurred at the 241-TX-113 Pump Pit, located inside the 241-TX Tank Farm.

Release Description: While leak testing a new jumper assembly, an employee closed a valve in a pump pit that caused a caustic solution to spray up through the pit cover. The employee's chin and left forearm were contaminated with radiation levels up to 30,000 counts per minute.

Related Sites/ Structures: UPR-200-W-129 is associated with the 241-TX Tank Farm and the 241-TX-113 Tank Pump Pit.

Waste Type: Process Effluent

Waste Description: The waste was a caustic radioactive solution. The contamination on the employee had readings up to 30,000 counts per minute.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-132	Classification: Accepted
Names: UPR-200-W-132; 241-UR-151 Diversion Box Release; UN-200-W-132	Reclassification: Consolidated (6/3/2002)
Type: Unplanned Release	Start Date: 1/1/1956
Status: Inactive	End Date: 1/1/1956

Description: The release occurred inside the fenced 241-U Tank Farm. The area around the 241-UR-151 Diversion Box has been covered with shotcrete. The release is not separately marked or posted.

Location: UPR-200-W-132 occurred inside the 241-U Tank Farm, near the 241-UR-151 Diversion Box and the 254-UR Electrical Substation (adjacent to the 271-U Control Building).

Release Description: An operator working inside the 271-UR Control Building noticed an elevated background reading and an off scale reading on the panel board. He notified his supervisor, shut down operating equipment and evacuated the building. While leaving, he and a co-worker noticed a gurgling sound and observed two pools of liquid forming around the 241-UR-151 Diversion Box. One pool was approximately 1.8 meters by 6 meters (6 by 20 feet), the other was approximately 4.5 meters by 9 meters (15 by 30 feet). Dose rates taken from 3 meters (10 feet) away from the pools measured up to 10 rad per hour beta/gamma and 500 millirem per hour gamma.

Related Sites/ Structures: UPR-200-W-132 is associated with the 241-UR-151 Diversion Box, the 254-UR Electrical Substation, and the 241-U Tank Farm.

Waste Type: Process Effluent

Waste Description: The waste was feed solution for the tributyl phosphate uranium recovery process.

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-134	Classification: Accepted
Names: UPR-200-W-134; Improper Drum Burial at 218-W-3A	Reclassification: Rejected (6/30/2004)
Type: Unplanned Release	Start Date: 1/1/1975

Status: Inactive **End Date:** 1/1/1975

Description: The improper burial of a drum containing transuranic material occurred was at the 218-W-3A Burial Ground. The burial trench has been covered with clean soil. This Unplanned Release site is not separately marked or posted.

Location: UPR-200-W-134 occurred at the 218-W-3A Burial Ground, in the 200 West Area.

Release Description: A waste drum from the 325 building, labeled TRANSURANIC, was improperly buried and documented on Occurrence Report 38-75. It contained 18.6 grams of plutonium, 2466 grams of uranium and a total of 53 grams of fissile material.. The handling and storage of this material did not meet applicable standards. The drum was dumped into the burial trench and covered with several other loads of radioactive waste and approximately 2.4 meters (8 feet) of dirt.

Related Sites/ Structures: UPR-200-W-134 was associated with the 218-W-3A Burial Ground.

Waste Type: Barrels/Drums/Buckets/Cans

Waste Description: The transuranic waste in the drum contained 18.6 grams of plutonium, 2466 grams of uranium and a total of 53 grams (2 ounces) of fissile material.

The Site Was Consolidated With:

Code: 218-W-3A

Names: 218-W-3A; Dry Waste No. 003A

Code: UPR-200-W-137 **Classification:** Accepted

Names: UPR-200-W-137; 218-W-7; UN-200-W-137 **Reclassification:** Consolidated (4/12/2004)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: A vent from the vault is visible above the ground surface; the rest of the site is graveled and surrounded by yellow metal poles and a chain to mark the radiation zone.

Location: The site is located in the 200 West Area. It is in a vault east of the 222-S Building.

Process Description: The site received dry, packaged laboratory and sampler wastes from the 222-S Building.

The Site Was Consolidated With:

Code: 218-W-7

Names: 218-W-7; 222-S Vault

Code: UPR-200-W-139 **Classification:** Accepted

Names: UPR-200-W-139; UPR-200-W-18; Liquid Release to the 216-U-9 Ditch; UN-200-W-139 **Reclassification:** Consolidated (1/25/2000)

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:** 1/1/1954

Description: WIDS site UPR-200-W-139 was located within the boundary of the larger site of 216-U-9 Ditch and has been consolidated into that site. Future updates and closeout information will only be added to 216-U-9 Ditch. This site will no longer be updated. The site was an unplanned release into the eastern fork of the 216-U-9 Ditch. The eastern fork of the 216-U-9 Ditch was abandoned in 1954. Currently, the eastern fork of the ditch is not marked or posted. It has no chain barricades or radiation warning signs and is partially backfilled. There are no

posted.

Location: UPR-200-W-145 is located in the soil under and adjacent to the 241-SX-113 Tank, inside the 241-SX Tank Farm.

Release Description: The release occurred over time, as 56,800 liters (15,000 gallons) of REDOX high-level liquid process waste leaked from the 241-SX-113 Tank into the soil.

Related Sites/ Structures: UPR-200-W-145 is associated with the 241-SX-113 Tank.

Waste Type: Process Effluent

Waste Description: The waste consisted of REDOX high-level process waste, containing 8,000 curies of cesium-137.

The Site Was Consolidated With:

Code: 200-W-96

Names: 200-W-96; Contaminated Soil at 241-S/SX/SY Tank Farm

Code: UPR-200-W-146 **Classification:** Accepted

Names: UPR-200-W-146; 241-SX-115 Leak **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1958

Status: Inactive **End Date:** 1/1/1965

Description: The release is the soil under the 241-SX-115 Tank. The release is not separately marked or posted.

Location: UPR-200-W-146 occurred in the soil under and adjacent to the 241-SX-115 Tank, inside the 241-SX Tank Farm.

Release Description: UPR-200-W-146 occurred over time as 189,000 liters (50,000 gallons) of REDOX high-level liquid process waste leaked from the 241-SX-115 Tank into the surrounding soil.

Related Sites/ Structures: UPR-200-W-146 is associated with the 241-SX-115 Tank.

Waste Type: Process Effluent

Waste Description: The release consisted of high-level REDOX process waste, containing 40,000 curies (1.5E15) of cesium-137.

The Site Was Consolidated With:

Code: 200-W-96

Names: 200-W-96; Contaminated Soil at 241-S/SX/SY Tank Farm

Code: UPR-200-W-147 **Classification:** Accepted

Names: UPR-200-W-147; 241-T-103 Leak **Reclassification:** Consolidated (6/13/2002)

Type: Unplanned Release **Start Date:** 1/1/1973

Status: Inactive **End Date:**

Description: The release is the soil under the 241-T-103 Tank. It is not separately marked or posted.

Location: The release is located southeast of the 241-T-103 Tank, inside the 241-T Tank Farm.

Release In 1973, while monitoring wells were being drilled to assess the 241-T-106 tank leak,

Description: contamination was identified between monitoring wells 299-W10-116 and 299-W10-118. This contamination plume was determined to be from the 241-T-103 Tank. Subsequent investigations revealed that the leak resulted from a failed grout seal in a spare entry line to 214-T-103.

Related Sites/ Structures: UPR-200-W-147 is associated with the 241-T-103 Tank.

Waste Type: Process Effluent
Waste Description: In 1973, the release contained 1 microcurie/liter of ruthenium.

The Site Was Consolidated With:

Code: 200-W-93
Names: 200-W-93; Contaminated Soil at 241-T Tank Farm

Code: UPR-200-W-148	Classification: Accepted
Names: UPR-200-W-148; 241-T-106 Leak	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1973
Status: Inactive	End Date: 1/1/1973

Description: The release is the soil underneath and adjacent to the 241-T-106 Tank. The release is not separately marked or posted.

Location: The release is a contaminated soil plume located adjacent to the 241-T-106 tank, inside the 241-T Tank Farm.

Release Description: The release occurred during a routine tank filling operation. From January 1973 to April 4, 1973, the liquid level in 241-T-106 was stable at 61 centimeters (24 inches). On April 4, 1973, the contents of tank 241-T-107 began being transferred to 241-T-106. Liquid level readings were taken three times per shift during the transfer operations. When the pumping operation stopped on April 24, 1973, the liquid level reading was 445.5 centimeters (175.4 inches). Due to the tank cascading effect, the liquid level continued to rise after the pumping ended, with a maximum liquid level of 466.5 centimeters (183.7 inches) being recorded on April 25, 1973. The first routine, weekly liquid level measurement was taken on May 2, 1973 and recorded a level of 454.4 centimeters (178.9 inches). The liquid level was entered into the logbook. A week later, the routine measurement was recorded in the logbook at 442 centimeters (174 inches). On May 14, 1973 the weekly liquid level of 426.4 centimeters (167.9 inches) was recorded in the logbook. The shift supervisor did not review the logbook but did prepare a Tank Inventory Form and transmit it to the Process Control Group. Because Tank Inventory forms for the previous two weeks were missing, they could only compare the liquid level to the last form transmitted, which was for April 23, 1973 with a liquid level of 389.9 centimeters (153.5 inches), taken during the pumping operations. The missing data caused the diminishing tank levels to go unnoticed. By June 1, 1973, high readings were being identified in dry well 299-W10-51 and the routine weekly liquid level for June 4th was down to 378.9 centimeters (149.2 inches). On June 7, 1973 the tank data was reviewed and determined to be leaking. Emergency plans were made to pump the remaining liquid out of tank 241-T-106.

Process Description: This release occurred while waste was being transferred from the 241-T-107 tank to 241-T-106 tank (which is the last tank in the T-104, T-105, T-106 cascading tank series). Since 241-T-104 contained a large amount of solid salt cake, the waste was pumped from 241-T-107 to 241-T-105, which overflowed into 241-T-106.

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**Related Sites/
Structures:**

Waste Type: Process Effluent

Waste Description: At the time the release occurred, the tank contained waste with approximately 40,000 curies of cesium-137, 14,000 curies of strontium-90, 4 curies of plutonium, and various fission products.

The Site Was Consolidated With:

Code: 200-W-93

Names: 200-W-93; Contaminated Soil at 241-T Tank Farm

Code: UPR-200-W-149

Classification: Accepted

Names: UPR-200-W-149; 241-TX-107 Leak

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1977

Status: Inactive

End Date: 1/1/1977

Description: The release is the soil adjacent to the 241-TX-107 Tank. The release is not separately marked or posted.

Location: The release is located in the soil south of the 241-TX-107 Tank, inside the 241-TX-Tank Farm.

Release Description: Elevated radiation readings were recorded in dry wells 51-07-01, 51-03-12, 51-03-11, 51-07-18 and 51-03-01 during 1977 resulting in several Occurrence Reports to be issued. After extensive studies it was concluded that the source of the high-level activity detected in dry well 51-07-18 may have been liquid from the 241-TX-107 Tank.

**Related Sites/
Structures:** UPR-200-W-149 is associated with the 241-TX-107 Tank and Dry Well 51-07-18.

Waste Type: Process Effluent

Waste Description: Assuming the waste came from 241-TX-107, the release would contain bismuth phosphate metal waste, REDOX high-level waste, and evaporator bottoms from the 242-T Evaporator.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-150

Classification: Accepted

Names: UPR-200-W-150; 241-TY-103 Leak

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1973

Description: The release is the soil adjacent to the 241-TY-103 Tank. The release is not separately marked or posted.

Location: The release is located in the soil under and adjacent to the 241-TY-103 Tank, inside the 241-TY Tank Farm.

Release Description: In 1973, dry wells 52-03-06 and 52-03-03 recorded increases in radiation levels, indicating leakage from the 241-TY-103 Tank or the 241-TY-105 Tank. The exact date the leak began is difficult to determine.

**Related Sites/
Structures:** UPR-200-W-150 is associated with the 241-TY-103 Tank and the 52-03-06 and 52-03-03 Dry

Wells .

Waste Type: Process Effluent

Waste The waste contained in tanks 241-TY-103 and 241-TY-105 included 700 curies of cesium-137

Description: from bismuth phosphate process waste, PUREX organic wash waste, REDOX ion exchange waste, coating waste and evaporator bottoms.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-151

Classification: Accepted

Names: UPR-200-W-151; 241-TY-104 Leak

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1953

Status: Inactive

End Date: 1/1/1974

Description: The release site is the soil adjacent to the 241-TY-104 Tank. The release is not separately marked or posted.

Location: UPR-200-W-151 occurred in the soil under the 241-TY-104 Tank, inside the 241-TY Tank Farm.

Release Description: In 1974, the liquid level of the tank decreased more than 0.3 inch (0.77 centimeter), causing the integrity of the 241-TY-104 Tank to be questioned and the tank to become inactive. The leak has occurred over time with routine tank use.

Related Sites/ Structures: UPR-200-W-151 is associated with the 241-TY-104 Tank.

Waste Type: Process Effluent

Waste The tank contained REDOX ion exchange waste, PUREX organic wash waste, bismuth

Description: phosphate first-cycle waste, tributyl phosphate waste, and decontamination waste from the 241-TX and the 241-TY Tank Farms.

The Site Was Consolidated With:

Code: 200-W-94

Names: 200-W-94; Contaminated Soil at 241-TX/TY Tank Farm

Code: UPR-200-W-152

Classification: Accepted

Names: UPR-200-W-152; 241-TY-105 Leak

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1960

Status: Inactive

End Date: 1/1/1960

Description: The release is the soil adjacent to the 241-TY-105 Tank. The release is not separately marked or posted.

Location: UPR-200-W-152 occurred in the soil under the 241-TY-105 Tank, inside the 241-TY Tank Farm.

Release Description: Two dry wells, 52-03-05 and 52-03-06 showed slowing increasing radiological readings in 1974. The activity in these dry wells may be an indication of interstitial liquid seepage from the 241-TY-105 Tank. Occurrence Reports 74-101 and 74-102 were issued in June 1974 to document the findings.

Waste Type: Chemicals
Waste Description: The release consisted of bismuth phosphate metal waste and high-level supernatant waste, containing 20,000 curies of cesium-137.

The Site Was Consolidated With:

Code: 200-W-95
Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-155	Classification: Accepted
Names: UPR-200-W-155; 241-U-104 Leak	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1947
Status: Inactive	End Date: 1/1/1951

Description: The site is the soil under the 241-U-104 Tank. It is not separately marked or posted.
Location: The release site is soil under the 241-U-104 Tank, inside the 241-U Tank Farm.
Release Description: A rupture in the bottom of the tank was first detected in 1956, while attempting to install a heel jet pump. The installation could not be accomplished.

Related Sites/ Structures: UPR-200-W-155 is associated with the 241-U-104 Tank.

Waste Type: Chemicals
Waste Description: From 1947 to 1956, the tank held bismuth phosphate metal waste.

The Site Was Consolidated With:

Code: 200-W-95
Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-156	Classification: Accepted
Names: UPR-200-W-156; 241-U-110 Leak	Reclassification: Consolidated (6/13/2002)
Type: Unplanned Release	Start Date: 1/1/1946
Status: Inactive	End Date: 1/1/1975

Description: The tank farm is surrounded with a chain line fence and posted with radiological warning signs. The release is not separately marked or posted.
Location: The release is the soil adjacent to and underneath the 241-U-110 Tank, inside the 241-U Tank Farm.
Release Description: The tank release occurred over time. In 1975, surveillance of the 241-U-110 Tank indicated a slow drop in the liquid level. Over one month, the liquid level had dropped 0.5 inches (1.3 centimeters).

Related Sites/ Structures: UPR-200-W-156 is associated with Dry Well 60-10-07 and the 241-U-110 Tank.

Waste Type: Process Effluent
Waste Description: The release consisted of bismuth phosphate first-cycle waste and REDOX coating.

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-157

Classification: Accepted

Names: UPR-200-W-157; 241-U-112 Leak

Reclassification: Consolidated (6/13/2002)

Type: Unplanned Release

Start Date: 1/1/1969

Status: Inactive

End Date: 1/1/1969

Description: The 241-U Tank Farm is surrounded by a chain link fence and posted with radiological warning signs. The release is not separately marked or posted.

Location: UPR-200-W-157 is the soil adjacent to and underneath the 241-U-112 Tank, located inside the 241-U Tank Farm.

Release Description: The release occurred over time. Approximately 37,850 liters (10,000 gallons) of waste leaked into the soil from the 241-U-112 Tank.

Related Sites/ Structures: UPR-200-W-157 is associated with the 241-U-112 Tank.

Waste Type: Process Effluent

Waste Description: The release consisted of bismuth phosphate first-cycle waste and recycled waste from 241-U Tanks.

The Site Was Consolidated With:

Code: 200-W-95

Names: 200-W-95; Contaminated Soil at 241-U Tank Farm; Contamination Migration Beyond the 241-U fence

Code: UPR-200-W-159

Classification: Accepted

Names: UPR-200-W-159; Caustic Spill at Plutonium Finishing Plant; UN-200-W-159

Reclassification: Rejected (7/28/2008)

Type: Unplanned Release

Start Date: 1/1/1985

Status: Inactive

End Date: 1/1/1985

Description: The release site was the soil adjacent to the Plutonium Finishing Plant. The soil that was contaminated with sodium hydroxide was disposed of as hazardous waste. The site is not marked or posted.

Location: UPR-200-W-159 occurred in the soil adjacent to the Plutonium Finishing Plant, inside the facility security fence.

Release Description: UPR-200-W-159 occurred when an unknown amount of 50% aqueous sodium hydroxide, a corrosive liquid, was spilled to ground near the Plutonium Finishing Plant.

Related Sites/ Structures: UPR-200-W-159 was associated with the Plutonium Finishing Plant.

Waste Type: Chemicals

Waste Description: The release consisted of an unknown amount of 50% aqueous sodium hydroxide.

Code: UPR-200-W-160 **Classification:** Not Accepted

Names: UPR-200-W-160; UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1955

Status: Inactive **End Date:** 1/1/1955

Description: The area around the 241-TX-154 Diversion Box has been stabilized with shotcrete. This UPR is a duplicate of UPR-200-W-40 and UPR-200-W-38. UPR-200-W-38 is the site that will remain.

Location: The release location is the area around the 241-TX-154 Diversion Box and the 241-TX-302 Catch Tank, and between the 221-T Building and the 222-T Building, near section R-11 of 221-T.

Release Description: The release consisted of highly radioactive liquid waste due to failure of an underground line during a waste transfer from the 241-TX-302C Catch Tank. A pool of liquid waste with a high dose rate was identified on the surface near the 241-TX-302 Catch Tank (December 30, 1955). It was estimated that several thousand gallons of "metal" waste and rain water had been released to the ground. The area was backfilled, sprayed with tar, and posted as a radiation zone in 1956. During April and May 1968, the east side of the radiation zone was cut back a distance of 10 ft (3.0 m). Thin concrete cell cover blocks were leaned at a 60-degree angle against the side of the cut to shield the dose rates to acceptable levels.

Waste Type: Process Effluent

Waste Description: Several thousand gallons of primarily metal waste and rainwater. RHO-CD-673 estimated 19,000 liters (5026 gallons). Other reference documents estimated 7520 liters (2000 gallons). The waste was high in salt and is neutral to basic. Dose rates up to 100 rad per hour were recorded at a distance of 0.3 meters (1 foot) from the release pool.

The Site Was Consolidated With:

Code: UPR-200-W-38

Names: UPR-200-W-38; UPR-200-W-40; 216-T-30; Line Break at 241-TX-302C; UN-200-W-38; UPR-200-W-160

Code: UPR-200-W-163 **Classification:** Accepted

Names: UPR-200-W-163; Contaminated Vegetation at the 216-U-8 Pipeline (200-W-42-PL); UN-216-W-33 **Reclassification:** Consolidated (5/14/2004)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The release consisted of radiologically contaminated vegetation growing above the underground pipeline to the 216-U-8 crib (the pipeline is known as 200-W-42). The area is currently posted with Underground Radioactive Material signs.

Because the pipeline that is the source of this release is a separate WIDS site (200-W-42), and the remediation of the pipeline will include the soil above it, this UPR was consolidated into 200-W-42. A large portion of the pipeline was removed in 2006.

Location: The release site is located in the soil above the pipeline from the 224-U building to the 216-U-8 Crib. Posted Underground Radioactive Material areas are located on the north and south sides of 16th Street. The pipeline is west of Beloit Ave.

Release UPR-200-W-163 occurred over time, as leaking waste from the underground pipeline

Description: contaminated the soil. Growing vegetation absorbed some of the radioactive contaminants. Broken pieces of contaminated vegetation scattered in the wind and caused the size of the surface posted contamination area to be increased.

Process Description: The vitrified clay underground pipeline transferred U Plant waste to the 216-U-8 crib.

Related Sites/ Structures: UPR-200-W-163 is associated with the vitrified clay pipeline (200-W-42-PL) connecting the 216-U-8 Crib to the 224-U Building. The posted area over the pipeline on the north side of 16th Street was stabilized in October 2001.

Waste Type: Process Effluent

Waste Description: The waste in the pipeline consisted of process condensate from the 224-U Building. The waste was acidic.

The Site Was Consolidated With:

Code: 200-W-42

Names: 200-W-42; 200-W-42-PL; U Plant Radioactive Process Sewer from 221-U to 216-U-8 & 216-U-12 Crib

Code: UPR-300-7

Classification: Accepted

Names: UPR-300-7; Oil Spill at 384 Building; UN-300-7

Reclassification: Closed Out (8/24/1999)

Type: Unplanned Release

Start Date: 1/1/1972

Status: Inactive

End Date: 1/1/1972

Description: The release site was to the ground and concrete valve pits around the underground day tanks located behind the 384 Building (300 Area Powerhouse). The area is paved with asphalt. There is no visual evidence of a spill. Most of the spilled oil was contained in the underground, concrete pits that surround the day tanks. This site was closed out in conjunction with the North Process Pond.

Location: The release occurred on the north side of the 384 Powerhouse, adjacent to the day tanks, but a portion of the spill was sent to the North Process Pond. The day tanks and adjacent oil-contaminated soil have been removed.

Release Description: According to the incident report, the release was discovered at 6:45 am on August 7, 1972. There are two 60,560 liter (16,000 gallon), underground day tanks on the north side of the 384 Powerhouse. At the time of the release, one day tank was full and one day tank was empty. The operator was instructed to fill the empty tank, but failed to close the valve on the full tank and open the valve to the empty tank. Approximately 3,220 liters (850 gallons) of #6 fuel oil overflowed from the full day tank when the oil was transferred from the storage bunker. The spilled oil was retained in the concrete valve pits around the day tanks and in the soil between and around these two adjacent tanks. However, approximately 114 liters (30 gallons) of the total oil spilled flowed into the 384 Building drain trench through conduits constructed to carry oil pipes through the building foundation to the trench. This oil mixed with waste water and emptied into a sewer system that terminates in a sump located in the southeast corner of the basement of the 384 Building. A heavy scum of oil was observed on the surface of the sump. A sump pump normally lifted the water from the basement to the process sewer which flows to the north process pond (WIDS Site 316-2). Since the pump suction was at the bottom of the sump, an immediate check was made of the process pond. A significant scum of oil was visible in the fore bay of the first holding section of the pond. An estimated 38 liters (10 gallons) of oil was observed floating on the process pond.

Related Sites/ Structures: UPR-300-7 was associated with the day tanks (WIDS Site 300-223) behind the 384 Building,

Structures: the North Process Pond (WIDS Site 316-2) and WIDS Site 300 ASH PITS.

Waste Type: Oil

Waste Description: The release consisted of approximately 3,220 liters (850 gallons) of #6 fuel oil. An estimated 3,028 liters (800 gallons) were recovered in cleanup operations. Approximately, 114 liters (30 gallons) were conveyed to the powerhouse, of which (20 gallons) went to the ash pits and 38 liters (10 gallons) were observed at the process pond (WIDS Site 316-2). That would leave approximately 38 liters (10 gallons) that may have remained in the soil between the day tanks, the powerhouse facility, piping, the ash pits or process ponds. All values are approximate (as stated in the incident report).

Closure Info: 316-2, 618-12 and UPR-300-7 were addressed as a group. The information below documents information for the group of sites.

Sample analysis identified four "subareas" with results above cleanups standards. These areas were excavated. Surface sampling and sampling from test pits was also done.

Code:	UPR-300-13	Classification:	Accepted
Names:	UPR-300-13; Acid Neutralization Tank Leak East of 333 Building; UN-300-13	Reclassification:	Consolidated (2/12/1999)
Type:	Unplanned Release	Start Date:	1/1/1973
Status:	Inactive	End Date:	1/1/1973

Description: This waste site has been consolidated into the 618-1 Burial Ground waste site. The release site was the soil adjacent to the underground spent acid receiver tank that was located east of the 333 Building and adjacent to the 618-1 Burial Ground. The tank pit depth was 3.05 meters (10 feet) below grade. There is currently no visual evidence of the tank or this release. The 334-A Building was built on top of the area where the tank was removed.

Location: UPR-300-13 occurred adjacent to the underground spent acid receiver tank (WIDS Site 300-21) that had been located east of the 333 Building. The underground tank has been removed. The 334-A Building is now located at this location.

Release Description: The release occurred on July 31, 1973. A chemical operator noted that the liquid level in the 14,383 liter (3800 gallon) tank was below the normal pump suction level. It was known that the tank had been previously pumped down to the 4,542 liter (1200 gallon) heel on the morning of July 31, 1973. In the afternoon of the same day, 1805.45 liters (477 gallons) of liquid waste from the Zircaloy etching tank was added to the heel. In the afternoon of August 1, 1973, the process engineer investigated the tank plug and valve integrity. He found no problems, so he added water to the tank to recheck the possibility of a leak. In the morning of August 2, 1973 a water level check confirmed that 363.4 liters (96 gallons) of liquid had been lost. The test indicated a hole in the tank wall and that approximately 4,920.5 liters (1300 gallons) of liquid waste had been lost to the ground. Spent acid had leaked to the ground through a hole in a koroseal-lined mild steel receiving tank wall. The extent of contamination is not known. The acid receiving tank was isolated. Samples of the lost liquid (collected prior to the leak) were analyzed to characterize the contents of the spill. The sample results showed that 2015 kilograms (4432 pounds) of nitric acid, 44 kilograms (96 pounds) of fluoride, 217 kilograms (477 pounds) of copper and 1.4 kilograms (3 pounds) equivalent to 0.0005 curies of uranium were lost to the ground. 870 kilograms (1910 pounds) of caustic was added to the leaking tank and allowed to leak into the soil to neutralize the acid that had escaped into the ground. The leak rate of the tank was 582.9 liters (154 gallons) per hour.

Process Description: At the time of this release (1973), waste etch acid from the 333-N Fuel Fabrication process drained to an underground tank filled with limestone. The limestone was used to neutralize the acid. The tank had been in service since the start up of the 333 Building.

Related Sites/ Structures: UPR-300-13 was associated with the underground spent acid receiver tank (WIDS Site 300-21), the 333 Building (WIDS Site 300-32), and the 618-1 Burial Ground.

Waste Type: Process Effluent

Waste Description: The waste contained process acid that included 4,432 pounds (2,012 kilograms) of nitrate, 447 pounds (202.9 kilograms) of copper, and 3 pounds (1.4 kilograms) of uranium.

The Site Was Consolidated With:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: UPR-300-14

Classification: Accepted

Names: UPR-300-14; Acid Leak at 334 Tank Farm; UN-300-14

Reclassification: Consolidated (2/12/1999)

Type: Unplanned Release

Start Date: 1/1/1975

Status: Inactive

End Date: 1/1/1975

Description: This waste site has been consolidated into the 618-1 Burial Ground waste site. The release site was a limestone pit designed to neutralize spilled acid before the acid was released to the underlying ground.

Location: UPR-300-14 occurred at the 334 tank farm and traveled through a trench to an open-bottomed limestone pit (See WIDS Site 300-246) located over the 618-1 Burial Ground .

Release Description: On July 18,1975, a line break in the fill line to Tank No. 32 from the 23,000-liter (6,000 gallon) #3 high tank in the 334 tank farms caused the loss of 4,540 liters (1,200 gallons) of 93% sulfuric acid solution. The solution traveled through a concrete trench to a limestone pit that had been designed to neutralize spilled acid. The limestone pit drained to the soil in the 618-1 Burial Ground.

Process Description: A trench sump was installed below the 334 Tank Farm to collect solutions from chemical spills, including the elevated acid storage tanks, the safety showers, and rainwater, etc. The trench sump drained to an open limestone pit located about 6.1 meters (20 feet) east of the 334 Tank Farm. The limestone pit had an open bottom and drained to the 618-1 Burial Ground soil beneath the pit. The limestone pit was isolated after this unplanned release. The 334 Tank Farm pipe trench and sump were sealed from the drain line to the limestone pit and connected to the process sewer.

Related Sites/ Structures: The site is associated with the 334 Tank Farm and its sump trench, which is connected to the 333 East Pipe Trench (See WIDS Site 300-224) which drained to the Limestone Neutralization Pit and which in turn drained to the 618-1 Burial Ground.

Waste Type: Chemicals

Waste Description: The release consisted of 93% sulfuric acid.

The Site Was Consolidated With:

Code: 618-1

Names: 618-1; Solid Waste Burial Ground No. 1; 300 Area Burial Ground No. 1; 318-1

Code: UPR-300-18

Classification: Not Accepted

Names: UPR-300-18; Release at 321 Tank Farms; UN-300-18 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1962

Status: Inactive **End Date:** 1/1/1962

Description: On August 27, 1962, an employee was sprayed by a release from a low-level cesium-134 waste line.

Location: UPR-300-18 was located inside one of the 321 Tank Farms.

Release Description: The release occurred on August 27, 1962. In the process of removing a drain plug from a low-level cesium-134 waste line, a pipefitter received general protective clothing contamination up to 10,000 counts per minute (shoes 1,000 counts per minute and coveralls 10,000 counts per minute) when solution unexpectedly squirted out of the drain. The main valve had been turned off and the solution in the line was purportedly at near static pressure at the time of the release. The pipefitter immediately replaced the plug and prevented further contamination spread. The employee reported that he felt liquid strike his face and mouth. A whole body radiation survey detected contamination to the employee's coveralls and shoes but no skin contamination. A subsequent whole body count proved negative. A follow up inspection by operations personnel revealed that the main valve had failed to seat properly. The fault was corrected and the lines flushed of all foreign solid material. The amount released to the ground was not mentioned in the report.

Related Sites/ Structures: UPR-300-18 was associated with a drain plug from a low-level cesium-134 waste line.

Waste Type: Process Effluent

Waste Description: The Occurrence Report states that the waste line carried low-level cesium-134, but the emitter isotope was cesium-137.

Code: UPR-300-31 **Classification:** Not Accepted

Names: UPR-300-31; 300-31; UN-300-3 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This site is a duplicate of UPR-300-40 (See Site Comment Section).

Code: UPR-300-43 **Classification:** Accepted

Names: UPR-300-43; 300 Area Solvent Refined Coal Spill; UN-300-43 **Reclassification:** Rejected (9/22/1998)

Type: Unplanned Release **Start Date:** 1/1/1986

Status: Inactive **End Date:** 1/1/1986

Description: The site is an unplanned release to the soil adjacent to the 329 Building. All discolored soil was removed from the site. No occurrence report could be found for this site.

Location: The release occurred in the soil outside the 329 Building in the 300 Area.

Release Description: UPR-300-43 occurred when solvent refined coal was spilled to the ground. The spill was caused by failure of a corroded container.

Process Description: During the time of the oil crisis (1980s), the coal liquifaction process was developed to produce

an alternative fuel source. Full scale production pilot plants were developed to liquify coal through fractional distillation. Each of the pilot plants developed their own process for liquifying coal. Solvents were used to liquify the coal. Pacific Northwest Laboratory's (PNL's) task was to study the effects of fractional distillation on the genotoxic potential of solvent refined coal liquids. PNL received product material from six different source pilot plants. Samples that were taken from the source product were subjected to initial chemical analysis, chemical fractionation, and in vitro bioassay. The references listed describe the tests and the results.

Related Sites/ Structures: The UPR-300-43 was associated with the 329 Building.

Waste Type: Chemicals

Waste Description: The release consisted of solvent-refined coal (light fraction) that was spilled to the ground.

Code: UPR-300-44	Classification: Accepted
Names: UPR-300-44; Uranium Bearing Waste Etch-Acid Spill; 313 Building; UN-300-44	Reclassification: Consolidated (2/12/1999)
Type: Unplanned Release	Start Date:
Status: Inactive	End Date: 1/1/1985

Description: The release site was to the soil around a section of process sewer line. The information for this site has been incorporated into WIDS Site UPR-300-38. UPR-300-38 addresses the soil contamination under the 313 Building.

Location: UPR-300-44 occurred in a section of the underground process sewer line from the Uranium Recovery Area in the 313 Building.

Release Description: While a new extrusion press was being installed, a leak was discovered in a section of process sewer line. The leak had resulted in a discharge to the ground. The source of the leaking solution was unknown and it was unknown how long the leak had persisted. Spills in the 313 Uranium Recovery Area could have entered this line, resulting in ground disposal of hazardous substances.

Process Description: The 313 Building process sewer collected chemical waste solutions from throughout the chemical processing areas from the start of operations in the 313 Building. The waste solutions drained to the 300 Area ponds until the 1970s when process effluent improvement projects were begun to replace liquid waste discharges to the soil with collection and treatment processes. (See WIDS Site 313 URO).

Related Sites/ Structures: UPR-300-44 was associated with the 313 Building.

Waste Type: Process Effluent

Waste Description: The release consisted of wastewater and possibly uranium-bearing acid (nitric and sulfuric acid with uranium in solution) or waste-etch acid (nitric, hydrofluoric, and chromic acids with uranium, copper, and zirconium metals in solution) to the soil. The spill area was possibly contaminated with byproduct waste material.

The Site Was Consolidated With:

Code: UPR-300-38

Names: UPR-300-38; 313 Slab; Demolished 313 Building Foundation; Soil Contamination Beneath the 313

Building

Code: UPR-400-1 **Classification:** Accepted
Names: UPR-400-1; 400 Area Coolant Spill; UN-400-1 **Reclassification:** Rejected (12/3/1998)
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site was an unplanned release that occurred during the construction of FFTF. This site is located somewhere in a field that is now a vegetation-free, gravel-covered area shaped like a semicircle bordered by an asphalt-covered roadway and parking area. The specific location can not be identified. There is no occurrence report for the site.
Location: The site is located north of the 427 building and east of the FMEF cooling units.
Release Description: In February or March 1984, a solution consisting of approximately 189.3 liters (50 gallons) of 50% water and 50% ethylene glycol (aircraft de-icer mix) was spilled on the ground during construction.
Waste Type: Chemicals
Waste Description: The waste consisted of approximately 189.3 liters (50 gallons) of a coolant solution consisting of 50% water and 50% ethylene glycol.

Code: UPR-600-1 **Classification:** Accepted
Names: UPR-600-1; Contamination Spread at 618-10 Burial Ground; UN-600-1 **Reclassification:** Consolidated (2/24/1999)
Type: Unplanned Release **Start Date:** 1/1/1961
Status: Inactive **End Date:** 1/1/1961
Description: The release originated in the 618-10 Burial Ground. It contaminated the environment in the vicinity of the burial ground, extending 274 meters (300 yards) out from the burial ground fence, with radioactive particulates. The 618-10 Burial Ground has been surface stabilized and vegetated with grasses. The burial ground is fenced and posted as Underground Radioactive Material.
Location: UPR-600-1 occurred in the 618-10 Burial Ground and spread to an area extending approximately 274 meters (300 yards) outside the burial ground fence in the 600 Area.
Release Description: The unplanned release at the 618-10 Burial Ground was caused by a fire within a burial trench. The fire destroyed all flammable material in the affected trench. The fire spread radioactive particulates to the immediate environment. At a distance of 15 to 23 meters (50 to 75 feet) outside the burial ground fence, the particle concentration was approximately 20 particles per 9.3 square meters (100 square feet). Most particles measured in excess of 100,000 counts/minute. At a distance of 274 meters (300 yards) from the fence, the particle concentration was 3 particles per 9.3 square meters (100 square feet) ranging from 4,000 to 20,000 counts/minute. After the fire was extinguished, the trench was covered with dirt.

Related Sites/Structures: UPR-600-1 was associated with the 618-10 Burial Ground.

Waste Type: Chemicals
Waste Description: The waste consisted of approximately 200 boxes of contaminated materials.

Waste Type: Ash

Waste Description: The waste consisted of burned "CWS" filters and an unknown amount of other materials.

Description:

The Site Was Consolidated With:

Code: 618-10

Names: 618-10; 300 North Solid Waste Burial Ground; 318-10

Code: UPR-600-2

Classification: Accepted

Names: UPR-600-2; Contamination Spread at 618-10;
UN-600-2

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: Contamination from this incident was identified in a 1.5 meter (5 foot) radius around the burial receptacle in the 618-10 Burial Ground, an area in front of the burial ground access gate, and a spot in front of the 300 Area Powerhouse. The 618-10 Burial Ground has since been stabilized and revegetated. The burial ground is posted with Underground Radioactive Material signs.

Location: Contamination from UPR-600-2 was limited to an estimated 1.5-meter (5 foot) radius around the burial barrel in the 618-10 Burial Ground, an area in front of the burial ground access gate, and a spot on the road in front of the 300 Area Powerhouse.

Release Description: During a routine "milk can" burial, a contamination spread occurred at the 618-10 Burial Ground. An investigation resulted when the truck driver was found to be contaminated after completing the burial. A radiation survey was conducted from the 327 Building to the 618-10 Burial Ground. A spot of contamination was found in front of the 300 Area Powerhouse. Another area of contamination was found in front of the burial ground access gate. No contamination was found on the highway. A 1.5 meter (5 foot) radius around the burial receptacle was found to be contaminated to 80,000 counts per minute.

Related Sites/ Structures: UPR-600-2 was associated with the 618-10 Burial Ground and the 300 Area Powerhouse.

Waste Type: Chemicals

Waste Description: Contamination detected at the time of the release ranged from 60,000 to 80,000 counts per minute around the barrel in the 618-10 Burial Ground, 40,000 counts per minute in front of the 300 Area Powerhouse, and 80,000 counts per minute in front of the burial ground access gate.

The Site Was Consolidated With:

Code: 618-10

Names: 618-10; 300 North Solid Waste Burial Ground; 318-10

Code: UPR-600-3

Classification: Accepted

Names: UPR-600-3; Contamination Spread at 618-10

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: The release site was an area of soil around a burial barrel within the 618-10 Burial Ground. The release area was surface stabilized with the rest of the burial ground in 1983. The burial ground is fenced and posed as an Underground Radioactive Material area.

Location: The release site was approximately 56 square meters (600 square feet) of ground within the 618-

10 Burial Ground in the 600 Area.

Release Description: On September 4, 1963, an improper container was used to dispose of waste into the 618-10 Burial Ground. The lid of the container came off, causing dust to puff out of the barrel and onto the ground. An area approximately 56 square meters (600 square feet) was contaminated to 400 millirads/hour at 5 centimeters (2 inches). The truck and the driver were also slightly contaminated.

Related Sites/ Structures: UPR-600-3 was associated with the 618-10 Burial Ground.

Waste Type: Chemical Release

Waste Description: The waste consisted of radioactive dust that was improperly containerized.

The Site Was Consolidated With:

Code: 618-10

Names: 618-10; 300 North Solid Waste Burial Ground; 318-10

Code: UPR-600-4

Classification: Accepted

Names: UPR-600-4; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1964

Status: Inactive

End Date: 1/1/1964

Description: The release consisted of an area of soil contamination in the 618-11 Burial Ground. The release site was surface stabilized along with the rest of the burial ground in 1983.

Location: UPR-600-4 contaminated an estimated 93 square meters (1,000 square feet) in the 618-11 Burial Ground in the 600 Area.

Release Description: A trailer truck hauling two waste casks from the 327 Building attempted to deposit waste into the vertical waste barrels at the 300 Wye Burial Ground. As a waste can was dropped into a burial barrel, a "blowback" of radioactive material occurred, contaminating of four employees, the vehicle and approximately 90 square meters (1000 square feet) of ground in the burial ground. Soil contamination levels averaged 10,000 counts per minute. It was also discovered that three of the waste cans had fallen from the cask and were lodged in the drop chute of the second cask. It was determined that the slide on the bottom of the cask had not been properly secured and the waste had vibrated into the drop chute during transit.

Related Sites/ Structures: UPR-600-4 was associated with the 618-11 Burial Ground.

Waste Type: Chemicals

Waste Description: The release consisted of radioactive waste from the High-Level Radiochemistry Facility. The

Description: waste had readings of up to 10,000 counts per minute.

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-5

Classification: Accepted

Names: UPR-600-5; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Description: counts per minute to 200 millirads/hour.

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-7

Classification: Accepted

Names: UPR-600-7; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1965

Status: Inactive

End Date: 1/1/1965

Description: The release site was an area of ground in the 618-11 Burial Ground. The 618-11 Burial Ground was surface stabilized in 1983. The burial ground is fenced and posted as Underground Radioactive Material.

Location: The release occurred in an area of soil in the 618-11 Burial Ground.

Release Description: During the burial of a wooden box containing a highly contaminated waste filter from the 327 Building, an employee became contaminated. The truck was positioned at the burial trench and the truck bed was tilted. However, the box did not slide off the truck. The employee left the truck cab and noticed clouds of dust emitting out of the box seams, causing spotty contamination in the immediate vicinity and levels of 6,000 counts per minute on the employee.

Related Sites/ Structures: UPR-600-7 was associated with the 618-11 Burial Ground.

Waste Type: Chemicals

Waste Description: The waste was generated at the high-level radiochemistry building (327 Building). The waste consisted of a dust from a highly contaminated filter.

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-8

Classification: Accepted

Names: UPR-600-8; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1967

Status: Inactive

End Date: 1/1/1967

Description: The release contaminated an area of soil in the 618-11 Burial Ground. Following the release, area was covered with a layer of clean gravel. The 618-11 Burial Ground was surface stabilized in 1983. The burial ground is fenced and posted as Underground Radioactive Material

Location: UPR-600-8 contaminated soil in the 618-11 Burial Ground.

Release Description: UPR-600-8 occurred on April 7, 1967 during routine burial operations at the 300 Wye Burial Ground (618-11). Waste from the 327 building was being deposited into a vertical waste receptacle through a chute from a cask. The contamination spread occurred as a result of air backup from the waste barrel or loose contamination blown from the release gate of the cask. At the time of the burial, the operation was being conducted from the upwind side of the cask. At the moment the waste was dropped into the chute, the wind reversed in a strong gust, causing the airborne spread of contaminants. An area of ground approximately 2.7 square meters (30 square feet) was contaminated to a maximum of 100,000 counts per minute. Three

employees and the transport truck were also contaminated.

Related Sites/ Structures: UPR-600-8 was associated with the 618-11 Burial Ground.

Waste Type: Chemicals

Waste Description: The waste consisted of, in-part, aluminum rupture cans that had been inspected in the High-Level Radio Chemistry Facility (327 Building). The fact that the airborne contaminant was a "fairly fresh fission product" indicates that it was picked up by the cans during transfer operations through "A" cell in the 327 Building.

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-9

Classification: Accepted

Names: UPR-600-9; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1967

Status: Inactive

End Date: 1/1/1967

Description: The contamination spread was a large fan-shaped area extending in a northeast direction from the burial site. The contamination inside the burial ground was covered with gravel. Contamination outside the fence was turned under and the site was released from radiation zone status. The entire 618-11 Burial Ground was surface stabilized in 1983. An area outside the fence known as the "Wind Row" site was released from radiological control in 1972. The rows of soil are still visible, but the area is not marked or posted.

Location: UPR-600-9 contaminated a fan-shaped area that extended northeast from the dump chute in the 618-11 Burial Ground.

Release Description: On April 14, 1967, during routine burial operations in the 618-11 Burial Ground, a piece of waste became wedged in the truck chute causing an airborne release of contamination.

Related Sites/ Structures: UPR-600-9 is associated with the 618-11 Burial Ground and the adjacent "Wind Row" site (600-21 alias UPR-600-22).

Waste Type: Chemicals

Waste Description: The release consisted of airborne contamination from corroded aluminum rupture cans and pieces of an N Reactor safety rod from the 327 Building.

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-10

Classification: Accepted

Names: UPR-600-10; Contamination Spread at 618-11

Reclassification: Consolidated (2/24/1999)

Type: Unplanned Release

Start Date: 1/1/1963

Status: Inactive

End Date: 1/1/1963

Description: The release contaminated an area of soil in the northeast corner of the 618-11 Burial Ground. The 618-11 Burial Ground was surface stabilized in 1983. The burial ground is fenced and posted as Underground Radioactive Contamination.

Location: Barrel 327-2 in the 618-11 Burial Ground.

Release Description: On September 30, 1963, a contamination release occurred during a routine, high level waste burial at the 300 Wye (618-11) Burial Ground. A "Milk Pail" container that was externally contaminated with a significant amount of loose, highly radioactive material, was discharged into the 327-2 vertical waste barrel (caisson) causing a contamination spread. Although the wind was less than 16 kilometers per hour (10 miles per hour), an area of contamination was identified that measured approximately 36 square meters (400 square feet) around the barrel. The cask truck had smearable contamination measuring 180 millirads/hour inside the left rear wheel, 40 millirads/hour on the drop chute and 10 millirads/hour on the top of the cask. The truck was sprayed with a fixing agent and taken to 200 West Area for decontamination. The maximum contamination reading on the ground was 1.4 rads/hour.

Related Sites/ Structures: UPR-600-10 was associated with the 618-11 Burial Ground.

Waste Type: Chemicals

Waste Description: The release consisted of high-level beta and gamma contamination with readings of up to 1.4 rads/hour at 7.6 centimeters (3 inches).

The Site Was Consolidated With:

Code: 618-11

Names: 618-11; Y Burial Ground; 300 Wye Burial Ground; 318-11

Code: UPR-600-17

Classification: Accepted

Names: UPR-600-17; 600 Area Patrol Boat Spill; UN-600-17

Reclassification: Rejected (9/11/2000)

Type: Unplanned Release

Start Date: 1/1/1986

Status: Inactive

End Date: 1/1/1986

Description: The site of the release is a concrete boat ramp and the shoreline, periodically flooded as the Columbia River rises daily and seasonally.

Location: The release occurred at the patrol boat refueling area just south of 100N Area on the Columbia River.

Release Description: Gasoline was spilled inside a patrol boat during refueling operations, and gasoline was discharged from the boat to the shoreline. The release occurred on August 17, 1986.

Waste Type: Oil

Waste Description: The release consisted of 268.4 liters (70.9 gallons) of gasoline.

Description:

Code: UPR-600-18

Classification: Accepted

Names: UPR-600-18; Tank Truck Gasoline Spill; UN-600-18

Reclassification: Rejected (10/1/1997)

Type: Unplanned Release

Start Date: 1/1/1987

Status: Inactive

End Date: 1/1/1987

Description: The site is an area where petroleum products leaked to the soil from a fuel delivery truck accident. The release occurred April 16, 1987 9:00 AM and resulted in the spill of CERCLA reportable materials. Appropriate notifications were made to the Department of Energy,

noted in the list. Lime sulfur: Foliar application as a fungicide only."

Code: WESF **Classification:** Accepted
Names: WESF; 225-B; Waste Encapsulation and Storage Facility **Reclassification:** None
Type: Storage **Start Date:** 1/1/1974
Status: Active **End Date:**

Description: The Waste Encapsulation and Storage Facility is a TSD site within the 225-B Building, which is on the west side of 221-B Building (B Plant).

Location: The building addition is located on the west end of the 221-B canyon building. It was built on top of the 216-B-60 crib.

Process Description: Two areas within WESF are permitted in the Hanford Facility Dangerous Waste Part A Permit Application (Rev. 0, 12/19/97) to store capsules and/or unencapsulated salts. Pool cells number 1 through 8 and 12, located on the west side of the 225-B building, provide underwater storage for radiological protection from cesium-137 and strontium-90 capsules. Process cells A through G, in the south side of the 225-B Building, provide interim dry storage of capsules and/or unencapsulated salts. The maximum process design capacity for miscellaneous storage in pool cells 1 through 8 and 12 is approximately 4,484 liters (1,184.55 gallons) and for process cells A through G is approximately 56 liters (14.79 gallons).

Related Sites/ Structures: The WESF is within the 225-B Building, which is attached to the west side of the 221-B Building (B Plant).

This Site has the Following SubSites:

Code: WESF:1
Names: WESF:1; Waste Encapsulation and Storage Facility Tank 100 System; WESF TK-100 System

Code: WESF:1 **Classification:** Accepted
Names: WESF:1; Waste Encapsulation and Storage Facility Tank 100 System; WESF TK-100 System **Reclassification:** None
Type: Storage **Start Date:**
Status: Active **End Date:**

Description: The TK-100 System was used as a catch tank to transfer low-level radioactive liquid waste from WESF through B-Plant to the Double-Shell Tank System. Closure activities were completed in September 1998 and included sampling and analysis of the piping rinsate, removing the tank to a permitted TSD facility (B Plant Complex), removing any waste residues from the vault, and decontaminating and visually inspecting the vault. Piping (floor drains and sump) rinsate was sampled on July 14 and 15, 1998, and analyzed for 1,1,1-tri-chloroethane. All eight samples (KON378 through KON385) had less than detectable levels of 1,1,1-trichloroethane.

The SubSite is Part Of:

Code: WESF
Names: WESF; 225-B; Waste Encapsulation and Storage Facility

Code: WRAP **Classification:** Accepted
Names: WRAP; Waste Receiving and Processing Facility **Reclassification:** None

Status: Inactive**End Date:** 1/1/1968**Description:** The site consisted of the 105-B Reactor Building complex which originally included the inactive plutonium production reactor block with associated shielding and controls, an irradiated fuel storage basin, and contaminated portions of the reactor building. See the subsites for detailed information.**Release Description:** It is suspected that the irradiated fuel storage basin leaked for a number of years prior to deactivation. The leak rate was small, and the location of the leak was never identified. The soil has not been characterized, but the radionuclide inventory is estimated to be low when compared to the total inventory in the reactor.**Process Description:** Water from the Columbia River was extensively treated before passing through the reactor. The water was then circulated in a single pass through the reactor process tubes, cooling tubes imbedded in the thermal shield, and reactor horizontal control rods. After exiting the reactor, the cooling water passed through a retention basin and was then discharged to the river. During reactor operations, fuel cladding failures sometimes occurred while the fuel element were in the process tubes. Over the operational lifetime of the reactor, there were several hundred such cladding failures. When fuel cladding failed, the cooling water in the affected process tubes became highly contaminated and elevated radiation levels were observed in the cooling water exiting the reactor core. This highly contaminated water was diverted to a trench for ground disposal rather than to the Columbia River. During reactor operations and reactor shutdowns, large quantities of decontamination solutions were used routinely to remove radionuclides from reactor equipment and facility surfaces. Decontamination activities took place at the dummy decontamination facility wash pad, which was adjacent to the fuel storage basin. Known decontamination solutions included chromic acid, citric acid, oxalic acid, nitric acid, sulfamic acid, sulfuric acid, and sodium fluoride. Other chemicals, including organic solvents were also used for some decontamination processes. The reactor had many safety and control mechanisms. The function of the horizontal control rods (HCRs) was to control the equilibrium and transient power levels of the reactor during routine operations and to maintain the desired neutron flux distribution. The HCRs were each about 11.0 meters (36 feet) long, with the poison (neutron absorbing) segment being about 8.96 meters (29.4 feet) long. Two of the rods were electrically driven and seven were hydraulically driven. The latter were known as shim rods and were used to achieve ongoing operation control and desired fluctuations. The vertical safety rods (VSRs) were 11.9 meter (39 foot) long, stainless steel sleeves with 0.74 millimeter (3/16 inch) thick boron stainless steel sleeves inside. Each VSR was inserted and withdrawn from the reactor via two separate cables wound around a winch located 12.2 meters (40 feet) above the top of the reactor. In cases of automatic shutdown ("scram") of the reactor, the electromagnetic clutch holding each rod would be deenergized (demagnetized), and the rods would free fall by gravity into channels penetrating the reactor. A "last ditch" safety system, a boric acid solution, was held in a large pedestal tank at the top of each reactor and connected to each of the 29 VSR channels via 1.27-centimeter (0.5-inch) pipes. The liquid boron system was later replaced by a system that used solid boron steel and carbon steel balls (Ball 3X System). The normal method for reactor refueling was displacement charge-discharge during reactor shutdown. During a refueling operation, the tubes to be discharged had their rear nozzle caps removed. New fuel elements were pushed into the process tube by a charging machine which caused the irradiated fuel elements in the tube to be displaced. The displaced irradiated fuel elements dropped into a water filled discharge chute and slid down into the metal pickup area at the end of the storage basin. The 6.1 meters (20 feet) of water in the chute area provided shielding as the elements accumulated and were sorted into buckets using long, hand-operated tongs. The buckets were then transferred by an overhead monorail system to the storage aisles where they were held for a time to allow the decay of short-lived radionuclides. Following the storage period, the buckets of fuel elements were moved by the overhead monorail system to the transfer area. At the transfer area, the irradiated fuel was loaded into casks, then raised by a crane and placed in special railroad cars for shipment to the chemical reprocessing facilities in the 200 Area.

Waste Type: Equipment
Waste Description: This Reactor building contained an estimated 23,500 curies of radionuclides, 79,800 kilograms (88 tons) of lead, and 227 kilograms (500 pounds) of cadmium.

Waste Type: Asbestos (friable)
Waste Description: The Reactor Building is estimated to contain 85.0 cubic meters (3000 cubic feet) of asbestos.

This Site has the Following SubSites:

Code: 118-B-8:1
Names: 118-B-8:1; 105-B Reactor Building

Code: 118-B-8:2
Names: 118-B-8:2; 105-B French Drains

Code: 118-B-8:3
Names: 118-B-8:3; 105-B Miscellaneous Pipeline Segments

Code: 118-B-8:1	Classification: Accepted
Names: 118-B-8:1; 105-B Reactor Building	Reclassification: None
Type: Reactor	Start Date:
Status: Inactive	End Date:

Description: The reactor rested on a 7.0-meter (23-foot) thick concrete foundation topped with cast iron blocks that served as a thermal shield. The building walls consisted of reinforced concrete in the lower portions and concrete blocks in the upper portions with thickness varying from 0.9 to 1.5 meters (3 to 5 feet). The roof was composed of precast concrete roof tiles, except for the discharge area enclosure and inner horizontal rod room where the roof was composed of 1.8-meter (6-foot) thick reinforced concrete. The reactor core consisted of a graphite "stack" that measured 8.5 meters (28 feet) from front to rear, 11.0 meters (36 feet) from side to side, and 11.0 meters (36 feet) from top to bottom. The stack was pierced front to rear by 2,004 process channels that held the fuel elements. Nine horizontal channels for control rods entered from the left side and 29 vertical channels for safety rods entered from the top. Six test holes labeled A through F, leading from the right, existed for irradiation of experiments, foils, counters, ionization chambers, and special samples. The horizontal control rod (HCR) and vertical safety rod (VSR) channels, as well as the test holes, were lined with a thin sheet of aluminum known as a "thimble". The graphite core was surrounded by a cast iron thermal shield layer. Cooling for the top, side, and bottom shields were provided by circulating water tubes imbedded in the blocks. The entire reactor block was then enclosed in a welded steel box that functioned to confine the inert gas atmosphere within the reactor. Expansion joints were placed on the corners of the block to allow for thermal expansion and expansion bellows were located at each process tube opening. The bellows served as gas seals as the process tubes expanded and contracted with temperature and with the distortions of the graphite. The fuel storage basin was located at the rear of the reactor. The concrete basin area served as a collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. The water in the basins served both as coolant and as shielding. The basin consisted of a discharge chute and fuel element pickup area, a storage area, a transfer area, and a wash pad area.

Location: The 105-B Reactor is near the center of the 100-B/C Area, and about 0.9 kilometers (0.6 miles) south of the Columbia River.

Waste Type: Not Specified
Waste Description: This Reactor building contains an estimated 23,500 curies of radionuclides, 79,800 kilograms

Description: (88 tons) of lead, and 227 kilograms (500 pounds) of cadmium. The Reactor Building is estimated to contain 85.0 cubic meters (3000 cubic feet) of asbestos.

The SubSite is Part Of:

Code: 118-B-8

Names: 118-B-8; B Reactor; 105-B Reactor Building

Code: 118-B-8:2

Classification: Accepted

Names: 118-B-8:2; 105-B French Drains

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of French drains around the periphery of the 105-B Reactor Building. During two walk downs in September 2004, 14 suspect French drain locations were recorded using global positioning system (GPS) instrumentation and were photographed.

No information could be found to corroborate what liquid waste streams from the building were discharged to each of these suspect drains. Because B Reactor was a first-of-a-kind operation and a national priority, it is prudent to assume that any of these suspect drains could have received unplanned and/or unrecorded releases of both radioactive and nonradioactive CERCLA wastes. It should be noted that the soil associated with some of the French drains at both D Reactor and F Reactor have tested positive for heavy metals and fission products. (See sites 100-F-10, 116-D-6 and 116-F-11.)

French drains were designed to receive nonradioactive liquids from the 105-B Reactor Building, via over-ground and/or underground piping. The discharges included steam condensate and floor drain wastes. The liquids would percolate through the gravel/soil fill, and out the open end at the bottom of the drain into the native soil.

Because of variables, each of the suspect drain sites will require further investigation prior to cleanup activities, including removal of covers and visual inspection and sampling of drain fill material and surrounding native soil.

During walkdowns on 9/7/04 by M. R. Schwab and J. C. Womack and 9/13/04 by J. P. Kiesler and W. Coffin around the periphery of the 105-B Building, 14 suspect French drain locations were recorded using global positioning system (GPS) instrumentation and were photographed. Most of the suspect drains had protective covers, and no visual inspection was attempted beneath those covers. Some of the covers had been penetrated by over-ground piping, and others had holes that suggested previous discharge points. Other French drains may have received discharges from underground piping.

Contaminants of potential concern (COPCs) for the French Drains included gamma emission analysis (GEA), gross alpha, gross beta, hexavalent chrome, inductively coupled plasma (ICP) metals, and polychlorinated biphenyls (PCBs). Several of these are methods for determining general fission products; however, the statement is consistent with current cleanup practices as listed in the sampling and analysis plans (SAPs).

Location: French Drain #1 (field personnel assigned numbering to correspond to photos) is a concrete box with a wooden cover, less than 1 square meter (10.8 square feet) in cross-section. It is located adjacent to the northeast corner of the 105-B Building, under a sign painted on the concrete block wall labeled Drain 1, and has a pink-colored steam condensate line coming out of the wall, which disappears into the soil directly adjacent to the box. It was located at E 565331, N 144524.

French Drain #4 is a concrete box with a wooden cover, less than 1 square meter (10.8 square feet) in cross-section. It is located adjacent to the southeast corner of the 105-B Building, under a sign painted on the concrete block wall labeled Drain 4, the cover is penetrated by a 10 centimeter (4 inch) pipeline that emanates from a larger line. It is located at E 565331, N 144502.

French Drain #11 is a confined space about 5 meters (16 feet) from a northeast corner of the 105 B Building, with a red, metal manhole cover with no over-ground lines to it. It is located at E 565320, N 144531.

French Drain #12 is a confined space near a northeast corner of the 105-B Building, with a metal manhole cover penetrated by a 1.3 centimeter (0.5 inch) and a 2.5 centimeter (1 inch) pink-colored pipeline. It is located at E 565310, N 144533.

French Drain #13 appears to be a clay or concrete pipe adjacent to a northeast corner of the 105 B Building, less than 1 meter (3 feet) in diameter, with only soil visible on its surface, and penetrated by 10.2 centimeter (4 inch) pipeline. It is located at E 565310, N 144535.

French Drain #14 is a 1.4 meter (4.6 foot) diameter concrete pipe, 2.5 meters (8 feet) from the northeast corner of the 105-B Building. It appears to have a cover (a lifting ring is shown in the photo) and has no over-ground pipelines to it. It is located at E 565299, N 144562.

French Drain #15 is a 20 centimeter (8 inch) clay pipe on the northwest corner of the 105 B Building, apparently filled with soil, no cover, and with no over-ground lines to it. It is located at E 565263, N 144545.

French Drain #16 is a 1 meter (3 foot) diameter concrete pipe near the northwest corner of the 105-B Building, with only soil visible on its inside, and with one 2.5 centimeter (1 inch) pipe penetrating the top of the drain, and a second, capped line terminating just above its surface. It is located at E 565262, N 144541.

French Drain #18 is a 1 meter (3 foot) diameter confined space along the west wall of the 105 B Building, and has a metal cover. The cover has a 7.6 centimeter (3 inch) hole in it, and a similar-sized pipe terminates near the surface of the cover. It is located at E 565252, N 144499.

French Drain #19 is a 1.4 meter (4.6 foot) diameter concrete confined space along the west wall of the 105-B Building. It has a solid, concrete cover with no over-ground lines running to it. It is located at E 565252, N 144491.

French Drain #20 is a 1 meter (3 foot) diameter concrete pipe near the southwest corner of the 105-B Building, and has a metal cover. A 2.5 centimeter (1 inch) pipe penetrates the cover, and a similar-sized pipeline terminates just above a second hole in the cover. It is located at E 565255, N 144473.

French Drain #21 is a 1 meter (3 foot) diameter concrete pipe along the south wall of the 105 B Building just outside a door marked Inner Inst. Room. It has a metal cover, penetrated by a pink-colored 1.3 centimeter (0.5 inch) pipeline. It is located at E 565284, N 144495.

French Drain #22 is a 1 meter (3 foot) diameter confined space along the south wall of the 105 B Building, and has a metal cover. A pink-colored 2.5 centimeter (1 inch) pipeline penetrates the cover, and two other lines enter the soil near the confined space. It is located at E 565299, N 144492.

French Drain #23 is a white-painted, insulated pipe that directly enters the soil along the south wall of the 105-B Building. It is located at E 565308, N 144492.

Waste Type: Not Specified
Waste Description: The waste are the french drains, piping to the french drains, and potentially contaminated soil associated with the french drains.

The SubSite is Part Of:

Code: 118-B-8
Names: 118-B-8; B Reactor; 105-B Reactor Building

Code: 118-B-8:3
Classification: Accepted
Names: 118-B-8:3; 105-B Miscellaneous Pipeline Segments
Reclassification: None
Type: Reactor
Start Date:
Status: Inactive
End Date:

Description: The subsite consists of pipeline segments (DS-100BC-013, 014, 017, and 018, 024, 025, 026, 027, 028, 035, 041 and 043), that were deferred from 100-B-21. Documentation states that the segments were within the 7.6 meter (25 foot) buffer zone and identified during removal of effluent pipelines and site characterization in the 100-B/C Area. Pipelines that went toward the reactor were cut approximately 15.2 meters (50 feet) from the reactor footprint so as not to disturb the 105-B Reactor structure. The numbering system for the segments was created and assigned by the subcontractor as they were recorded in the field.

There were two pipelines associated with the 120-B-1 Battery Acid Sump inlet and outlet pipelines that were left in place. They were cut off and grouted at the edge of the 120-B-1 remediation footprint. These have been assigned to the 118-B-8:3 subsite (RSVP-2006-057).

Other pipelines in this subsite were the southern most part of the 1607-B2 septic system collection lines. They were not remediated with the 1607-B2 site because of their proximity to the reactor facility. They will be addressed with disposition of the 105-B facility (RSVP-2006-055).

Location: The coordinates were recorded using a Trimble survey grade Global Positioning Satellite (GPS) instrument, (centimeter accuracy), location coordinates were described in terms of Washington State Plane easting (E), northing (N), and elevation in NAVD88 (meters). For selected sites, Ground-Penetrating Radar (GPR) was also utilized. Dimensions were noted during site characterization. Contaminants of Potential Concern were listed only for segments known to have contaminants. The sample data results have not been loaded into HEIS.

DS-100BC-013 pipeline segment was 20 centimeters (8 inches) diameter steel line, length unknown. The coordinates at the cut end were E 565322.97, N 144540.94, and elevation 141.71 meters. It was discovered during the excavation of the 16.5 meter (54 inch) cross-tie effluent pipeline. The pipeline segment was shallow and did not appear on project drawings. It has been cut off, the end pinched closed, and the site backfilled. No sampling was conducted.

DS-100BC-014 pipeline segment was a 20 centimeter (8 inch) diameter (estimated), steel line, length unknown. The coordinates at the cut end were E 565337.60, N 144532.97, and elevation 142.22. This pipeline was located approximately 14.5 meters (47.6 feet) east of the DS-100BC-013 segment. It was discovered during the excavation of the effluent pipelines northeast of 105-B. The pipeline was shallow and not apparent on project drawings. It has been cut off, the end pinched closed, and the site backfilled.

DS-100BC-017 pipeline segment was a 20 centimeter (8 inch) diameter (estimated), steel pipeline that entered a junction box, length unknown. The coordinates at the cut end were E 565313.35, N 144550.66, and elevation 141.01 meters. It was pinched closed and backfilled in

place. The pipeline was not apparent on project drawings. No sampling was conducted.

DS-100BC-018 pipeline segment was a 30.5 centimeter (12 inch) diameter (estimated) steel pipeline, length unknown. It ran at a diagonal to the former junction box. The coordinates at the exposed ends were (E 565311.85, N 144550.88) and elevation 142.84 meters and E 565317.95, N 144542.72, and elevation 142.98 meters. The pipeline, which was left intact, could not be found on project drawings. No sampling was conducted.

DS-100BC-024 pipeline segment was a large-diameter pipeline (actual diameter and length were unknown). The coordinates at the cut end were E 565320.28, N 144549.81, and elevation 141.25 meters. It has been cut off, covered with plastic and plywood, and backfilled. No sampling was conducted.

DS-100BC-025 pipeline segment was a large-diameter pipeline (actual diameter and length were unknown). The coordinates at the cut end were E 565320.71, N 144545.69, and elevation 138.25. It has been cut off, covered with plastic and plywood, and backfilled. No sampling was conducted.

DS-100BC-026 pipeline segment was a large-diameter pipeline (actual diameter and length were unknown). The coordinates at the capped end of the pipeline were E 565331.46, N 144547.78, and elevation 138.05 meters. The pipeline entered the excavation from the south sidewall and angled northeast toward a large diversion box. The pipeline was found capped with a steel plate. It was not identified on project drawings. No sampling was conducted.

DS-100BC-027 pipeline segment was a concrete pipeline (actual diameter and length were unknown). The coordinates at the end of the segment were E 565341.83, N 144535.68, and elevation 139.28 meters. On 6/16/2003 field screening for radiological control was performed. No analytical samples were collected.

DS-100BC-028 pipeline segment was a vitreous clay pipeline (actual diameter and length were unknown), embedded in concrete in tandem with DS-100BC-027, entering the pipeline excavation south of a junction box. The pipeline coordinates at the end were E 565340.04, N 144536.38, and elevation 139.19 meters. Sections of this pipeline to the south have not been removed. This pipeline was not identified on project drawings. Fine-grained sediment was observed along the bottom of the pipeline. It was unclear if the material was from processes associated with the pipeline or washed in from dust-suppression efforts during remediation. On 6/16/2003 field screening for radiological control was performed, however, no analytical samples were collected.

DS-100BC-035 pipeline segment was a 137.2 centimeters (54 inches) large-diameter concrete pipeline (length unknown) encased in concrete. The coordinates were E 565306.48, N 144581.69, and elevation 139.80 meters. The structure was capped with plastic and plywood and had a tar/asbestos gasket at the cold joint of the concrete encasement. Contaminants of concern was asbestos. On 3/5/2003, sample J00J04 was collected from the gasket material and sent for asbestos analysis.

DS-100BC-041 pipeline segment was of undetermined diameter [at least 30.5 centimeters (12 inches), actual diameter and length were unknown], just below grade. The coordinates were E 565327.99, N 144535.81, and elevation 142.68 meters. No sampling was conducted. This pipeline was believed to travel in a southwest direction toward a metal plate covered structure on the northeast of the 105-B Reactor Building. The pipeline was not found on project drawings.

DS-100BC-43 consisted of a group of pipelines around the south and southwest sides of the 105-B Reactor. The following alpha characters have been added as an indicator for a specific pipeline. The pipeline coordinates were estimated from the center (not accounting for bends) of

lines. The diameters of these pipelines were unknown; the lengths were: A - E 565341, N 144510, 58.7 meters (192.6 feet) long; B - E 565335, N 144523, 12.6 meters (41.3 feet) long; C - E 565336, N 144508, 12.7 meters (41.7 feet) long; D - E 565335, N 144504, 10.6 meters (34.8 feet); E - E 565335 N 144492, 12.7 meters (41.6 feet) long; F - E 565335, N 144486, 11.5 meters (37.8 feet); G - E 565313; N 144480, 73 meters (239.5 feet) long. No sampling was conducted.

Waste Type: Not Specified

Waste Description: The waste is mixed (chemically and radiologically) contaminated piping (concrete, steel and

vitrified clay) and piping contents (scale and sediment), and contaminated soil.

The SubSite is Part Of:

Code: 118-B-8

Names: 118-B-8; B Reactor; 105-B Reactor Building

Code: 100-C-10

Classification: Discovery

Names: 100-C-10; Yellow Stained Soil Northwest of 183-C Headhouse

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: A yellow stained area was discovered in the layback of the western end of the 100-C-7:1 waste site while excavating in May 2011.

Location: The waste site is located west of the intersection of Burnett Road and Belle Street.

Code: 118-C-3

Classification: Accepted

Names: 118-C-3; 105-C Reactor Building

Reclassification: None

Type: Reactor

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1969

Description: The site consists of three subsites: 1) the inactive plutonium production 105-C Reactor Core and ISS Project, 2) 105-C Reactor Building Below-Grade Structures and Underlying Soils, 3) 105-C French Drains.

Location: The site is located in the 100 B/C Area, south of the 105-B reactor.

Release Description: There may have been some seepage from the fuel storage basins, in which case the soil column under the basins may be contaminated. The soil has not been characterized, but the radionuclide inventory is estimated to be low when compared to the total inventory in the reactor.

Process Description: The facility was a water cooled, graphite moderated nuclear reactor that irradiated uranium fuel rods. The plutonium by-product was extracted from the irradiated rods in the 200 Area Fuel Separations plants. Before the reactor was placed into interim safe storage, the original facility consisted of the reactor block, which included the graphite core, biological and thermal shields, pressure tubes, and the safety and control systems. The irradiated fuel storage basin was constructed below grade. The reactor building was constructed with 0.9 to 1.5-meter (3 to 5-foot) thick concrete walls around the reactor core and corrugated asbestos/cement siding upper walls. The original roof construction was reinforced concrete over the inner rod room and the rear face enclosure and poured insulating concrete over the rest of the building.

Waste Type: Equipment

waste type: equipment

Waste Description: In 1987, the facility was estimated to contain approximately 25,000 curies of radionuclides, 95,000 kilograms (105 tons) of lead, and 200 cubic meters (7000 cubic feet) of asbestos. During the Interim Safe Storage project, approximately 198 cubic meters (6600 cubic feet) of asbestos was removed along with 500 tons of interior and exterior transite panels. During 1996 through 1998, the total estimated inventory of lead was increased to 203 tons. Seventy tons of lead was removed. Material that was radioactively contaminated was take to the Environmental Restoration Disposal Facility (ERDF).

This Site has the Following SubSites:

Code: 118-C-3:1

Names: 118-C-3:1; 105-C Reactor Core and ISS Project

Code: 118-C-3:2

Names: 118-C-3:2; 105-C Reactor Building Below-Grade Structures and Underlying Soils

Code: 118-C-3:3

Names: 118-C-3:3; 105-C French Drains

Code: 118-C-3:1

Classification: Accepted

Names: 118-C-3:1; 105-C Reactor Core and ISS Project

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: Beginning in 1996, decommission activities removed portions of the building, leaving only the reactor core and shield walls. The footprint of the building was reduced 81% during the Interim Safe Storage project from 5,528 square meters (59,500 square feet) to 1,059 square meters (11,400 square feet).

Location: The site is located in the 100 B/C Area, south of the 105-B reactor.

The SubSite is Part Of:

Code: 118-C-3

Names: 118-C-3; 105-C Reactor Building

Code: 118-C-3:2

Classification: Accepted

Names: 118-C-3:2; 105-C Reactor Building Below-Grade Structures and Underlying Soils

Reclassification: Closed Out (8/7/2000)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The remedial action involved the decommissioning and decontamination of associated structures and soils at the 105-C Reactor to the extent required leaving only the reactor core to be placed in Interim Safe Storage status. Remediation included the removal of hazardous and radiologically contaminated material from below grade rooms, tunnels and contaminated soils. Contaminated material was disposed of in the Environmental Restoration Disposal Facility (ERDF). The excavated areas were backfilled to grade with clean material.

Location: The site is located in the 100 B/C Area, south of the 105-B reactor.

Closure Info: The remedial action involved the decommissioning and decontamination of associated structures and soils at the 105-C Reactor to the extent required leaving only the reactor core to be placed in Interim Safe Storage status. Remediation included the removal of hazardous and radiologically contaminated material from below grade rooms, tunnels and contaminated soils.

Contaminated material was disposed of in the Environmental Restoration Disposal Facility (ERDF). The excavated areas were backfilled to grade with clean material.

The SubSite is Part Of:

Code: 118-C-3

Names: 118-C-3; 105-C Reactor Building

Code: 118-C-3:3

Classification: Accepted

Names: 118-C-3:3; 105-C French Drains

Reclassification: Interim Closed Out (4/24/2006)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The subsite is a collection of four french drains roughly located at the four corners of the 105-C Reactor Building. Each french drain was approximately 40.6 centimeters to 61 centimeters (16 inches to 24 inches) in diameter and had a 3.8 centimeter (1.5 inch) pipeline that ran to the french drain.

Closure Info: The Remaining Sites Verification Package, (RSVP-2006-016) and the confirmatory sampling results support a reclassification of this site to interim closed out. The current site conditions have achieved the objectives for interim closed out as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR) and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units.(ROD).

The area around all four drains was disturbed and/or excavated during 105-C Reactor decommissioning activities. The area around the french drain to the southeast of the reactor was extensively excavated during the remediation of the 100-B/C south effluent pipelines. The entire area was backfilled and smoothed to grade after the various excavations. Prior to confirmatory sampling no visual surface indicators of the french drains remained, but no record of their removal or remediation could be found. To ensure complete cleanup of the Hanford Site a document search was conducted and found evidence of a potential liquid waste site. The french drains were likely condensate drains from the sealed steam heating system that would not have been subject to contamination from within the reactor building. However, the exact history of the drains is unknown, hence the need for the confirmatory sampling.

Confirmatory sampling was conducted on January 4, 2005. Excavations at the four french drain locations found three of the four drains partially intact. The fourth drain, #4 to the southeast, was not found in the excavation. The three french drains found were excavated and sampled just below the bottom of the drain. The southeast location was excavated to 4.6 m (15 ft) below ground surface and sampled at the bottom of the excavation. This sample design follows an agreement with the U.S. Environmental Protection Agency for sampling an analogous french drain at the 105-F Reactor, which was also removed during decontamination and decommissioning activities.

The contaminants of potential concern (COPCs) were developed for the 100-B/C south effluent pipelines, based on the 100 Area Remedial Action Sampling and Analysis Plan (SAP), they included americium-241, cesium-137, cobalt-60, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-238, lead, mercury, total chromium, and hexavalent chromium. Because of some uncertainty and knowledge of previous investigations, the following analytical methods were also performed: polychlorinated biphenyls (PCBs), semivolatile organic analysis (SVOA), and the expanded inductively coupled plasma (ICP) metals list (antimony, arsenic, barium, beryllium, boron, cadmium, chromium [total], cobalt, copper, lead, manganese, molybdenum, nickel, silver, selenium, vanadium, and zinc). During confirmatory sampling, field screening for volatile organic compounds was

performed to assess the need for volatile organic analysis (VOA). No volatile organic compounds were detected, and VOA was not performed on any of the samples.

Per the 105-C Reactor Interim Safe Storage Project Final Report, the walls of the structures within the area described were removed to 4.6 meters (15 feet) below grade. The Cleanup Verification Package for the 105-C Reactor Building Below-Grade Structures and Underlying Soils released the soils under the reactor. The french drains were not included in cleanup activities associated with the Cleanup Verification Package for the 100 B 8:1 and 100-C-6:1 100-B/C South Effluent Pipelines.

These results show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural-residential scenario. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil (i.e., surface to 4.6 m [15 ft]) and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 118-C-3

Names: 118-C-3; 105-C Reactor Building

Code: 100-D-64

Classification: Accepted

Names: 100-D-64; 105-DR Reactor Exhaust Stack Sampling Building; 119-DR; 119-DR Sample Building

Reclassification: Interim Closed Out (3/4/2004)

Type: Laboratory

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and closed-out. The site consisted of a single-story 33.4 meters squared (360 square feet), pre-fabricated metal structure on a concrete slab.

Related Sites/ Structures: 122-DR-1 the 105-DR Large Sodium Fire Facility and the 116-DR- Reactor Exhaust Stack (132-DR-2/122-DR-1:5).

Closure Info: 122-DR-1:2, 100-D-53, 122-DR-1:4, 132-DR-2, 122-DR-1:5, 100-D-64, 100-D-23 and 100-D-54 were addressed as a group. The information below documents information for the group of sites.

Remedial or removal objectives and goals for the components of the LSFF TSD unit pre-filter exhaust tunnel [122-DR-1:2], the 117-DR Exhaust Filter Building [100-D-53/122-DR-1:4], 116DR reactor exhaust stack(132 DR 2/122-DR-1:5), were obtained from the Action Memorandum, USDOE Hanford 100 Area National Priorities List (NPL) 105-F and 105 DR Reactor Buildings and Ancillary Facilities (Action Memorandum). The objectives and goals were also included in the Phase III SAP (DOE/RL-99-35) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP) (DOE/RL-96-17), which was referenced in the Action Memorandum.

Based on consideration of the requirements of CERCLA and detailed analysis of alternatives, the Tri-Parties have selected the remove/dispose alternative under a rural-residential land use scenario for the 117-DR facilities site.

The objective for the structures included the removal of the structure to a minimum of 0.9 meters (3 feet) below surface grade. Excavation was driven by remedial action objectives for direct exposure, protection of groundwater, and protection of the Columbia River. For the

respective points of compliance, remedial action goals (RAGs) were established to identify radionuclide and no radionuclide contaminants of concern (COCs) and contaminants of potential concern.

Waste site COCs for the 117 DR facilities site were identified through process knowledge and are specified in the Phase III SAP (DOE/RL-99-35). The COC list was further refined and amended with the 117 DR Exhaust Filter Building Proposed Additional Soil Sampling and 1720-HA Arsenal Removal/ Disposal Summary (CNN 106839). The COCs consist of the following: americium-241, arsenic, carbon-14, barium, cesium-137, cadmium, cobalt-60, total chromium, europium-152, hexavalent chromium, europium-154, lead, europium-155, lithium, niel-63, mercury, plutonium-238, selenium, plutonium-239/240, silver, strontium-90, sodium, uranium-234, uranium-235 and uranium-238.

At the completion of the remedial action, the total excavation was approximately 1,010 meters squared (10,872 square feet) in area with an approximate depth of 5 meters (16.4 feet). Approximately 14,011 metric tons (15,412 tons) of material from the site were disposed of at the Environmental Restoration Disposal Facility.

The 117-DR facilities site is verified to be remediated in accordance with the RAOs and RAGs of the Action Memorandum and the Remaining Sites ROD and may be backfilled.

In addition, demonstration that remedial action at the 117-DR facilities site has achieved the RAOs and corresponding RAGs established in the Action Memorandum and the Remaining Sites ROD meets the RCRA closure requirements for the underlying soils. Final RCRA TSD certification of closure is pending.

Code: 100-D-105	Classification: Accepted
Names: 100-D-105; D/DR-Area Pipelines Discovered During Remediation	Reclassification: None
Type: Product Piping	Start Date:
Status: Inactive	End Date:
Description: The site consists of all the D/DR-Area Pipelines discovered during remediation but were not associated with an existing waste site. Additional pipeline segments were assigned to this grouping following a spatial analysis of the pipeline geographic information system (GIS) assignments with those contained in regulator approved work instructions and closure documents. Some of these pipeline segments were either not assigned to a waste site or incorrectly assigned to a waste site when compared to the documents.	

The following pipeline segments have been included in this waste site. The first six were mapped using a geophysical survey. The survey included tracing the pipeline exposed in the side of an excavation by electromagnetic induction with direct coupling.

1) A metal pipe was discovered while excavating 100-D-31:3. It is located between 108-D and 1703-D and runs a distance of at least 28 m (92 ft) north/south. The diameter of the pipe was not documented. This pipe was identified as feature "A" in the geophysics data.

2) A 20 cm (8 in) metal pipe was discovered while excavating 100-D-31:3. It was located between the 1727-D building and the 187-D1 water tower. The pipeline is approximately 95 m (312 ft) long. The northern most 20 m (66 ft) of pipe was removed during remediation of 100-D-31:3. The pipe was identified as feature "3_091509" in the geophysics data. The pipe is in line with feature "A" separated by a gap of 9 m (30 ft). The two pipes also appear to be of similar size and construction suggesting that the two pipelines might be the same.

3) A metal pipe was discovered while excavating 100-D-31:3. It is located 8 m (26 ft) south of the 1731-D Building and runs a distance of at least 11 m (36 ft) east/west. The diameter of the pipe was not documented. This pipe was identified as feature "D" in the geophysics data.

4) A metal pipe was discovered while excavating 100-D-31:3. It ran from the north end of the 1731-D building south for 32 m (105 ft) before turning west. From there it traveled another 53 m (174 ft) before turning south again and traveling under the 1726-D building. The diameter of the pipe was not documented. This pipe was identified as feature "F" in the geophysics data. The pipe has a post indicating valve connected to it, suggesting that this is a pressurized service water line. It also runs parallel to a 76.2 cm (30 in) steel filtered water line (100-D-63) in an area where construction drawings (W-75014, M-1901 Sheet 5) show the line reducing in diameter from 30 in to 6 in. It is unclear if the discovered pipe was the same service line but abandoned in place when the 76.2 cm (30 in) steel filtered water line was installed. Drawing H-1-12186 shows a 6 inch fire protection line connecting to the 1760-D Building in the same area as this metal pipe.

5) A metal pipe was discovered while excavating 100-D-31:3. It is located just east of the 1726-D building adjacent to another discovery pipe (feature "F"). The pipe was identified as segment "G" in the geophysics data. The diameter of the pipe was not documented. Drawing H-1-12186 shows a sanitary water line connecting to the 1760-D Building in the same area as this metal pipe.

6) A 15 cm (6 in) metal pipe was discovered while excavating 100-D-31:3. It was located just west of the 1701-DA building and traveled 14 m (46 ft) to the west. The pipe was identified as segment "4_091509" in the geophysics data.

7) An 8 cm (3 in) pipe was discovered while excavating 100-D-31:1. It is located in the 100-D-31:1 excavation approximately 141 m (463 ft) north of D Avenue. It runs east/west. This pipe was identified as Miscellaneous Pipeline Number "MP-1" in the Remaining Sites Verification Package for 100-D-31:1 and 100-D-31:2 (154031).

8) A 20 cm (8 in) pipe was discovered while excavating 100-D-31:2. It is located in the 100-D-31:2 excavation approximately 19 m (62 ft) east of the 1713-D building. It runs north/south. This pipe was identified as Miscellaneous Pipeline Number "MP-3" in the Remaining Sites Verification Package for 100-D-31:1 and 100-D-31:2 (154031).

9) A 15 cm (6 in) cast iron pipe was discovered while excavating 100-D-31:2. It is located in the 100-D-31:2 excavation approximately 6 m (20 ft) west of the 1713-D building. It runs north/south. This pipe was identified as Miscellaneous Pipeline Number "MP-5" in the Remaining Sites Verification Package for 100-D-31:1 and 100-D-31:2 (154031). It is possible that this is the Fire Protection Line shown on drawing H-1-1452 just north of the 2 inch service water line to the 1713-D Building.

10) A 10 cm (4 in) pipe was discovered while excavating 100-D-31:2. It is located in the 100-D-31:2 excavation approximately 10 m (33 ft) west of the southeast corner of the 1717-D building. It runs north/south. This pipe was identified as Miscellaneous Pipeline Number "MP-8" in the Remaining Sites Verification Package for 100-D-31:1 and 100-D-31:2 (154031).

11) A 25 cm (10 in) steel pipe was discovered while excavating 100-D-31:6. It is located in the 100-D-31:6 excavation approximately 72 m (236 ft) east of the 1901-D water tower. It runs north/south. This pipe was identified as Miscellaneous Pipeline Number "MP-6" in the Remaining Sites Verification Package for 100-D-31:6 (147171).

12) A 10 cm (4 in) cast iron pipe was discovered while excavating 100-D-8. The line was

estimated to be at least 74 m (243 ft) long based on ground penetrating radar geophysics data. It is located approximately 100 m (328 ft) south of the 1907-DR outfall structure.

13) A 76 cm (30 in) french drain not previously assigned to a waste site was observed on drawing H-1-9006. It received drainage from the desert cooler and drinking fountain. The french drain was connected to the 1702-DR Badge House by a 3.8 cm (1.5 in) drain line.

14) A steel pipe was discovered while excavating 100-D-32 (Figure 10). It was uncovered along the southwest corner of the 100-D-32 excavation sidewall at Washington State Plane coordinates N151417, E573849, approximately 0.61 m (2 ft) below grade. It is located in the vicinity of a temporary sanitary water line (100-D-63). It is not known whether the two are the same line.

15) A 30.48 cm (12 in) pipe was discovered while excavating 100-D-1. It was initially thought to be associated with 100-D-65 (1904-D Spillway). There is not enough information to support that premise at this time. The pipe is located at Washington State Plane coordinates E573546.6 N152352.8 to E573550.5 N152353.7.

16) A 1.9 cm (0.75 in) sodium silicate line from the storage tank to the 187-D1 Elevated Water Tower and the 30 cm (12 in) filtered water line to the 187-D1 Elevated Water Tower (H-1-13252).

17) A 1.9 cm (0.75 in) sodium silicate line from the storage tank to the 30 cm (12 in) filtered water lines that lead to the 187-DR1 and 187-DR2 Elevated Water Towers (H-1-13252).

Location: The pipeline segments are located throughout the 100-D/DR Area.

Process Description: There is no process history associated with the 100-D-105 waste site.

Code: 100-D-106	Classification: Accepted
Names: 100-D-106; 1607-D1 Influent Pipelines	Reclassification: None
Type: Sanitary Sewer	Start Date:
Status: Inactive	End Date:

Description: The site consists of the sanitary sewer pipelines that connected the service buildings at the 100-D main gate to the 1607-D1 septic tank. It also includes a french drain approximately 21 m (70 ft) north of the 1709-D building (H-1-701).

Location: The 100-D main gate is located approximately 1 Km (0.6 miles) southeast of the 105-D Reactor Building.

Process Description: The site provided sanitary service for patrol and fire personnel located at the entrance to the 100-D/DR Reactor Area.

Related Sites/ Structures: 1701-D Gate House, 1709-D Fire Headquarters and 1720-D Patrol Headquarters.

Code: 100-D-107	Classification: Discovery
Names: 100-D-107; Soil beneath the 1713-DA Essential Materials Warehouse	Reclassification: None
Type: Unplanned Release	Start Date:

Status: Inactive**End Date:****Description:** The site consists of the soil beneath and surrounding the demolished 1713-DA Essential Materials Warehouse. The 1713-DA Essential Materials Warehouse is analogous in operation to 1713-BA. The sodium dichromate contamination at 1713-BA (100-B-27) was directly related to operations in the 1713-BA Building. It is unknown whether or not there are any releases at 1713-DA from the operations involving sodium dichromate.**Location:** The 1713-DA building had been located near the intersection of Pump House Loop and Puyallup Street.

Code: 118-D-6**Classification:** Accepted**Names:** 118-D-6; 105-D Reactor Building**Reclassification:** None**Type:** Reactor**Start Date:** 1/1/1944**Status:** Inactive**End Date:** 1/1/1967**Description:** The unit consists of: 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety and control systems; 2) Ancillary Support Areas, Below-Grade Structures and Underlying Soils the irradiated fuel storage basin; and 3) 118-D-6:3, Fuel Storage Basin and Underlying Soils and 4) 105-D Fuel Storage Basin Side Slope Soils.**Location:** The 105-D Reactor site is located in the 100-D Area approximately 250 meters (820 feet) north of the 105-DR Reactor.**Release Description:** It is suspected that the irradiated fuel storage basin leaked for a number of years prior to deactivation.**Process Description:** Between 1942 and 1955, eight water-cooled, graphite-moderated production reactors were constructed along the Columbia River in the 100 Areas of the Hanford Site. The construction of the first three Hanford reactor facilities (B, D, and F Reactors) utilized the same design drawings. The 105-D Reactor facility is located in the 100-D Area of the Hanford Site. Construction of the D Reactor was initiated in November 1943. Initial startup of the reactor was achieved on December 17, 1944. The D Reactor was shut down on June 26, 1967. Since deactivation, the 105-D Reactor has been in a condition of minimum surveillance and maintenance (S&M). Significant deterioration had occurred, particularly in the roof sections over the fan room and work area. Permanent decommissioning alternatives for the Hanford Site production reactors were assessed in the Final Environmental Impact Statement, Decommissioning of the Eight Surplus Production Reactors at the Hanford Site (DOE 1992). A Record of Decision (ROD) was issued by the U.S. Department of Energy (DOE) (58 Federal Register 48509). The ROD alternative selected was to place the reactors into a safe storage condition for up to 75 years. After Interim Safe Storage (ISS), the reactors would be transported in one piece to a specially prepared burial facility in the 200 West Area of the Hanford Site. The original footprint area of the 105-D Reactor Building was approximately 4,994 meters squared (53,750 square feet). The final ground-level footprint area of the safe storage enclosure (SSE) is 999 meters squared (10,750 square feet). The areas of the reactor building that have been removed to ERDF represent 80% of the original footprint of the reactor building, outside of the reactor block shield walls.**Waste Type:** Equipment**Waste Description:** This unit contained an estimated 21,500 curies of radionuclides, 85,000 kilograms (94 tons) of lead, and 2.8 cubic meters (100 cubic feet) of asbestos. The primary source of contamination at the 105-D site was reactor coolant water and water in the FSB (118-D-6:3) that became contaminated through contact with irradiated and ruptured fuel elements and components from

the reactor cooling system. The water was believed to have contaminated the concrete surfaces of the FSB. No documentation of basin water leakage into the underlying soils was discovered during the cleanup activities .

This Site has the Following SubSites:

Code: 118-D-6:1

Names: 118-D-6:1; 105-D Reactor Core and ISS Project

Code: 118-D-6:2

Names: 118-D-6:2; 105-D Below-Grade Structures and Underlying Soils; 105-D Reactor Ancillary Support Areas

Code: 118-D-6:3

Names: 118-D-6:3; 100-D FSB; 105-D Reactor Fuel Storage Basin and Underlying Soils

Code: 118-D-6:4

Names: 118-D-6:4; 105-D Fuel Storage Basin Side Slope Soils

Code: 118-D-6:1

Classification: Accepted

Names: 118-D-6:1; 105-D Reactor Core and ISS Project

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The safe storage enclosure (SSE) consists of the area within the shield walls, included the reactor block; the front-face work area; the elevator; the rear-face work area; and miscellaneous areas 113a, 115a, and 254. This part of the reactor building will remain in place to act as temporary storage for the reactor block. As much as was practical, all objects and surface contamination were removed. A new roof was added as part of the interim safe storage (ISS) effort. All doors were permanently sealed except for one door that remains locked and is welded shut. The only planned entrance to this structure is for surveillance and maintenance activities that occur approximately every 5 years. The original footprint area of the 105-D Reactor Building was approximately 4,994 meters squared (53,750 square feet). The final ground-level footprint area of the safe storage enclosure (SSE) is 999 meters squared (10,750 square feet). The areas of the reactor building that have been removed to ERDF represent 80% of the original footprint of the reactor building.

Location: The 105-D Reactor site is located in the 100-D Area approximately 250 meters (820 feet) north of the 105-DR Reactor.

The SubSite is Part Of:

Code: 118-D-6

Names: 118-D-6; 105-D Reactor Building

Code: 118-D-6:2

Classification: Accepted

Names: 118-D-6:2; 105-D Below-Grade Structures and Underlying Soils; 105-D Reactor Ancillary Support Areas

Reclassification: Interim Closed Out (7/27/2005)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: For the purpose of removal, the reactor facility was divided into several areas, known as Demolition Zones. The descriptions of the demolition zones in subsite 118-D-6:2 are:

Demolition zone 1, located on the north side of the original reactor building, consisted of the water tower pedestal, the 103-D Unirradiated Fuel Element Storage Building, miscellaneous storage room 210, and room 215 on the ground level.

Demolition zone 2 was located on the west side of the original reactor building. At ground level this zone consisted of the 230a valve pit; the 310 supply fan room; the 231d tool room; the 231b laundry storage room; the 230b elevator; and the 228a, 228b, 228c, 228d, 229a, and 229b offices.

Demolition zone 3 was located on the south side of the original reactor building. At ground level this zone consisted of the 311, 312, 313, and 314 fan rooms; 315 exhaust plenum; 114a clean storage room; 114b contaminated storage room; 213 stairway/corridor; 233a sample room; and miscellaneous rooms 234 and 235. The seal pit was originally part of this demolition zone. However, the seal pit was removed, remediated, and closed by a CVP along with its associated pipelines. (zone 4 is part of subsite 118-D-6-6:3)

Demolition zone 5 was located on the north side of the original reactor building. At ground level this zone consisted of the 211, 212, 218, and 219 miscellaneous rooms; the 220 control room; the inner horizontal control rod room; the outer horizontal control rod room; and miscellaneous rooms numbered 222, 223, 224, 225, and 227.

Location: The 105-D Reactor site is located in the 100-D Area approximately 250 meters (820 feet) north of the 105-DR Reactor.

Closure Info: 118-D-6:2, 118-D-6:3 and 132-D-4 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP) for the 118-D-6:2, 105-D Reactor Ancillary Support Areas, Below-Grade Structures, and Underlying Soils; the 118-D-6:3, 105-D Reactor Fuel Storage Basin and Underlying Soils; and the 132-D-4, 105-D Reactor Exhaust Stack Foundation (CVP) demonstrated that removal action at the 105-D Reactor subsites 118-D-6:2, 118 D-6:3, and 132-D-4 has achieved the removal action objectives established in the applicable action memorandums and has achieved the corresponding RAGs established in the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings, the Sampling and Analysis Plan for Interim Closure of the 105-D and 105 H Reactor Below-Grade Structures and Underlying Soils (SAP), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The FSB water level was lowered upon closure of the reactor and further cleaned out during 1984. Ruptured fuel elements had caused the shielding water to become highly contaminated. The remaining water was processed and released to 116-D-10 pond. Then an asphalt emulsion was applied to the floors and walls of the basin to fix loose contamination. The remaining basin hardware, perfs, buckets, and sludge were packaged and disposed of as low-level radioactive waste in the 200 Area burial grounds.

These areas were surveyed, and local contamination was removed in preparation for clean demolition. With the exception of the FSB walls and floor below 4.6 meters (15 feet), all structures in this zone were removed due to surface contamination being present. Sampling of underlying soils was not required because structures in this zone were not subjected to standing contaminated water and there was no mechanism for residual surface contamination to penetrate into the concrete and the underlying soil. The above- and below-grade structures were demolished and the demolition debris sent to ERDF. A section of 100 D-48:4 effluent pipeline remains buried under what was room 210. This section of pipeline will be considered separately from demolition zone 1 and deferred to the Remedial Action Project.

It was determined in the Sampling and Analysis Plan for Interim Closure of the 105-D and 105-

H Reactor Below-Grade Structures and Underlying Soils that the 105-D FSB would not be cored to sample the underlying soils because this FSB was not known to have leaked (water level variations were consistent with evaporation), coring was very difficult and potentially unsafe, and the soils beneath the 100-C and 105-DR FSBs were found to be clean. The 100-D Reactor Site Technical Baseline Report suggests that all of the FSBs had leaked. However, this statement is not supported by the process history of the 105-D FSB, and sampling of the underlying soils at the 105-C and 105-DR FSBs showed that they had not leaked. The FSB concrete floors from all of the previously decommissioned reactors were found to have various types of contamination that penetrated only a maximum of a few millimeters into the concrete. Sampling showed the contamination had not penetrated through the 0.3 to 0.6 meters (1 to 2 feet) of concrete in the FSB floors.

The 105-D Reactor subsites 118-D-6:2, 118-D-6:3, and 132-D-4 have been verified to be remediated in accordance with the applicable action memorandums and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required

The SubSite is Part Of:

Code: 118-D-6

Names: 118-D-6; 105-D Reactor Building

Code: 118-D-6:3

Classification: Accepted

Names: 118-D-6:3; 100-D FSB; 105-D Reactor Fuel Storage Basin and Underlying Soils

Reclassification: Interim Closed Out (7/27/2005)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: For the purpose of removal, the reactor facility was divided into several areas, known as Demolition Zones. The description of the demolition zone for subsite 118-D-6:3 is: Demolition zone 4 was located on the east side of the original reactor building. At ground level this zone consisted of the 400 FSB; the 411 wash pad; the 413, 413a, and 413b transfer bay areas; the 414a valve control room; and miscellaneous rooms 414 and 415.

Location: The 105-D Reactor site is located in the 100-D Area approximately 250 m (820 ft) north of the 105-DR Reactor.

Closure Info: 118-D-6:2, 118-D-6:3 and 132-D-4 were addressed as a group. The information below documents information for the group of sites.

The Cleanup Verification Package (CVP) for the 118-D-6:2, 105-D Reactor Ancillary Support Areas, Below-Grade Structures, and Underlying Soils; the 118-D-6:3, 105-D Reactor Fuel Storage Basin and Underlying Soils; and the 132-D-4, 105-D Reactor Exhaust Stack Foundation (CVP) demonstrated that removal action at the 105-D Reactor subsites 118-D-6:2, 118 D-6:3, and 132-D-4 has achieved the removal action objectives established in the applicable action memorandums and has achieved the corresponding RAGs established in the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings, the Sampling and Analysis Plan for Interim Closure of the 105-D and 105 H Reactor Below-Grade Structures and Underlying Soils (SAP), and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

The FSB water level was lowered upon closure of the reactor and further cleaned out during 1984. Ruptured fuel elements had caused the shielding water to become highly contaminated. The remaining water was processed and released to 116-D-10 pond. Then an asphalt emulsion

was applied to the floors and walls of the basin to fix loose contamination. The remaining basin hardware, perfs, buckets, and sludge were packaged and disposed of as low-level radioactive waste in the 200 Area burial grounds.

These areas were surveyed, and local contamination was removed in preparation for clean demolition. With the exception of the FSB walls and floor below 4.6 meters (15 feet), all structures in this zone were removed due to surface contamination being present. Sampling of underlying soils was not required because structures in this zone were not subjected to standing contaminated water and there was no mechanism for residual surface contamination to penetrate into the concrete and the underlying soil. The above- and below-grade structures were demolished and the demolition debris sent to ERDF. A section of 100 D-48:4 effluent pipeline remains buried under what was room 210. This section of pipeline will be considered separately from demolition zone 1 and deferred to the Remedial Action Project.

It was determined in the Sampling and Analysis Plan for Interim Closure of the 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils that the 105-D FSB would not be cored to sample the underlying soils because this FSB was not known to have leaked (water level variations were consistent with evaporation), coring was very difficult and potentially unsafe, and the soils beneath the 100-C and 105-DR FSBs were found to be clean. The 100-D Reactor Site Technical Baseline Report suggests that all of the FSBs had leaked. However, this statement is not supported by the process history of the 105-D FSB, and sampling of the underlying soils at the 105-C and 105-DR FSBs showed that they had not leaked. The FSB concrete floors from all of the previously decommissioned reactors were found to have various types of contamination that penetrated only a maximum of a few millimeters into the concrete. Sampling showed the contamination had not penetrated through the 0.3 to 0.6 meters (1 to 2 feet) of concrete in the FSB floors.

The 105-D Reactor subsites 118-D-6:2, 118-D-6:3, and 132-D-4 have been verified to be remediated in accordance with the applicable action memorandums and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]); therefore, institutional controls to prevent uncontrolled drilling or excavation into deep zone soils are required

The SubSite is Part Of:

Code: 118-D-6

Names: 118-D-6; 105-D Reactor Building

Code: 118-D-6:4

Classification: Accepted

Names: 118-D-6:4; 105-D Fuel Storage Basin Side Slope Soils

Reclassification: Interim Closed Out (12/21/2011)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: This subsite has been remediated. The subsite consists of the side slope soils associated with the Fuel Storage Basin, a former decontamination pad and one segment of an effluent pipeline.

The Fuel Storage Basin (FSB) side slopes were located just outside of the remaining structure of the 105-D FSB, on the east side of the original reactor building. The side slopes could not be completely remediated during the demolition of the Fuel Storage Basin (118-D-6:3). Subsequent characterization identified a contamination plume in the adjacent soil.

The decontamination areas consisted of two pads that were located on the north and south sides of the reactor for the purpose of equipment decontamination during D&D. The two areas were

considered together during variance and verification sampling. During field screening and sampling, the area of the north decontamination pad was found to be larger than addressed for the sample design. On the north side of the decontamination pad area, a segment of the 100-D-48:4 effluent pipeline (beneath room 210) could not be removed during the reactor D&D activities. The contamination from the pipeline was not fully remediated during that remedial action because of interferences with reactor removal activities and the potential to cause structural problems for the foundation of the reactor. Both the remaining effluent pipeline segment and the remaining area for the north decontamination pad were included in the 118-D-6:4 subsite and deferred to the Remedial Action Project for remediation and cleanup verification.

Location: The 105-D Reactor site is located in the 100-D Area approximately 250 m (820 ft) north of the 105-DR Reactor. The fuel storage basin was on the east side of the reactor.

Closure Info: The Fuel Storage Basin (FSB) side slopes could not be completely remediated during demolition of the 118-D-6:3 FSB. The side slopes were placed in a separate subsite (118-D-6:4) for future remedial action. Part of the northern decontamination pad and the area adjacent to a remaining section of effluent pipeline beneath 105-D Reactor Room 210, that could not be removed during remediation of the 100-D-48 pipelines, were also included in remediation of the 118-D-6:4 subsite. Remediation of the 118-D-6:4 subsite was performed from May 5, 2008 through August 24, 2009. The FSB remediation was halted in 2003 and clean fill was used to stabilize the excavation in support of the 105-D Reactor safe storage enclosure roof installation. It was documented that residual radiological contamination remained below the clean fill. The comparison of the 2008-2009 excavation footprint and the 2003 remediation was performed to confirm that the current activities were comprehensive in removing the volume of clean fill and accessing the remaining contaminated material. All material excavated from the 2008-2009 118-D-6:4 subsite remediation was removed and disposed at ERDF. There was no overburden material associated with the waste site. Borehole sampling was performed within the 118-D-6:4 excavation to support the remedial investigation. Borehole #C7857 was drilled in January 2011 to a depth of approximately 27 meters (90 ft) below ground surface.

The SubSite is Part Of:

Code: 118-D-6

Names: 118-D-6; 105-D Reactor Building

Code: 118-DR-2

Classification: Accepted

Names: 118-DR-2; 105-DR; 105-DR Reactor Building

Reclassification: None

Type: Reactor

Start Date: 1/1/1950

Status: Inactive

End Date: 1/1/1964

Description: The unit consists of: 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety and control systems; 2) 105-DR Reactor below-grade structures and underlying soil.

Location: The site was located at the south end of the 100 D/DR Exclusion Fence.

Release Description: It was suspected that the irradiated fuel storage basin leaked for a number of years prior to deactivation. The leakage rate was minimal, and the location of the leaks were never identified, with the exception of one leak outside of Door 14, that was identified and repaired in 1957.

Process Description: Construction of the 105-DR Reactor began in December 1947 and startup was achieved on October 3, 1950. The facility was a water cooled, graphite moderated nuclear reactor that irradiated uranium fuel rods. The design of the facility was based on the earlier Hanford Site reactors (118-D-6 and 118-F-8), and drawings of the older facilities were modified to form the design drawings for the 105-DR Reactor. The 105-DR Reactor was shut down on December 30,

1964. Deactivation of the reactor was completed in early 1971. Between 1972 and 1986, the southwest portion of the 105-DR Reactor building was used as a research laboratory known as the 105-DR Large Sodium Fire Facility (LSFF). Since deactivation, the 105-DR Reactor has been in a condition of minimum surveillance and maintenance (S&M). Significant deterioration had occurred, particularly in the roof sections over the fan room and work area. Permanent decommissioning alternatives for the Hanford Site production reactors were assessed in the Final Environmental Impact Statement, Decommissioning of the Eight Surplus Production Reactors at the Hanford Site (DOE 1992). A Record of Decision (ROD) was issued by the U.S. Department of Energy (DOE) (58 Federal Register 48509). The ROD alternative selected was to place the reactors into a safe storage condition for up to 75 years. After Interim Safe Storage (ISS), the reactors would be transported in one piece to a specially prepared burial facility in the 200 West Area of the Hanford Site.

Waste Type: Equipment
Waste This unit contained radiation levels estimated at 13,500 curies, 85,300 kilograms (94 tons) of
Description: lead, 2.8 cubic meters (100 cubic feet) of asbestos, and 230 kilograms (500 pounds) of cadmium.

This Site has the Following SubSites:

Code: 118-DR-2:1

Names: 118-DR-2:1; 105-DR Reactor Core and ISS Project

Code: 118-DR-2:2

Names: 118-DR-2:2; 105-DR Reactor Below-Grade Structures and Soil

Code: 118-DR-2:1

Classification: Accepted

Names: 118-DR-2:1; 105-DR Reactor Core and ISS
Project

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: Deactivation of the reactor was completed in early 1971. Subsequently the 105-DR ISS Project was completed in January 2003. This process is designed to safely contain the reactor for up to 75 years. The final footprint was reduced by 78% after the safe storage enclosure project was completed.

Location: The site was located at the south end of the 100 D/DR Exclusion Fence.

The SubSite is Part Of:

Code: 118-DR-2

Names: 118-DR-2; 105-DR; 105-DR Reactor Building

Code: 118-DR-2:2

Classification: Accepted

Names: 118-DR-2:2; 105-DR Reactor Below-Grade
Structures and Soil

Reclassification: Interim Closed Out (1/15/2004)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: 105-DR Phase III Below Grade Structures and Underlying Soils

Zone 1 consisted of the Fuel Storage Basin (FSB), storage and transfer area, storage area, and the transfer bay; and the soils underlying the FSB, collectively referred to as the FSB area. The

FSB area was located on the east side of the 105 DR Reactor building and served as an underwater collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. This zone was located entirely within the deep zone.

Zone 2 consisted of the valve pit that received wastewater from the reactor building. Zone 2 was entirely within the deep zone.

Zone 3 consisted of the solids feed area, the north water tunnel, and the trench under the accumulator room. The below-grade rooms, tunnel, and trench have been wetted by isolated spills and standing rainwater that may have acted as a hydraulic driver for potential contamination. Zone 3 was within the shallow zone

Zone 4 consisted of the gas tunnel, exhaust plenum, gas recirculation tunnel, and the instrument room. Similar to Zone 3, these rooms and tunnels would have been wetted by isolated spills and standing rainwater, which may have acted as a hydraulic driver for potential contamination. Zone 4 was entirely within the deep zone.

Zone 5 consisted of the side slope soils around the FSB, the south effluent pipeline, and the soil under the slab.

Also included in Zone 5 was a section of 105-DR process effluent pipeline located adjacent to the south side of the FSB. This area was included in Zone 5 because of its proximity to the side slopes of the FSB. Zone 5 was within the shallow zone.

The three decon areas were located around the reactor for the purpose of equipment decontamination. The northwest decon area was approximately 8.0 meters by 8.8 meters (26 feet by 29 feet). The northeast decon area was approximately 12 meters by 9.8 meters (39 feet by 32 feet), and the south decon area was approximately 16 meters by 17 meters (52 feet by 56 feet).

Closure Info: 118-DR-2:2 and 100-D-49:4 were addressed as a group. The information below documents information for the group of sites.

The Cleanup verification package, (CVP-2003-00016), documents completion of removal action for this subsite in support of the 105-DR Reactor Interim Safe Storage Project. The 100-D-49:4 region consisted of the north effluent pipe tunnel, which has been removed. The soil beneath the floor and the side slopes were sampled for cleanup verification purposes

Waste site contaminants of concern (COCs) identified through process knowledge were identified in the Sampling and Analysis Plan for the 105-F and 105-DR Phase III Below Grade Structures and Underlying Soils (105-DR SAP) (DOE/RL-99-35). The 105-DR SAP classified the different areas and structures into affected media that were similar in characteristics and contaminants.

The COCs for subsite 100-D-49:4 included: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium-154, europium-155, nickel-63, plutonium 238, plutonium-239/240, strontium-90, technitium-99, uranium-234, uranium-235, uranium-238, hexavalent chromium, lead, mercury and polychlorinated biphenyls.

The COCs for subsite 118-DR-2:2 included: americium-241, barium-133, carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, technetium-99, tritium, uranium 233/234, uranium 235, and uranium 238. For cleanup verification the different areas were designated as "zones," based on the type of deposition, depth, and/or type of use. Refer to Appendix A of the CVP-2003-00016 for sample numbers and results.

Zone 1 consisted of the Fuel Storage Basin (FSB), storage and transfer area, storage area, and the transfer bay; and the soils underlying the FSB, collectively referred to as the FSB area. The FSB area was located on the east side of the 105 DR Reactor building and served as an underwater collection, storage, and transfer facility for the irradiated fuel elements discharged from the reactor. This zone was located entirely within the deep zone.

Zone 2 consisted of the valve pit that received wastewater from the reactor building. During the cleanup verification sampling, high levels of hexavalent chromium and polychlorinated biphenyls (PCBs) were discovered on the valve pit concrete floor. Therefore, the floor was removed and disposed of at the ERDF, then the valve pit walls and soil underneath the concrete floor were sampled and analyzed for hexavalent chromium and PCBs for verification purposes. Zone 2 was entirely within the deep zone.

Zone 3 consisted of the solids feed area, the north water tunnel, and the trench under the accumulator room. The below-grade rooms, tunnel, and trench have been wetted by isolated spills and standing rainwater that may have acted as a hydraulic driver for potential contamination. Only concrete floors were sampled and analyzed for these areas, as the walls are expected to contain little or no contamination. Ceilings were removed and disposed of at the ERDF. Zone 3 was within the shallow zone

Zone 4 consisted of the gas tunnel, exhaust plenum, gas recirculation tunnel, and the instrument room. Similar to Zone 3, these rooms and tunnels would have been wetted by isolated spills and standing rainwater, which may have acted as a hydraulic driver for potential contamination. Therefore, only the concrete floors were sampled and analyzed. Zone 4 was entirely within the deep zone.

Zone 5 consisted of the side slope soils around the FSB, the south effluent pipeline, and the soil under the slab. The soils adjacent to the 105-DR FSB were sampled to verify that shallow zone soil cleanup levels would be met if the walls of the FSB were removed. The soils beneath the slab were sampled for mercury because of the potential for mercury contamination from a floor drain in the slab.

Also included in Zone 5 was a section of 105-DR process effluent pipeline located adjacent to the south side of the FSB that was removed and the soil was sampled as part of the adjacent soils beneath the FSB. The concrete was removed from this location and the soil was sampled for verification purposes. This area was included in Zone 5 because of its proximity to the side slopes of the FSB. Zone 5 was within the shallow zone.

The three decon areas were located around the reactor for the purpose of equipment decontamination. The northwest decon area was approximately 8.0 meters by 8.8 meters (26 feet by 29 feet). The northeast decon area was approximately 12 meters by 9.8 meters (39 feet by 32 feet), and the south decon area was approximately 16 meters by 17 meters (52 feet by 56 feet).

An individual calculation of contaminated material removed for cleanup of the pipeline area was not provided in the CVP. A total of approximately 7,220 cubic meters (25,500 cubic feet) of contaminated materials were disposed at the ERDF. The results of this effort indicated that the materials from the site containing COCs at concentrations exceeding RAGs have been excavated and disposed at the ERDF.

These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario, and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River. The site is verified to be remediated in accordance with the Action Memorandum (EPA et al. 1998)

and can be backfilled.

The SubSite is Part Of:

Code: 118-DR-2

Names: 118-DR-2; 105-DR; 105-DR Reactor Building

Code: 100-F-52

Classification: Accepted

Names: 100-F-52; 146-FR Radioecology/Aquatic Biology Laboratory Soil

Reclassification: No Action (6/27/2008)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consisted of the soil under and around the former 146-FR Radioecology and Aquatic Biology Laboratory. After remediation, the site was level to grade with no visual indication of the former facility.

Location: The 146-FR Radioecology and Aquatic Biology Laboratory was located approximately 457 meters (1500 feet) northeast of the 105-F Reactor Building and about 122 meters (400 feet) southwest of the 1904-F Outfall.

Process Description: Process liquids were supplied to the 146-F Fish Laboratory from several sources. Raw water was pumped from the 181-F River Pump House; chemically treated, pre-reactor process water was pumped from the 190-F Main Process Pump House and Annex; and reactor effluent process water was pumped from the 107-F Retention Basin. Aquatic river creatures were exposed to varying amounts of process effluents from 100 F Area operations, and the facility process wastes exited the south end of the building and passed through the 1904-F Outfall to the Columbia River.

Related Sites/Structures: The facility was associated with the 181-F River Pump House, the 190-F Main Process Pump House and Annex, the 107-F Retention Basin, and the 1904-F Outfall.

Waste Type: Soil

Waste Description: During research of the site history, no reports were found of unplanned discharges to the soil from this building. However, because of the open-pond operations within the building, it is prudent to assume such discharges may have occurred. Confirmatory sampling should be considered.

Contaminants of concern/potential concern are based on those for the 1904-F Outfall (116-F-8). Contaminants of concern include cobalt 60, europium 152, europium 154, europium 155, and hexavalent chromium. Contaminants of potential concern include carbon 14, cesium 137, nickel 63, and strontium 90.

Closure Info: The current site conditions, as documented in the Remaining Sites Verification Package 2008-022, have achieved the remedial action objectives and the corresponding remedial action goals as established in the Remedial Design Report/Remedial Action Work Plan for the 100 Area and the Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site (Remaining Sites ROD).

Previous remediation efforts for several sites had partially overlapped the 100-F-52 waste site. A small area along the northern edge of the 146-FR Laboratory footprint was removed along with pipelines associated with the 100-F-33 and 100-F-19 waste sites. Soils that were adjacent to the eastern edge of the 146-FR Laboratory footprint were excavated when pipelines associated with the 1607-F6 waste site were removed. When pipelines associated with the 100-

F-19 waste site were removed, the entire southern edge of the 146-FR Laboratory footprint was removed. Excavation associated with the 100-F-26:12 Main Process Sewer Pipeline removed soils underlying the entire southern edge of the 146-FR Laboratory footprint.

No indication of the former facility or concrete footprint was found during a March 2007 site visit. The site was partially covered with excavation stockpiles derived from the 100-F-26:12 Main Process Sewer Pipeline excavation. That excavation had removed all of the shallow zone soils from the southern 5 meters (16 feet) of the 146-FR Laboratory footprint.

Geophysical surveys over several sections of the 146-FR Radioecology and Aquatic Biology Laboratory footprint were performed as part of the investigations of adjacent waste sites. In order to get a complete survey for the site, several surveys were merged to get an overall geophysical interpretation map of the 100-F-52 waste site.

The resulting survey revealed an area of scattered debris and three pipeline segments. Two of the pipeline segments were just outside of the 146-FR Laboratory footprint. Those two pipeline segments were part of the 100-F-41 pipeline site and were rejected as a waste site because they were used for treated water. A third section of pipe, within the footprint of the 146-FR Laboratory, was approximately 22 meters (72 feet) long and 2 meters (3.3 feet) below ground surface. This section of pipe may also belong with 100-F-41; however, its location was not well documented. Therefore, the pipe was included as part of the 100-F-52 waste site.

A circular subsurface feature, approximately 12 meters (39 feet) north of the 146-FR Laboratory, can also be seen in the geophysical interpretation. The location of the circular subsurface feature clearly identified it as the remnants of the circular pond that was closed as part of the 100-F-33 waste site. Work Instruction for Confirmatory Sampling of the 100-F-52 (146-FR) Radioecology and Aquatic Biology Laboratory Soil, 0100F-WI-G0051.

Confirmatory sampling was performed on November 28, 2007 and February 20, 2008 in accordance with Work Instruction for Confirmatory Sampling of the 100-F-52 (146-FR) Radioecology and Aquatic Biology Laboratory Soil. A 5 centimeter (2-inch) diameter carbon steel pipe was discovered in each of two trenches, both trenches were sampled and backfilled. On February 20, 2008, the trenches were re-excavated, the pipes breached, revealing scale or sediment in one pipe which was sampled.

Contaminants of potential concern (COPCs) were identified based on COPCs developed for the 100-F-33, 146-F Aquatic Biology Fish Ponds utilizing the protocol in the 100 Area Remedial Action Sampling and Analysis Plan and historical information about activities at the 146-F Fish Laboratory and 146-F Aquatic Biology Fish Ponds. COPCs included: cobalt-60, cesium-137, europium-152, europium-154, europium-155, plutonium-238, plutonium-239/240, strontium-90, uranium-234, uranium-235, hexavalent chromium, mercury, lead, and polycyclic aromatic hydrocarbons (PAHs). Further site-specific evaluation identified arsenic, barium, cadmium, total chromium, selenium, silver, and polychlorinated biphenyls (PCBs) as COPCs. Carbon-14 and nickel-63 were also identified as COPCs due to the use of reactor process water at these facilities. Also, petroleum hydrocarbons were added due to the repeated mention of the use of water-soluble lubricating oil (Calol) in the reactor process water.

Confirmatory samples were analyzed using U.S. Environmental Protection Agency-approved analytical methods. The laboratory-reported data results for all constituents were stored in the WCH Environmental Remediation System (ENRE) project-specific database prior to submission for archival in the Hanford Environmental Information System (HEIS) site-wide database and were summarized in Appendix B of the RSVP.

The results of confirmatory sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for

unrestricted use of shallow-zone soils (i.e., surface to 4.6 meters [15 feet] deep). The results also demonstrated that residual contaminant concentrations were protective of groundwater and the Columbia River. Site contamination did not extend into the deep-zone soils; therefore, no institutional controls to prevent uncontrolled drilling or excavation into the deep zone are required.

Code: 100-F-64 **Classification:** Accepted
Names: 100-F-64; Yellow and Red Stained Soil Along Railroad Tracks Near 1713-FA **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site is red and yellow stained soil straddling railroad tracks with elevated concentrations of lead (157856).
Location: This area is approximately 27 meters (90 feet) east of the 100-F-47 WIDS boundary and north of the 1713-FA Essential Materials Building

Code: 100-F-65 **Classification:** Accepted
Names: 100-F-65; Green Stained Area Near Tracks Immediately West of 190-F **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of green stained soil along the railroad tracks immediately west of the 190-F Building. The site was discovered on March 28, 2011 while remediating 100-F-57.
Location: This area is approximately 20 meters (66 feet) west of the northwest corner of the 190-F Building along the railroad tracks.

Code: 118-F-8 **Classification:** Accepted
Names: 118-F-8; 105-F Reactor Building **Reclassification:** None
Type: Reactor **Start Date:** 1/1/1944
Status: Inactive **End Date:** 1/1/1965
Description: The site is an inactive plutonium production reactor that has been placed in Interim Safe Storage. The unit consists of a reactor block with associated shielding and controls, and contaminated portions of the reactor building.
Location: The site is located in the southeastern corner of the 100F Area.
Process Description: Water from the Columbia River was extensively treated before passing through the reactor. It then circulated in a single pass through the reactor process tubes, cooling tubes imbedded in the thermal shield, and reactor horizontal control rods. After exiting the reactor, the cooling water passed through a retention basin and was then discharged to the river. During reactor operations, fuel cladding failures sometimes occurred while the fuel elements were in the process tubes. The first such cladding failure in any reactor occurred at the F Reactor in 1948. Over the operational lifetime of the reactor, there were several hundred such cladding failures. When fuel cladding failed, the cooling water in the affected process tubes became highly contaminated and elevated radiation levels were observed in the cooling water exiting the reactor core. This highly contaminated water was diverted to a trench for ground disposal rather than to the Columbia River. During reactor operations and reactor shutdowns, large

quantities of decontamination solutions were used routinely to remove radionuclides from reactor equipment and facility surfaces. Decontamination activities took place at the dummy decontamination facility wash pad, which was adjacent to the fuel storage basin. Known decontamination solutions included chromic acid, citric acid, oxalic acid, nitric acid, sulfamic acid, sulfuric acid, and sodium fluoride. Other chemicals, including organic solvents, were also used for some decontamination processes. The reactor had many safety and control mechanisms. The function of the horizontal control rods (HCRs) was to control the equilibrium and transient power levels of the reactor during routine operations and to maintain the desired neutron flux distribution. The HCRs were each about 11.0 meters (36 feet) long, with the poison (neutron absorbing) segment being about 8.96 meters (29.4 feet) long. Two of the rods were electrically driven and seven were hydraulically driven. The latter were known as shim rods and were used to achieve ongoing operational control and desired fluctuations. The vertical safety rods (VSRs) were 11.9-meter (39-foot) long, stainless steel sleeves with 0.74-millimeter (3/16-inch) thick boron stainless steel sleeves inside. Each VSR was inserted and withdrawn from the reactor via two separate cables wound around a winch located 12.2 meters (40 feet) above the top of the reactor. In cases of automatic shutdown ("scram") of the reactor, the electromagnetic clutch holding each rod would be deenergized (demagnetized), and the rods would free fall by gravity into channels penetrating the reactor. A "last ditch" safety system, a boric acid solution, was held in a large pedestal tank at the top of each reactor and connected to each of the 29 VSR channels via 1.27-centimeter (0.5-inch) pipes. The liquid boron system was later replaced by a system that used solid boron steel and carbon steel balls (Ball 3X System). The normal method for reactor refueling was displacement charge-discharge during reactor shutdown. During a refueling operation, the tubes to be discharged had their rear nozzle caps removed. New fuel elements were pushed into the process tube by a charging machine which caused the irradiated fuel elements in the tube to be displaced. The displaced irradiated fuel elements dropped into a water filled discharge chute and slid down into the metal pickup area at the end of the storage basin. The 6.1 meters (20 feet) of water in the chute area provided shielding as the elements accumulated and were sorted into buckets using long, hand-operated tongs. The buckets were then transferred by an overhead monorail system to the storage aisles where they were held for a time to allow the decay of short-lived radionuclides. Following the storage period, the buckets of fuel elements were moved by the overhead monorail system to the transfer area. At the transfer area, the irradiated fuel was loaded into a cask, then raised by a crane and placed in special railroad cars for shipment to the chemical reprocessing facilities in the 200 Area.

Waste Type: Asbestos (friable)

Waste Description: The site was estimated to contain less than 2.83 cubic meters (100 cubic feet) of asbestos.

Waste Type: Equipment

Waste Description: Before remediation and ISS the unit contained an estimated 16,000 curies of radionuclides, 85,300 kilograms (94 tons) of lead, and 13.6 kilograms (30 pounds) of cadmium.

This Site has the Following SubSites:

Code: 118-F-8:1

Names: 118-F-8:1; 105-F Below-Grade Structures and Underlying Soils; 105-F Reactor Ancillary Support Areas

Code: 118-F-8:2

Names: 118-F-8:2; 105-F Reactor Core and ISS Project

Code: 118-F-8:3

Names: 118-F-8:3; 105-F Reactor Fuel Storage Basin and Underlying Soils

the underlying soils of the former FSB, was zone 1. The 118-F-8:1 subsite was divided into three zones (zones 2, 3, and 4), and also included the equipment decontamination areas, which were used during 105-F D and ISS activities.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern (COC) from 1999 to December 2003. Components of each zone were summarized, including structure floor depths and contaminants of concern (COCs). Floor depths were below ground surface. COCs were identified through process knowledge and were listed in the 105-F SAP and the FSB SAP. For the following zones 118-F-8:3; Zone 1 - FSB and underlying soils, 118-F-8:1; Zone 2 - Valve pit, and the 118-F-8:1; Equipment Decontamination Areas the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, technetium-99, uranium-234, uranium-235, uranium 238, hexavalent chromium, barium lead, mercury and PCBs.

For subsites 118-F-8:1; Zone 3 (Gas recirculation tunnel, solids feed area, flow laboratory basement, East water tunnel, trench under accumulator room) and 118-F-8:1; Zone 4, (West inlet water tunnel, east inlet water tunnel, 315 exhaust plenum, 316 exhaust plenum, pipe tunnel, southeast tunnel) the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium and lead.

The CVP-2003-00017 demonstrated that the removal action at the 105-F Reactor subsites 1 and 3 have achieved the objectives established in the Action Memorandum and have achieved the corresponding cleanup standards established in the 105-F SAP, the FSB SAP, and the 100 Area RDR/RAWP.

The remaining soils and concrete at the 105 F Reactor site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 105 F Reactor site containing COCs at concentrations exceeding the cleanup standards have been excavated and disposed of at ERDF. These results also indicated that residual concentrations in the shallow zone will support future land uses. However, the acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 105-F Reactor subsites 1 and 3 are verified to meet protectiveness standards in accordance with the Action Memorandum.

The SubSite is Part Of:

Code: 118-F-8

Names: 118-F-8; 105-F Reactor Building

Code: 118-F-8:2

Classification: Accepted

Names: 118-F-8:2; 105-F Reactor Core and ISS Project

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: Construction of the F Reactor was initiated in December 1943. Initial startup of the reactor was achieved on February 25, 1945. The F Reactor was shut down on June 25, 1965. Until the start of the Interim Safe Storage (ISS) Project, the F Reactor had been in a condition of minimum surveillance and maintenance (S&M). The primary objective of the 105-F Reactor ISS Project is to provide storage for up to 75 years with minimal maintenance required. Design objectives are summarized as follows: safe storage for up to 75 years, no credible releases of radionuclides to the environment under normal design conditions, interim inspection required only on a 5-year

frequency, further evaluation of extending this frequency will be done by the project group upon completion of the first 5-year surveillance. Access to the 105-F Reactor SSE is through the utility room. During periods of storage, the door to the SSE (located inside the utility room) will be locked and welded shut. The door to the utility room will be locked except during routine S&M activities. The SSE is entered only for periodic S&M activities. The 0.9 to 1.5-meter (3 to 5-foot)-thick concrete walls and the welded door provide the security barrier for the facility; therefore, a locked fence around the SSE is not required. The original footprint area of the reactor building was approximately 4,994 meters squared (53,750 square feet). The final footprint area of the safe storage enclosure is 999 meters squared (10,750 square feet). Thus, the footprint area of the reactor was reduced by 80%. To avoid confusion, the footprint area is strictly the at-grade area and does not include the square footage of any above-grade rooms (e.g., sample rooms, ready room, upper electrical room, or exhaust plenums) or below-grade rooms/tunnels. The new steel roof decking was covered with foam and two applications of silicon rubber.

Location: The site is located in the southeastern corner of the 100F Area.

The SubSite is Part Of:

Code: 118-F-8

Names: 118-F-8; 105-F Reactor Building

Code: 118-F-8:3

Classification: Accepted

Names: 118-F-8:3; 105-F Reactor Fuel Storage Basin and Underlying Soils

Reclassification: Interim Closed Out (5/6/2004)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The fuel storage basin, located on the south side of the 105-F Building, was the underwater collection, storage, and transfer facility for irradiated fuel elements discharged from the reactor. This area included the fuel element discharge pickup area, fuel storage area (basin), fuel transfer area, wash pad area and underlying soils.

In 1970 the basin was pumped until 0.6 meters (2 feet) of water remained, where sediment/sludge and miscellaneous items were found (fuel buckets, fuel spacers, process tubes, tongs, wooden floor decking, and monorail pieces). Fine streambed sand was then placed into the remainder of the basin (5.4 meters [18 feet]).

Closure Info: 118-F-8:1, 118-F-8:3 and 100-F-10 were addressed as a group. The information below documents information for the group of sites.

Demolition of the facilities in subsites 1 and 3 began in fiscal year 1998. In 2004 the Cleanup Verification Package (CVP) 2003-00017 documented completion of the removal action and verified the protectiveness of subsites 118-F-8:1 (105-F Reactor Ancillary Support Areas, Below-Grade Structures and Underlying Soils) and 118-F-8:3 (105-F Fuel Storage Basin (FSB) and underlying soils).

Removal action "applicable or relevant and appropriate requirements" (ARARs) and cleanup standards for the 105-F site were established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, Richland Operations Office, in concurrence with the Washington State Department of Ecology. These ARARs and cleanup standards for the subsites were documented in the Action Memorandum.

Removal of below grade structures to a minimum of 0.9 meters (3 feet) below surrounding grade outside of the 105 F Reactor core shield walls, verification that structures and soil left in

place achieved specified cleanup standards, and disposal of contaminated excavation materials at the Environmental Restoration Disposal Facility in the 200 Area of the Hanford Site. In some cases, the floors of the below-grade structure (i.e., the valve pit and the solids feed area) or the entire structure (i.e., the FSB) were removed.

The subsite was divided into areas or zones as specified in the 105-F SAP and the FSB SAP according to process history and structure depth. These zones were treated as separate units such that cleanup evaluations were conducted on each individual area or zone. The 118-F-8:3, the underlying soils of the former FSB, was zone 1. The 118-F-8:1 subsite was divided into three zones (zones 2, 3, and 4), and also included the equipment decontamination areas, which were used during 105-F D and ISS activities.

Cleanup verification samples, including QA/QC samples, were collected and analyzed for the established contaminants of concern (COC) from 1999 to December 2003. Components of each zone were summarized, including structure floor depths and contaminants of concern (COCs). Floor depths were below ground surface. COCs were identified through process knowledge and were listed in the 105-F SAP and the FSB SAP. For the following zones 118-F-8:3; Zone 1 - FSB and underlying soils, 118-F-8:1; Zone 2 - Valve pit, and the 118-F-8:1; Equipment Decontamination Areas the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, technetium-99, uranium-234, uranium-235, uranium 238, hexavalent chromium, barium lead, mercury and PCBs.

For subsites 118-F-8:1; Zone 3 (Gas recirculation tunnel, solids feed area, flow laboratory basement, East water tunnel, trench under accumulator room) and 118-F-8:1; Zone 4, (West inlet water tunnel, east inlet water tunnel, 315 exhaust plenum, 316 exhaust plenum, pipe tunnel, southeast tunnel) the COCs were: americium-241, barium-133, carbon-14, cobalt-60, cesium-137, europium-152, europium -154, europium-155, nickel-63, plutonium-238, plutonium-239/240, strontium-90, hexavalent chromium and lead.

The CVP-2003-00017 demonstrated that the removal action at the 105-F Reactor subsites 1 and 3 have achieved the objectives established in the Action Memorandum and have achieved the corresponding cleanup standards established in the 105-F SAP, the FSB SAP, and the 100 Area RDR/RAWP.

The remaining soils and concrete at the 105 F Reactor site have been sampled, analyzed, and modeled. The results of this effort indicate that the materials from the 105 F Reactor site containing COCs at concentrations exceeding the cleanup standards have been excavated and disposed of at ERDF. These results also indicated that residual concentrations in the shallow zone will support future land uses. However, the acceptability of unrestricted direct exposure to deep zone soils has not been demonstrated; therefore, institutional controls to prevent uncontrolled excavation into the deep zone (i.e., below 4.6 meters [15 feet]) are required. The 105-F Reactor subsites 1 and 3 are verified to meet protectiveness standards in accordance with the Action Memorandum.

The SubSite is Part Of:

Code: 118-F-8

Names: 118-F-8; 105-F Reactor Building

Code: 118-F-8:4

Classification: Accepted

Names: 118-F-8:4; 105-F Fuel Storage Basin West Side
Adjacent and Side Slope Soils

Reclassification: Interim Closed Out (3/4/2008)

Type: Reactor

Start Date:

Status: Inactive**End Date:****Description:** This subsite consists of an area of soil at the western boundary of the 118-F-8:3, FSB excavation. It was identified during the remediation of subsites 1 and 3.**Closure Info:** The Cleanup Verification Package for the 118-F-8:4 Fuel Storage Basin (FSB) West Side Adjacent and Side Slope Soils documents that the subsite has been remediated in accordance with the Removal Action Work Plan for 105-DR and 105-F Building Interim Safe Storage Projects and Ancillary Buildings and meets the remedial action objectives and goals for interim closure as established in the Action Memorandum and, by reference, the 100 Area Remedial Action Sampling and Analysis Plan (SAP) and the Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

Remediation of the subsite began on March 14, 2007, and was completed on June 22, 2007. Remedial action activities involved removing the uncontaminated overburden, the buried contaminated material, and the underlying contaminated soil for disposal. Following remediation and field screening of the waste site, verification sampling was conducted between May 31 and June 22, 2007.

The 118-F-8:4 subsite has been verified to meet protectiveness standards in accordance with the Action Memorandum. In accordance with this evaluation, the verification sampling and modeling results support a reclassification of the site to Interim Closed Out.

The SubSite is Part Of:**Code:** 118-F-8**Names:** 118-F-8; 105-F Reactor Building

Code: 100-H-54**Classification:** Discovery**Names:** 100-H-54; GPERS 100-H Shoreline Survey
Unplanned Release**Reclassification:** None**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:****Description:** On June 3, 2004, a radiological field survey of the 100-H Shoreline was conducted. The system used to collect the data was a man-carried back pack with walking stick system called the Global Positioning Environmental Radiological Surveyor (GPERS). The survey was performed as part of the risk assessment work performed by Bechtel Hanford, Inc. (BHI).**Location:** The site is located in the 100-HR-1 Operable Unit, approximately 150 meters (432 feet) southeast of the 107-H Retention Basin. The site is along the Columbia River embankment. The site is located at E 578294.96, N 152528.72. This is the location with the maximum gamma reading.**Process Description:** The GPERS equipment enables the operator to document scanning measurements, stationary radiological measurements, and sample locations of surfaces with the radiological readings and exact coordinates (with 2 cm [0.8 in]) automatically logged in real time. (See photo #1). Approximately 4,030 radiological field screening survey points were collected in the detailed image (See image #3). This detailed area is 100-H-54. Image #2 represents 25,928 readings that were collected over a larger area. The green points to the north 100-H-54 are the approximate location of 100-H-36 Spillway site.**Waste Type:** Soil**Waste Description:** The site is an area of systematically elevated radiological activity, generally less than twice background measurements, as shown in the GPERS plot (Image #1, Image #2). No survey data

has been located for the area between the survey area shown in the images (Image #1, Image #2) and the 116-H-7 (107-H Retention Basin) remediation footprint.

Code: 100-H-56	Classification: Accepted
Names: 100-H-56; H-Area Miscellaneous Pipelines	Reclassification: None
Type: Product Piping	Start Date:
Status: Inactive	End Date:
Description: The site consists of all the 100-H Area miscellaneous pipelines not associated with an existing waste site.	

These pipeline segments were discovered during a spatial analysis of the pipeline geographic information system (GIS) assignments with those contained in regulator approved work instructions and closure documents. Some of these pipeline segments were either not assigned to waste sites or incorrectly assigned to a waste site when compared to the documents. Additional pipeline segments were discovered in the field during field remediation activities.

The following pipeline segments have been included in this waste site:

- 1) The 15.2 cm (6 in) cast iron sanitary sewer services the 181-H building. It carried sanitary waste to the 1607-H4 septic tank and drainfield (M-1904-H sh 1, P-1211).
- 2) The 5.08 cm (2 in) steel pipeline carried filtered water from the Brine Pump House to the coal conveyor. The water supply originated from the 184-H Power House and traveled to the Brine Pump House through a 7.62 cm (3 in) steel filtered water line (100-H-51:3) before connecting to the 5.08 cm (2 in) steel filtered water pipeline (P-1418, P-1419).
- 3) The 2.54 cm (1 in) soft water line from the elevated water tower to the 184-H power house (P-1426, P-1216).
- 4) The 10.16 cm (4 in) schedule 40 steel water line supplied filtered water from the elevated water tank 187-H1 to the 119-H Sample Building (H-1-19805, H-1-19812, H-1-19849).
- 5) The 30.48 cm (12 in) filtered water line supplies water from the elevated storage tank 187-H1 to the 105-H Building (H-1-13254).
- 6) The 40.64 cm (16 in) filtered water line supplies water from the elevated storage tank 187-H1 and the 105-H Building (H-1-13254, P-4750, P-1221). Purportedly a 500 parts per million dichromate solution was added to the water left in the pipeline during descaling of the 105 High Tank piping in 1960 (HW-65726 SUPD).
- 7) The 15.2 cm (6 in) vitrified clay pipe sanitary sewer connects the south side of the 105-H building with 100-H-28:4 (H-1-19805).
- 8) The 15.2 cm (6 in) vitrified clay pipe connects the 110-H building with the sanitary sewer trench (100-H-30) (H-1-19824).
- 9) The 3.8 cm (1.5 in) steel sanitary water pipe connects the 110-H building with the sanitary water supply leading into the east side of the 1608-H building (H-1-19805, H-1-19812, H-1-70246).
- 10) The 40.6 cm (16 in) steel filtered water line supplies water from the elevated storage tank 187-H2 to the 105-H Building (H-1-13254, P-1220). Purportedly a 500 parts per million dichromate solution was added to the water left in the pipeline during descaling of the 105 High Tank piping in 1960 (HW-65726 SUPD).
- 11) The 10.16 cm (4 in) sanitary sewer connects the paint shop (1722-H) with 100-H-28:2.
- 12) The 2.54 cm (1 in) pipeline near 100-H-55. It is assumed to be a service water line. Refer to photograph taken on 10/26/2009.
- 13) A concrete encased pipe was discovered running between 577797 E by 152419 N and 577831 E by 152418 N. It was discovered during remediation of the 105-H Decontamination Pads (118-H-6:5) in July 2009.
- 14) A 10.16 cm (4 in) thin walled aluminum pipeline set in concrete running east/west near 600-

152. It resembles an irrigation pipe. Refer to photograph taken on 2/25/2009.
- 15) Temporary construction sewer line, septic tank and drain field west of 151-H (HW-24800-2, photo 2045).
- 16) A 15.2 cm (6 in) cast iron pipe discovered during excavation of 100-H-4 in January 2010. Refer to photograph taken on 1/18/2010.
- 17) A 1.9 cm (0.75 in) sodium silicate line from the storage tank in the 190-H Building to the 187-H2 Elevated Water Tower (H-1-13254).

Location: The pipeline segments are located throughout the 100-H Area.

Process There is no process history associated with the 100-H-56 waste site.

Description:

Code: 100-H-59 **Classification:** Accepted

Names: 100-H-59; 100-H Area Railroad Track Soil Contamination Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of contaminated soil discovered during the removal of the rail at the 100-H project. A 213 meter (700 foot) long trench of contaminated railroad bed, including 39 rails, 700 ties, and scattered debris in 25 piles, remains. The contaminated area is about 3,250 square meters (35,000 square feet). The railroad berm tapers from 2.6 meters (8.5 feet) to 0.3 meters (1 foot) above original grade.

Location: This site is along a railroad bed in the 100-H Area south and west of the 105-H Reactor.

Process There is no process history associated with the 100-H-59 waste site.

Description:

Code: 118-H-6 **Classification:** Accepted

Names: 118-H-6; 105-H Reactor Building **Reclassification:** None

Type: Reactor **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1965

Description: The unit consisted the 105-H Reactor which is represented the following subsites: 1, 105-H Reactor Core and ISS Project which includes the graphite moderator stack, biological and thermal shields, pressure tubes, safety and control systems; 2, 105-H Reactor Ancillary Support Areas, Below-Grade Structures and Underlying Soils; 3, 105-H Reactor Fuel Storage Basin and Underlying Soils; 4, 105-H Fuel Storage Basin Shallow Zone Side Slope Soils; 5, 105-H Decontamination Pads, 6, Deep Zone Side Slopes.

Location: The 105-H Reactor was located in the 100-H Area of the Hanford Site in southeastern Washington State.

Release It was suspected that the irradiated fuel storage basin leaked for a number of years prior to deactivation. The leak rate was small, and the location of the leak was never identified.

Description:

Process The 105-H Reactor was one of eight single-pass plutonium production reactors built along the Columbia River. Construction of the 105-H Reactor began in March 1948 with operations commencing on October 29, 1949. The 105-H Reactor was shut down in April 1965. During the shutdown activities it was determined that the FSB had leaked. A Record of Decision (ROD) was issued by the U.S. Department of Energy (DOE) (58 Federal Register 48509). The ROD alternative selected was to place the reactors into a safe storage condition for up to 75

years. After Interim Safe Storage (ISS), the reactors would be transported in one piece to a specially prepared burial facility in the 200 West Area of the Hanford Site. Miscellaneous process equipment and sludge was left in the basin, and the sludge was stabilized in place in 1970 with approximately 6 meters (20 feet) of soil backfill. In the years following deactivation, several other significant cleanup efforts were completed at the 105-H Reactor complex. These included the 1983 demolition of the 116-H reactor exhaust stack and above-grade exhaust ducting and the 1984 demolition of the 117-H exhaust air filter building.

Waste Type: Equipment

Waste Description: The primary source of contamination at the site was reactor coolant water and water in the FSB that became contaminated through contact with irradiated and ruptured fuel elements and components from the reactor cooling system. In 1987 this unit contained an estimated 15,000 curies of radionuclides, 102,000 kilograms (112 tons) of lead, less than 2.8 cubic meters (100 cubic feet) of asbestos, and 9 kilograms (20 pounds) of cadmium.

This Site has the Following SubSites:

Code: 118-H-6:1

Names: 118-H-6:1; 105-H Reactor Block and ISS Project

Code: 118-H-6:2

Names: 118-H-6:2; Below-Grade Structures and Underlying Soils; 105-H Reactor Ancillary Support Areas

Code: 118-H-6:3

Names: 118-H-6:3; 105-H Reactor Fuel Storage Basin and Underlying Soils

Code: 118-H-6:4

Names: 118-H-6:4; 105-H Fuel Storage Basin Shallow Zone Side Slope Soils

Code: 118-H-6:5

Names: 118-H-6:5; 105-H Decontamination Pads

Code: 118-H-6:6

Names: 118-H-6:6; 118-H-6:6 Deep Zone Side Slope Soils

Code: 118-H-6:1

Classification: Accepted

Names: 118-H-6:1; 105-H Reactor Block and ISS Project

Reclassification: None

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The CVP-2006-00003 documents the decontamination and decommissioning (D) and the interim safe storage (ISS) activities of the reactor facility. The safe storage enclosure (SSE) consists of the area within the shield walls, including the reactor block; the front-face work area; the elevator; the rear-face work area; ancillary support areas, and below-grade structures and soils. This part of the reactor building will remain in place to act as temporary storage for the reactor block in accordance with the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The original footprint area of the 105-H Reactor Building was approximately 6,934 square meters (74,640 square feet). The final ground-level footprint area of the safe storage enclosure (SSE) is 1,387 square meters (14,928 square feet). The areas of the reactor building that have been removed to ERDF represent 80% of the original footprint of the reactor building.

As much as was practical, all objects and surface contamination were removed. A new roof was added as part of the ISS effort. All doors were permanently sealed except for one door that remains locked and is welded shut. The only planned entrance to this structure is for

surveillance and maintenance activities that will occur approximately every 5 years. The entirety of the below-grade portion of the facility outside the SSE has been completely demolished, removed, and all below-grade areas were backfilled to eliminate future subsidence.

Location: The 105-H Reactor was located in the 100-H Area.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 118-H-6:2	Classification: Accepted
Names: 118-H-6:2; Below-Grade Structures and Underlying Soils; 105-H Reactor Ancillary Support Areas	Reclassification: Interim Closed Out (6/22/2006)
Type: Reactor	Start Date:
Status: Inactive	End Date:

Description: The 118-H-6:2 site consists of the 105-H Reactor ancillary support areas, below-grade structures, and underlying soils and has been remediated.

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in

conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 118-H-6:3

Classification: Accepted

Names: 118-H-6:3; 105-H Reactor Fuel Storage Basin and Underlying Soils

Reclassification: Interim Closed Out (6/22/2006)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The site has been remediated and interim closed out.

(118-H-6:3) 105-H Reactor FSB underlying soils and deep zone side-slope soils, including the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples

were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 118-H-6:4

Classification: Accepted

Names: 118-H-6:4; 105-H Fuel Storage Basin Shallow Zone Side Slope Soils

Reclassification: Interim Closed Out (11/10/2010)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The waste site encompasses the 118-H-6:4, 105-H Fuel Storage Basin Shallow Zone Side Slope Soils. The 118-H-6:4 waste site is located in the 100-HR-1 Operable Unit of the 100-H Area, on the south side of the 105-H Reactor Building. The verification sampling results support a reclassification to Interim Closed Out.

Closure Info: The cleanup verification package (CVP-2010-00005) has demonstrated that remedial action at the 118-H-6:4 subsite has met the Remedial Action Objectives (RAOs) and corresponding Remedial Action Goals (RAGs) as established in the approved Interim Action Record of Decision (ROD) and Remedial Design Report/Remedial Action Work Plan for the 100 Area (RDR/RAWP).

In April 2004, the 118-H-6:4 Fuel Storage Basin (FSB) Shallow Zone Soil subsite was deferred to the Remedial Action Program in order to support the safe storage enclosure (SSE) subcontractor replacement of the 105-H Building roof structure in accordance with the Action Memorandum for the 105-D & 105-H Reactor Facilities and Ancillary Facilities (Action Memorandum) (Ecology 2001). Backfill and stabilization of the FSB excavation was required to accommodate the roof replacement.

In March 2009, further remediation was performed at the 118-H-6:4 waste site, in accordance with the Remaining Sites ROD (EPA 1999), resulting in newly exposed shallow zone side-slope soils requiring verification sampling to interim close this waste site. The side-slope soils in the 105-H FSB shallow zone are at grade level to 4.6 m (15 ft) below grade level.

The contaminants of potential concern (COPCs) were specified in the Sampling and Analysis Plan for Interim Closure of the 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (DOE-RL 2001) and included radionuclides, lead, mercury, hexavalent chromium, and polychlorinated biphenyls (PCBs). The radionuclides include americium-241, carbon-14, cesium-137, cobalt-60, europium-152, europium-154, europium-155, nickel-63, neptunium-237, plutonium-238, plutonium-239/240, strontium-90, thorium-228, thorium-232, tritium, uranium-233/234, uranium-235, and uranium-238.

Remedial actions occurred in two stages. The first stage of remedial action was conducted in 2004 during D of the 105-H Reactor ancillary facilities and the FSB. In March 2004, verification samples indicated that radiological cleanup criteria had not been met in the FSB side-slope shallow zone (CVP-2006-00003). Further remediation was deferred to the Remedial Action Program to allow backfill and stabilization of the FSB excavation for construction of the SSE for the reactor core (WCH CCN 113402). Excavation of the subsite was resumed by the Field Remediation Project on March 17, 2009, and continued through June 29, 2009.

Approximately 4,096 bank cubic meters (BCM) (5,358 bank cubic yards [BCY]) of clean overburden material were removed and stockpiled east and west of the excavation to access the original 2004 excavation side-slope soil. Approximately 2,682 BCM (3,508 BCY) of contaminated shallow zone side-slope soil was excavated and direct loaded for disposal at the ERDF. No debris or anomalous material was found during the 2009 excavation.

The results also show that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This waste site does not have a deep zone; therefore, no deep zone institutional controls are required.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 118-H-6:5

Classification: Accepted

Names: 118-H-6:5; 105-H Decontamination Pads

Reclassification: Interim Closed Out (10/18/2011)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The waste site consists of three, irregularly shaped, decontamination (decon) pads that were created by the Environmental Restoration Contractor Decommissioning and Demolition Project during remedial activities. The decon pads consisted of compact level gravel areas where cranes and heavy equipment were staged to support the movement and decontamination of parts and equipment in support of the 105-H Reactor interim safe storage activities.

Location: The decon pads were arranged in an arc on the south-southeast side of the 105-H SSE.

Closure Info: Remediation of the 118-H-6:5 waste subsite was performed from April 30 through September 30, 2009. Most of the soil was removed and disposed at the ERDF. The original size of each decon pad was slightly smaller than the area excavated. The excavation depth for each pad was approximately 1.0 to 2.0 meters (3.3 to 6.6 ft). Twelve samples were collected from each of the three pads. In March 2009, oily soil was excavated from the surface of the decon pads and the area between and around the decon pads, and stockpiled separately on the decon pad for waste characterization and removal. Following the main excavation, from July 15 through September 30, 2009, focused stained soil excavations occurred to a depth of 3.0 to 4.0 meters (9.8 to 13.1 ft) in the center decon pad.

Following sample analysis of the original excavation, it was determined that additional remediation was needed because three sample locations exceeded direct exposure cleanup criteria. On October 11, 2010 approximately 0.5 meters (2 ft) of soil was removed from a 3 meters (10 ft) diameter area at the west decon pad, WDP-12 sample location.

A portion of the west decon pad was excavated on November 16, 2009 to perform confirmatory sampling at the 100-H-39 (Rejected waste site). Two focused samples were collected from a test pit. The excavated soil was placed back into the test pit, and the area was leveled to match the grade of the remediated 118-H-6:5 west decon pad excavation.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 118-H-6:6

Classification: Accepted

Names: 118-H-6:6; 118-H-6:6 Deep Zone Side Slope Soils

Reclassification: Interim Closed Out (6/22/2006)

Type: Reactor

Start Date:

Status: Inactive

End Date:

Description: The 118-H-6:6 site consists of the fuel storage basin deep zone side-slope soils. This subsite has been remediated.

Closure Info: 118-H-6:2, 118-H-6:3, 118-H-6:6, 100-H-9, 100-H-10, 100-H-13, 100-H-11, 100-H-12, 100-H-14 and 100-H-31 were addressed as a group. The information below documents information for the group of sites.

The CVP-2006-00003 documents that removal action at the 105-H Reactor subsites (118-H-6:2, 118 H-6:3, and 118-H-6:6) has achieved the removal action objectives and remedial action goals (RAO/RAGs) established in The Action Memorandum for the 105-D and 105-H Reactor Buildings and Ancillary Facilities and the Removal Action Work Plan for 105-D and 105-H Building Interim Safe Storage Projects and Ancillary Buildings. The RAGs were further detailed in the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 100 Area Remedial Action Sampling and Analysis Plan, and the Remedial Design Report/Remedial Action Work Plan for the 100 Area.

Per the Sampling and Analysis Plan for Interim Closure of 105-D and 105-H Reactor Below-Grade Structures and Underlying Soils (SAP), the 105 H Reactor ancillary support areas and below-grade structures (118-H-6:2) did not require sampling and analysis because the structures

were removed in their entirety and then disposed at the Environmental Restoration Disposal Facility (ERDF).

During D activities additional evaluation was required in order to determine if the soils underlying the former FSB floor (118-H-6:3) had achieved the RAGs. Therefore, the evaluation of the FSB soils and deep zone side-slope soils also refer to the soils underlying waste sites 100-H-11, 100-H-12, and 100 H 14.) To determine compliance with the RAGs, and in accordance with the 105-H Reactor SAP, radiological surveys and verification sampling analysis were performed on the FSB underlying soils and deep zone side-slope soils.

These data were used in the RESRAD computer model to verify that cleanup criteria were satisfied. The local contamination was removed in preparation for clean demolition, and a fixative was applied as required. With one exception, there are no below-grade structures remaining. A portion of the FSB floor, at its northern end between the two access labyrinths to the D elevator, remains.

Verification soil samples were collected from soils underlying the former FSB floor in conformance with the 105-H Reactor SAP. Samples numbers All demolition debris from excavations associated with the area was sent to ERDF. Final cleanup verification samples for the FSB underlying soils and deep zone side-slope soils were collected following evaluation of field screening for radiological contaminants using global positioning environmental radiological surveyor (GPERS) and laser-assisted ranging and data system (LARADS) surveys. This field screening was performed in order to obtain an initial assessment of attainment of radiological cleanup levels

The sample design for the FSB underlying soils was developed specifically to address potential contamination from the known leakage of the FSB. Samples were collected from 10 random sample locations and 3 judgmental sample locations. At each location, soil grab samples were collected from two intervals: the first native soils below the FSB over a 0.3 meter (1 foot) interval and also at 2.4 meters (8 feet) to 3.1 meters (10 feet) below the surface. Soil samples were collected on March 24 and 25, 2004, and on April 6, 2004. The results of the focused sampling (i.e., 3 judgmental samples) are consistent with the statistical sampling results (i.e., the 10 random sample locations) and are provided in Appendix A of the CVP-2006-00003. As yet the results from the HEIS sample numbers have not been loaded into the database.

The verification sample design for the deep zone side-slope soils in 118-H-6:6 consisted of dividing the area into three equal sections, with a composite of four soil grab samples being collected within each area. Soil samples were collected on March 29, 2004. The verification sample design for the deep zone side-slope soils was in accordance with the 100 Area SAP and was detailed in the SAP.

Waste site contaminants of concern (COCs) identified in the SAP through process knowledge classified the different areas and structures into affected media, a summary list of the COCs included: Americium-241, Carbon-14, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Neptunium-237, Nickel-63, Plutonium-238, Plutonium-239/240, Strontium-90, Thorium-228, Thorium-232, Tritium (H-3), Uranium-234, Uranium-235, Uranium-238, Hexavalent chromium, Lead, Mercury, and PCBs.

The remaining soils at the 105 H Reactor site have either been deferred to the Field Remediation Closure Project or have been shown to meet the applicable RAGs through verification sampling, analysis, and RESRAD modeling. All excavated materials generated during the D activities were disposed at ERDF, and the area was backfilled to grade with clean backfill. These results also indicate that residual concentrations in the shallow zone will support future land uses that can be represented (or bounded) by a rural-residential scenario and that residual concentrations throughout the site pose no threat to groundwater or the Columbia River.

The subsite has been verified to be remediated in accordance with the Removal Action Work Plan for 105-D and 105 H Building Interim Safe Storage Projects and Ancillary Buildings and the Remedial Design Report/Remedial Action Work Plan for the 100 Area and can be interim closed. The CVP does not demonstrate the acceptability of unrestricted access to deep zone soils (i.e., below 4.6 meters [15 feet]) therefore, institutional controls to prevent uncontrolled drilling or excavation into these deep zone soils are required.

The SubSite is Part Of:

Code: 118-H-6

Names: 118-H-6; 105-H Reactor Building

Code: 100-K-84

Classification: Accepted

Names: 100-K-84; Red Soil Found Southwest of 118-K-1 **Reclassification:** None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of red stained soil. Five small areas were identified. Some of the material appeared crushed while other pieces looked like "slag". Similar piles of material have been found south of the 200 West Area, 100BC Area, and Riverland (McGee Ranch) Area.

Location: The site is located near the 118-K-1 Burial Ground. Three of the small areas were located in the gravel road that runs just southwest of the 118-K-1 Burial Ground. A fourth area is located on the berm between the gravel road and 126-K-1 Gravel Pit. The fifth area is located 154 m (505 ft) northeast of 126-K-1. The center of the five areas are: E569632.1, N146821.3; E569555.7, N146785.5; E569539.4, N146760.7; E569533.9, N146733.1; E569721.1, N147078.5.

Process Description: Crushed iron ore was a component of the concrete used in reactor and other facility construction, as it provided additional shielding. The material is highly magnetic. See photo #4 from the 100BC Area anomalies. Note that one sample result indicates 74,400 mg/kg iron, while the other sample indicates 103,000 mg/kg iron.

Waste Type: Soil

Waste Description: The waste is areas of red stained soil. X-ray diffraction (XRF) was performed immediately upon identification of the site. The XRF results indicated the presence of arsenic and lead. Later, the site was sampled for inorganics at Lionville. The sample numbers are J15DV5 and J15DV6. Sample number J15DV5 indicated 62.9 mg/kg arsenic and sample number J15DV6 indicated 116 mg/kg arsenic. Lead was not indicated as a contaminant in these two samples. Eberline performed a gamma scan for selected radionuclides. All results were below cleanup limits. The site contaminant of potential concern (COPC) is arsenic.

Code: 100-K-96

Classification: Accepted

Names: 100-K-96; 100KE River Effluent Pipeline; 100KE River Line; River Line (East) from 116-K-3 Outfall

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date: 4/14/2011

Description: This site is one of two adjacent, 213 centimeters (84 inches) diameter, carbon steel river effluent pipelines that extend 400 meters (1313 feet) from the face of 116-K-3 outfall structure to the Columbia River shoreline.

Both pipelines are exposed along most of the run, protruding 0.3 to 0.9 meters (1 to 3 feet) above the riverbed. The pipelines are approximately 122 centimeters (48 inches) apart. They were originally covered by a minimum of 0.6 meter (2 feet) of soil over their entire length. The initial 142 meters (467 feet) (from the reactors to the outfall inlet) are concrete piping, and the remainder welded steel piping.

Location: The 100-K-96 river pipeline is located on the Columbia River shore, adjacent to the 100K Area. It is east of the adjacent, inactive 100-K-80 pipeline.

Process Description: 105-KE reactor cooling water was collected and temporarily stored in the 107-KE Retention Basins. The cooling water was discharged to the river, bypassing (underneath) the 116-K-3 outfall structure, through the 100-K-96 river pipeline. Process sewer waste, from both 100-KE and 100-KW facilities, entered the outfall structure and dropped into the 100-KE river pipeline through large-diameter, vertical standpipes welded onto the river pipelines.

Retention basins lines (100-K-55 and 100-K-56) did not discharge through the outfall structure, but passed under it. They are continuous lines from each reactor that become the river effluent pipelines downstream of the outfall structure. The pipelines discharge into a recessed, sloped riprap river bed structure, measuring 9 meters (30 feet) wide by 12 meters (40 feet) long and 1 meter (3 feet) thick. The total drop from the face of the outfall structure to the discharge end of the pipelines is 18 meters (60 feet).

In 1955, the lines began to float and break. Both lines were damaged. To remedy the problem, a 2 to 3 meter (6 to 10 feet) thick riprap jetty was placed over the lines from the shoreline to a point approximately 320 meters (1050 feet) from the face of the outfall structure.

Related Sites/Structures: The pipeline site is associated with the 116-K-3 Outfall Structure, the 100-K-83 Spillway, the 100-K-47 process sewer, 100-K-56 process effluent lines, the 100-K-55 process effluent lines the 100-K-60 process sewer, the 116-KW-3 Retention Basins, the 100-K-80 river pipelines, and the 100-K-114 pipeline segment.

Waste Type: Process Effluent

Waste Description: The waste includes the pipeline and the contaminated scale contained within it. The effluent included both reactor cooling water and process sewer waste.

The Contaminants of Potential Concern are based on the 116-K-3 outfall, and include Co-60, Cs-137, Eu-152, Eu-154, Pu-239/240, and Sr-90.

Code: 100-K-110 **Classification:** Accepted

Names: 100-K-110; Soil beneath 183.2-KW Flocculation and Sedimentation Basins; the 183.3-KW Sand Filter Basins **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of the soil beneath the removed structures of the 183.2-KW Sedimentation Basins and 183.3 KW Sand Filter Basins.

Location: The site is located south of the 105-KW Reactor.

Code: 100-K-111 **Classification:** Accepted

Names: 100-K-111; Effluent Seepage Area from 116-K-2 **Reclassification:** None

Type:	Contamination Migration	Start Date:	
Status:	Inactive	End Date:	
Description:	The site is an area along the Columbia River shoreline appears to have been impacted by effluent from the 116-K-2 trench. This suspicion is evidenced by surface features visible in historical photographs (e.g. 37465-10CN).		
Location:	The site is 363 meters (1,191 ft) northeast of 116-KE-4 (107-KE Retention Basins).		
Process Description:	The 116-K-2 trench received contaminated effluent from floor drains and the metal storage basin overflows in the 105-KE and 105-KW Reactors, as well as emergency discharges from the KE and KW Retention Basins. Until 105-KE and 105-KW shut down around February 1, 1970, an undetermined amount of Retention Basin effluent (believed to be up to 37,854 LPM (10,000 GPM)) leaked through 107 cm (42 in) butterfly valves in the tank bottoms. Other periodic flows included low volume, neutralized, dummy decontamination waste, process-cooling water during charge/discharge; occasional special disposals; and an occasional tank of process cooling water that was collected after a fuel cladding failure. In 1978, the radioactive inventory of the trench was calculated at 2,100 curies (UNI-946).		
	Prior to 1977, surface contamination extended several hundred feet along the river side of the unit. This surface contamination was covered with up to 1.2 m (4 ft) feet of soil and gravel during the summer of 1977, and posted with AC-5-40 concrete markers (DC-0023). The concrete post locations have been surveyed. The entire site was posted as underground radioactive material.		
	The K Area geology and hydrology were such that liquid discharges to the soil within the operating area routinely bled out the shore line as it sloped to the river. Also within this area is the leach trench that was installed to drain the cobble filled trench from waste site 116-K-1 to the river (DOE/RL-94-61).		
	In September 1996 contaminated soil was removed from the site. In 1997, a single test pit was excavated on the south side of 116-K-2 (approximate coordinates were N147260/E569400). Radiological surveys of the soil did not identify any contamination.		
Related Sites/ Structures:	The surface liquids are northwest of the mile long trench (116-K-2). This trench was associated with 116-KE-4 and 116-KW-3 Retention Basins via the 100-K-55 and 100-K-56 pipelines.		

Code:	100-K-112	Classification:	Accepted
Names:	100-K-112; Surface Contamination from Waste Storage Operations	Reclassification:	None
Type:	Unplanned Release	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site is a posted Surface Contamination Area remaining after waste stored in this area was removed. Nothing is currently stored within the boundaries of the posted area.		
Location:	The waste site is located north of 105-KW, adjacent to the 100-K Area perimeter fence. It is north of Wakefiled Loop.		

Code:	118-KE-1	Classification:	Accepted
Names:	118-KE-1; 105-KE Reactor Building	Reclassification:	None
Type:	Reactor	Start Date:	1/1/1955

system. The 105-N Reactor Building is 137.77 meters (452 feet) by 78.94 meters (259 feet) with a stepped roof to 21.34 meters (70 feet). Additionally, a 55.78 meters (183 feet) by 21.34 meters (70 feet) basin and transfer area extend west at the southwest corner. The breakdown of the facility is 29 offices: 467.29 square meters (5,030 square feet); 4 shops: 1,009.82 square meters (10,870 square feet); storage: 295.42 square meters (3,180 square feet); common: 467.29 square meters (5,030 square feet); process, operating and fuel storage: 13,006 square meters (1.4E+05 square feet). The 109-N Building is a reinforced concrete, structural steel building with channeled steel siding. It is immediately adjacent to and shares a common wall (south wall of 109-N) with the 105-N Building. The 109-N Building contains a large pipe gallery on the north side which receives the primary reactor coolant system piping from the reactor for distribution into five separate cells each housing two large heat exchangers, a primary circulating pump and associated piping. A sixth cell contains a heat exchanger system for the moderator cooling system. The pipe gallery and steam generator cells are located in a reinforced concrete enclosure which, as in the case of the reactor, defines a confinement zone. Located outside of the confinement zone are the pump drive systems, dump condensers for disposal of export steam, condensate return pumps, other auxiliary equipment, a small chemical laboratory, and water sampling and monitoring facilities. A Service Bay has facilities for decontaminating the primary coolant system and contains the heating and ventilation equipment, shop areas, office and common space. The 109-N Building is 62.79 meters (206 feet) by 116.74 meters (383 feet) by 11.89 meters (39 feet) high. The breakdown of the facility is 3 offices: 75.25 square meters (810 square feet); 2 shops: 197.88 square meters (2,130 square feet); common: 111.48 square meters (1,200 square feet); processing area: 11,148 square meters (1.23E+05 square feet).

Location: The buildings (105-N and 109-N) are centrally (approximately) located within the 100-N Area of the Hanford Site.

Process Description: The N Reactor is a graphite-moderated, light-water cooled, horizontal-pressure-tube nuclear reactor. The reactor piping was designed for 13,000 kilopascals (1,825 pounds per square inch) and 320 degrees Celsius (600 degrees Fahrenheit) maximum operating conditions. Normal operating parameters were 11,000 kilopascals (1,600 pounds per square inch) and approximately 290 degrees Celsius (550 degrees Fahrenheit). The reactor coolant circulating pumps are single-stage, horizontal, centrifugal pumps with high pressure water injection seals to prevent reactor coolant loss. For special nuclear material production (no steam generation to the Hanford Generating Plant [HGP]), steam from the secondary side of ten steam generators was routed through 16 river water-cooled dump condensers. Condensate from the dump condensers was routed back to steam generators for regeneration. For dual-purpose operation, byproduct steam from the steam generators was supplied to the HGP to produce 860 megawatts (electrical). For either single- or dual-purpose operation, there were 12 steam generators. Ten of the steam generators were used during five-cell operation and eight for four-cell operation. During dual-purpose operation, most of the steam produced was available for use by HGP to generate electricity, with some reserved to power the reactor coolant system pump drive turbines and the in-plant turbine generator. The N Reactor used a confinement system based on the concept to release the initial burst of steam resulting from a postulated reactor coolant pipe break. When the confinement pressure subsided, the steam vents were closed and ventilation valves opened. The ventilated steam was filtered through charcoal and high efficiency filters to prevent any release of fission products from fuel failure. The 1312-N Liquid Effluent Retention Facility (LERF) was constructed as part of the safety enhancement program initiated in 1987. This facility served as a backup to the existing containment system and was designed to receive primary cooling water in the event of an emergency, such as fuel failure. The LERF facility consists of a high-density polyethylene bladder contained within a lined berm impoundment. The facility has never been used. The portion of the reactor coolant system within the N Reactor building consists of 16 parallel lines that conducted cooling water from an inlet water manifold in the 109-N Heat Exchanger Building to the reactor. Each of these 16 lines terminates in a vertical header to which is attached 54 to 66 individual pressure tube header-to-inlet nozzle connectors. Similar outlet risers and parallel lines conducted the coolant from the

pressure tube outlet nozzle-to-header connectors to an outlet water manifold. In the 109-N Heat Exchanger Building, which is immediately adjacent to the N Reactor building, the reactor coolant system consisted of six cells in parallel, each containing two steam generators (in parallel), a circulating pump and associated valves and instrumentation. Piping and steam generators in each of the six cells could be isolated from the main header piping by means of isolation valves. Reactor coolant pressure and temperature were controlled to prevent boiling at any point in the system. A surge vessel (pressurizer) controlled system pressure and volume surges resulting from normal coolant density changes during reactor transient heat output conditions. The pressurizer consists of a cylindrical pressure vessel with a useful volume of about 34 cubic meters (1,200 cubic feet) and was connected directly to the reactor outlet piping. Two electric immersion heater systems maintained the pressurizer at saturation temperature and pressure retaining approximately 40% useful surge volume during normal operations. During outsurges of water from the pressurizer, the drop in pressure was compensated for by flashing steam from the saturated water. Increases in system pressure were limited by injecting a water spray into the steam space to condense some of the steam. This spray was reactor coolant fed from either reactor inlet water or from the high pressure injection pumps. The secondary steam system for the N Reactor removed the reactor heat from the reactor coolant system by boiling secondary water in the shell side of the steam generator. During operation solely for the production of special nuclear material the major fraction of this steam was routed to 16 dump condensers which were arranged in parallel and cooled by untreated Columbia River water. These condensers operated at a pressure near that of the steam generators and eliminated the need for steam pressure reducing stations. Condensate was pumped from the dump condensers back to the steam generators for recycling. To achieve maximum single purpose productions operation, the steam temperature and pressures were maintained as low as practicable. A portion of the steam generated was utilized by the coolant pump drive turbines and by the turbine generator for local station service. During dual purpose operation, the major fraction of steam generated was routed to the HGP. A portion of the steam generated was used to drive the reactor coolant pumps, the onsite turbine generator and to keep the dump condensers warm so they were ready to accept full steam load in the event of an HGP turbine generator shutdown. Strained untreated water from the Columbia River was supplied as coolant to the dump condensers as well as the reactor coolant pump drive turbine surface condensers and the local turbine generator condensers. This condenser cooling water was then returned to the river. The fuel used for operation of the N Reactor was slightly enriched uranium-235 (0.94% to 1.25%), clad with a zirconium alloy. At shutdown, a concentric tube-in-tube fuel design was in use. In the past, other materials have been used as a target in connection with an enriched uranium driver fuel element to produce useable isotopes such as tritium and plutonium-238. The fuel cladding is zircaloy-2 metallurgically bonded to the uranium by a co-extrusion process. The fuel elements used in N Reactor were manufactured by United Nuclear Corporation and ranged from 38 to 66 centimeters (15 to 26 inches) in length.

- Related Sites/
Structures:** Structures associated with the 105-N Reactor Building are the 1734-N Building, a 83.61-square meter (900-square foot) structure for storage of gas bottles, the 117-N Filter Building of 398.54 square meters (4,290 square feet), and a stack used for discharge of reactor ventilation air, a 3.4E+06 liter (9E+05 gallon) chemical waste storage tank for decontamination solutions, crib, and tile field. Structures associated with the 109-N Building are the dump tank for emergency discharge of primary coolant located on the west side of the building, sealwell and outfall system to return condenser cooling and condensate water to the Columbia River.
- Waste Type:** Equipment
- Waste
Description:** The waste is the 105-N/109-N Building complex, including the reactor core. The 105-N and 109-N Building complex is radioactively contaminated or potentially contaminated within all confinement zones, irradiated fuel storage areas, primary and secondary coolant piping systems, and confinement ventilation systems.

Code: 100-N-79 **Classification:** Accepted

Names: 100-N-79; 1908 N Outfall Structure; 1908-N Spillway; 100-N-77:1 Flume **Reclassification:** None

Type: Outfall **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of a spillway (also referred to as an emergency outfall) and is constructed of reinforced concrete.

Location: The site is located west of the 109-N Building and the 1300-N Emergency Dump Basin, and south of the 1301-N Emergency Dump tank on a steep bank which leads to the river.

Process Description: The spillway was an emergency discharge point for the 1908-N Outfall structure. It was planned to be used only if the 100-N-77 river effluent pipelines were blocked, damaged, or undergoing maintenance. There is no corroborated physical or historical evidence that the spillway was ever used.

Related Sites/ Structures: The site is associated with 100-N-77 (100-N River Effluent Pipeline) and the 1908-N Outfall Structure.

Waste Type: Construction Debris

Waste Description: There is anecdotal evidence that the spillway was never intended or expected to be used, as it was never permitted. An unknown level of radioactive contamination exists within the structure because the discharge lines were associated with the reactor's secondary steam system.

Code: 100-N-104 **Classification:** Accepted

Names: 100-N-104; Raw Water Overflow Spillway **Reclassification:** None

Type: Outfall **Start Date:**

Status: Inactive **End Date:**

Description: The site is a raw water overflow spillway made up of a concrete chute and stilling basin. A 36 inch raw water return line (100-N-61) empties into this site.

Location: The 100-N-104 spillway is located 119 m (390 ft) downstream of the Hanford Generating Plant River Pumphouse (181-NE).
E 570939.9 N 149367.9

Process Description: The system was designed to collect in a 91 cm (36 in) line (100-N-61), the overflow and drainage from four water storage tanks and dispose the waste water to the river. The four water storage tanks (1900-N) were an afterheat removal system storage tank, an emergency raw water storage tank, a filtered water storage tank and a demineralized water storage tank. The system is comprised of an overflow and a drain piping from each of the water storage tanks, and a 30.5 cm (12 in) raw water return line (100-N-61) from the 182-N Building. The effluent from the 91 cm (36 in) line spills into a sloped concrete chute, into the stilling basin and thence to the river (HW-69000 Volume II, Page 8.2.6-2). The afterheat removal system storage tank was designed as a reservoir of demineralized water for makeup to the secondary loop for normal operation and for flooding of the secondary loop in the water-to-water operation. It also served as storage for water spilled for level control of the secondary loop, water not needed in the secondary loop after the water-to-water operation, and condensate returns from various plant heaters (HW-69000 Volume II, Page 3.1.3-2).

The emergency raw water storage tank was designed as a reservoir of tempered raw water for reactor emergency once-through cooling (HW-69000 Volume II, Page 1.2.3-2). The a filtered

water storage tank was designed for storage of filtered water pumped to it from the 183-N Building (HW -69000 Volume II, Page 2.1.5-2). The demineralized water storage tank was designed as a reservoir of effluent water from the demineralizer plant, and as the normal supply to the high and low pressure injection pumps. It was served as an emergency supply to the pumps of the afterheat removal fill system, the fog spray and fire protection pumping systems, the high lift emergency raw water pumping system, and the emergency raw water storage tank (HW-69000 Volume II, Page 3.1.1-2).

Related Sites/ Structures: 1900-N Water Supply Tanks and 182-N High-Lift Pump House.

Code: 100-N-105 **Classification:** Discovery
Names: 100-N-105; Contaminated Soil beneath 1900-N Supply Tanks; Paint Chips near 1900-N **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of the concrete foundations beneath the former 1900-N water supply tanks (four large steel tanks and silo) and surrounding contaminated soils. The soils beneath the tanks were described as having been stained with oil. However it was paint flakes that fell from the tanks during demolition that are the primary concern at this site. The paint on at least one of the tanks had elevated lead concentrations.
Location: The tanks were located on the south side of 182-N High-Life Pump House.

Code: 244-A CT **Classification:** Accepted
Names: 244-A CT; 244-A DCRT; 244-A Receiver Tank; 244-A RT; 244-A-TK/SMP; 244-A Catch Tank **Reclassification:** None
Type: Catch Tank **Start Date:** 1/1/1975
Status: Inactive **End Date:** 1/1/2005
Description: The unit is an underground structure constructed of carbon steel. It sits vertically inside a reinforced concrete, steel-lined vault. Above the tank is the lift station (sitecode 244-A LS).
Location: This site is located west of the 241-AZ Tank Farm and south of the 241-C Tank Farm. It is inside the 244-A Lift Station fence.
Process Description: The 244-A RT is located at the 244-A Lift Station (244-A LS) and provided lag storage for waste transferred from the 241-ER-153 diversion box to the 241-A valve pits.

Related Sites/ Structures: Structures associated with the 241-A DCRT are the 244-A Lift Station, 241-ER-153 diversion box and the 241-A valve pits. See Sitecode 244-A LS.

Waste Type: Chemicals
Waste Description: The 244-A Catch Tank/Double-Containment Receiver Tank is located at the 244-A lift station and provides lag storage for waste transferred from the 241-ER-153 diversion box to the 241-A valve pits. Waste routed through the lift station includes 200 West Area waste; 241-B, 241-BX, 241-BY, and 241-C Single-Shell Tank waste; and waste transferred from B Plant. Waste transferred out of the 244-A lift station can be routed to any of the 200 East Area Double-Shell Tanks. This tank did not receive saltwell pumping like other DCRT's.

Code: 244-A LS **Classification:** Accepted
Names: 244-A LS; 244-AR Lift Station; 244-AR LS; SN-232, SN-233 and SN-234; 244-A Lift Station **Reclassification:** None
Type: Control Structure **Start Date:** 1/1/1975
Status: Inactive **End Date:** 1/1/2005

Description: The lift station is surrounded with a chain link fence. The surface is covered with gravel. The lift station consists of an underground concrete structure containing a filter pit, pump pit, and vault in which the catch tank (244-A DCRT) is installed. This site includes the exhaust fan and stack, instrument enclosure, caisson, flush pit, service pit, and vacuum pump pad. The structure is posted with multiple radiological postings, including Radiation Area, Underground Radioactive Material Area, Radioactive Material Area and Contamination Area.

Location: This site is located south of 7th Street, west of the 241-AZ Tank Farm and south of the 241-C Tank Farm.

Process Description: The 244-A LS provides lag storage for waste transferred from the 241-ER-153 diversion box, via lines SN-232, SN-233 and SN-234. The waste was then sent to the 241-A valve pit.

Related Sites/Structures: The 244-A LS is associated with the 241-ER-153 diversion box, the 244-A DCRT, lines SN-232, SN-233, SN-234 and the 241-A valve pits. Per drawing H-2-38203, structures related to the 244-A Lift Station also include the exhaust fan and stack, instrument enclosure, caisson, flush pit, service pit, vacuum pump pad and transfer piping. The lift station is also associated with UPR-200-E-70, UPR-200-E-100, UPR-200-E-143, 200-E-144-PL, 200-E-145-PL, 200-E-147-PL and 200-E-167-PL.

Waste Type: Process Effluent

Waste Description: The 244-A Double-Containment Receiver Tank is located at the 244-A Lift Station and provides lag storage for waste transferred from the 241-ER-153 diversion box to the 241-A valve pits. Waste routed through the lift station includes 200 West Area waste; 241-B, 241-BX, 241-BY, and 241-C Single-Shell Tank waste; and waste transferred from B Plant. Waste transferred out of the 244-A lift station can be routed to any of the 200 East Area Double-Shell Tanks.

This Site has the Following SubSites:

Code: 244-A LS:1
Names: 244-A LS:1; Lift Station
Code: 244-A LS:2
Names: 244-A LS:2; Transfer Piping

Code: 244-A LS:1 **Classification:** Accepted
Names: 244-A LS:1; Lift Station **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Inactive **End Date:**

Description: Subsite 1 is the Lift Station that includes the 244-A receiver tank and the pump pit.

The SubSite is Part Of:

Code: 244-A LS
Names: 244-A LS; 244-AR Lift Station; 244-AR LS; SN-232, SN-233 and SN-234; 244-A Lift Station

Code: 244-A LS:2 **Classification:** Accepted
Names: 244-A LS:2; Transfer Piping **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Inactive **End Date:**
Description: Subsite 2 is the transfer piping between the 241-ER-153 Diversion Box and the 244-A Lift Station (lines SN-232, SN-233 and SN-234). The total length of the pipeline segments is 55 meters, calculated with the Geospatial data in ArcGIS.

The SubSite is Part Of:

Code: 244-A LS
Names: 244-A LS; 244-AR Lift Station; 244-AR LS; SN-232, SN-233 and SN-234; 244-A Lift Station

Code: 241-AR-151 **Classification:** Accepted
Names: 241-AR-151; 241-AR-151 Diversion Box **Reclassification:** None
Type: Diversion Box **Start Date:** 1/1/1976
Status: Inactive **End Date:**
Description: The 241-AR-151 diversion box is a reinforced concrete structure. The walls and floor of the diversion box are lined with 11-gage stainless steel. The box drains to the 244-AR Vault and is equipped with a leak detector that alarms inside 242-A evaporator building. The structure is covered with a weather protective cover.
Location: The diversion box is located north of the 244-AR Vault facility, east of 291-AR. It is on the west side of Buffalo Ave.
Process Description: The unit is utilized for the transfer of liquid mixed waste generated at PUREX to the AY and AZ Tank Farms.
Related Sites/Structures: This unit is associated with 241-AY and -AZ tank farms and the 244-AR Vault. A pipeline associated with this diversion box is 200-E-206-PL. The drain line is V717.
Waste Type: Process Effluent
Waste Description: The diversion box is used to transfer waste from the 241-AY and 241-AZ Tank Farms. This waste includes aging waste, high-level B Plant waste, B Plant cesium feed waste, non-complexed, concentrated complexed and cesium and strontium recovery waste.

Code: 244-AR VAULT **Classification:** Accepted
Names: 244-AR Vault; 244-AR VAULT **Reclassification:** None
Type: Receiving Vault **Start Date:** 1/1/1966
Status: Inactive **End Date:** 1/1/1978
Description: The 244-AR Vault facilities include a canyon building, a service building, two concrete housings, and a change room. The canyon building is a reinforced concrete, two level, multi-cell structure. The lower process cells contain four tanks and a failed equipment cell, while the upper cells contain the associated piping and equipment. The upper and lower cells are separated by cover blocks with recessed lifting bails. The facility is posted with multiple radiological postings including Internally Contaminated Systems, Radiation Area, Underground Radioactive Material Area, Radiological Buffer Area, Radioactive Material Area, Contamination Area, High Contamination Area, and Fixed Contamination Area.
Location: The building is located west of the 241-A Tank Farm. at the corner of 4th Street and Buffalo

Ave.

Process Description: The unit received waste sluiced from the 241-A and -AX Tank Farms. Processing took place, then the waste was shipped to B Plant. The facility was the focal point for reprocessing and routing of PUREX-generated waste between tank farms and B Plant facilities in the late 1960's and between the tank farms and the Waste Encapsulation Storage Facility in the late 1970's. In 1984, a decision was made to upgrade the 244-AR vault for use as a waste transfer facility. The extensive upgrading effort provided improved features for the safe and efficient transferring of PUREX-generated waste between the tank farms and B Plant. The waste consisted of cladding removal waste enroute to B Plant and transuranic waste from B Plant/Waste Encapsulation Storage Facility to the tank farms.

Related Sites/ Structures: The facility includes a crane, control room, two ventilation systems, a sluicing system (no longer in use), and a solution piping system.

Waste Type: Storage Tank

Waste Description: The 244-AR Vault was originally used to process radioactive waste that was being removed ("sluiced") from storage tanks. The waste was eventually transferred to the B Plant for removal of cesium and strontium. All of the liquid waste in the facility was transferred to 241-AY-102 in 2003. The vault was interim stabilized in 2003. There is an estimated 660 gallons of sludge and up to 194 gallons of liquid in the tank (RPP-12051, 244-AR Vault Interim Stabilization Completion Report, Page 3-2) Tank-001 cell 1. The tank is thought to be dry, but there may be up to 2 gallons of waste in the sump (RPP-12051). In Tank-002 Cell 2, there is an estimated 2080 gallons of sludge and up to 194 gallons of liquid in the tank (RPP-12051 page 3-3). The cell is thought to be dry, but there may be up to 2 gallons of waste in the sump RPP-12051).

Code: 241-AZ-301 **Classification:** Accepted

Names: 241-AZ-301; Condensate Receiver Tank **Reclassification:** None

Type: Receiver Tank **Start Date:** 1/1/2005

Status: Active **End Date:**

Description: The site is an above ground tank. It is posted with Radiation Area and Contamination Area signs.

Location: The site is located west of the 241-AZ Tank Farm fence, adjacent to the 241-AZ-702 Ventilation Building.

Process Description: The 241-AZ-301 receiver vessel was built to replace the 241-AZ-151 catch tank. The vessel receives condensate from the 241-AZ-702 Aging Waste ventilation system, which is the primary filter building for the 241-AY and 241-AZ tank farms.

Related Sites/ Structures: The site is associated with the 241-AZ-702 Aging Waste ventilation system.

Code: 201-C **Classification:** Accepted

Names: 201-C; 201-C Process Building **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1967

Description: Demolition activities removed the aboveground features of 201-C from 1983 through 1986. The below grade features and remains of the 201-C facility was entombed in concrete and has been

Structures: stored within the building.

Waste Type: Equipment

Waste Description: The unit consists of a previously radioactively contaminated structure. The building was decontaminated in 1985, and was subsequently used to store equipment. The Semiworks Aggregate Area Management Study Report (DOE/RL-92-18) does not show any remaining radionuclide waste inventory for the 215-C Building.

Code: 291-C **Classification:** Accepted

Names: 291-C; 291-C Fan and Filter Building; 291-C Filter/Fan House; 201-C Air Tunnel **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1987

Description: This building was demolished prior to the 291-C-1 Stack demolition in 1988. The unit consisted of an air tunnel from the 201-C Cells, fiber glass filters, high-efficiency particulate air (HEPA) filters, and the Fan House. The Fan House and HEPA Filter 2 were located above ground. HEPA Filter 1 and the concrete air tunnel were constructed below grade. The air tunnel connected the 201-C Building with the 291-C-1 Stack. The first 31 meters (100 feet) of the tunnel are 6 meters (20 feet) below grade. The second 31 meters (100 feet) of the tunnel are 1.5 meters (5 feet) below grade. There were forty removable aluminum cartridge glass fiber filters and an array of HEPA filters. The fan house building was a wood frame structure on a concrete slab. It contained two electric fans and one steam turbine fan.

Location: The 291-C Fan House building was located east of the 291-C Stack base, south of 7th Street.

Process Description: The structure provided exhaust air ventilation for the operating cells and process vessel vents of the 201-C Facility.

Related Sites/Structures: The building was associated with the 291-C Exhaust Stack. Also see pipeline sitecodes 200-E-251-PL and 200-E-252-PL that drained these structures to the 216-C-2 reverse well.

Waste Type: Equipment

Waste Description:

Waste Type: Equipment

Waste Description:

Code: 200-E-27 **Classification:** Accepted

Names: 200-E-27; 242-AC; 242AC Pipefitter Shop Lead Cutting Area **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The 242AC Pipefitter Shop had a lead cutting area and an area used to store lead sheets and pipe for use on various construction projects. The area is no longer used for lead cutting, but is used by the shop as an equipment and material storage area. The lead cutting area has sandy soil and contains pieces of lead. The area surrounding the lead cutting area is covered with crushed rock. Tank farm equipment, lead material covers, and a heavy duty table are currently stored in the lead cutting area. The entire 242AC Pipefitter Shop area is surrounded by a chain-link

fence.

Location: The site is located at the corner of 4th Street and Buffalo Avenue. The Lead Cutting Area is on the east side of the 242 AC pipefitter shop.

Release Description: Lead was cut at the facility using piano wire, a cutting torch, and a skil saw with the blade turned backwards. The skil saw created the small lead particles

Related Sites/ Structures: The site is associated with the 242-AC Pipefitter Shop.

Waste Type: Soil

Waste Description: Soil at the site is contaminated with lead.

Code: 200-E-41 **Classification:** Accepted

Names: 200-E-41; Stabilized Hot Semiworks Area; Strontium Semi-Works Stabilized Area; UN-216-E-38 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1949

Status: Inactive **End Date:** 1/1/1992

Description: This site is a large area posted with chain and Underground Radioactive Material signs. An area within the posted boundaries has been covered with fly ash. The ash-covered area encompasses the decommissioned 201-C Building, the 291-C Stack Burial Trench and the 216-C-2 French Drain. Waste sites and facilities buried beneath the ash are not individually distinguishable.

Location: The site is located in 200 East Area, south of 7th Street. It is east of the 209-E security fence.

Release Description: Two waste line leaks have been documented in WIDS files 200-E-56 and 200-E-57.

Process Description: The 201-C Processing Building was the main processing facility for the Hot Semiworks Area. It was originally built in 1949 as a pilot plant for the Reduction Oxidation (REDOX) process. In 1954, the building was used as a pilot plant for the Plutonium Uranium Extraction (PUREX) process. The plant was converted to recover strontium from process wastes in 1961.

Related Sites/ Structures: The area is associated with the 201-C building, CX-70, CX-71, CX-72, 241-C-154, 216-C-2 and WIDS site codes 200-E-56 and 200-E-57.

Waste Type: Soil

Waste Description: The area covered with clean backfill contained residual contamination from the operation of the Hot Semiworks facility.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-36

Names: UPR-200-E-36; Contamination Spread North of Semi-Works; Road Contamination North of Semiworks; UN-200-E-36

Code: 200-E-44 **Classification:** Accepted

Names: 200-E-44; PUREX Railroad Cut **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive

End Date:

Description: The Railroad Cut is approximately 240 meters (800 feet) of track extending from the tunnel door northward to the isolation area gate. Two large berms of soil were placed along both sides of the track within the fenced portion of the spur to provide radiation shielding. A turnout siding (Donkey Track) is also located within the fenced Railroad Cut. The railroad cut is posted as a Contamination Area.

Location: The PUREX Railroad Cut is located on the northeast corner of the 202-A building. A railroad spur extends from the PUREX main lead to the tunnel entrance door.

Process Description: The railroad cut provides access to the PUREX tunnel and also to the burial tunnels south of the PUREX facility (218-E-14 and 218-E-15).

Related Sites/ Structures: The site is associated with UPR-200-E-10, UPR-200-E-11, UPR-200-E-12, UPR-200-E-20 and UPR-200-E-33.

Waste Type: Soil

Waste Description: The contamination in the soil and gravel in the railroad cut is from many years of contaminated equipment and waste being transported on rail cars into and out of the PUREX facility.

Code: 200-E-102

Classification: Accepted

Names: 200-E-102; Contaminated Soil Trench

Reclassification: None

Type: Trench

Start Date: 1/1/1958

Status: Inactive

End Date: 1/1/1958

Description: The trench is inside the surface stabilized Underground Radioactive Material area south of PUREX that is known as WIDS Sitecode 200-E-103. The trench is not separately marked or posted.

Location: The site is located 20.7 meters (68 feet) south of the south boundary of 216-A-4 Crib. It is currently covered with clean gravel and cannot be visually identified.

Process Description: The trench was used to bury contaminated soil from an unplanned release (WIDS Site UPR-200-E-15). When the 216-A-4 Crib plugged in 1958, it caused the ground between the 216-A-4 crib and the 291-A Turbine House to flood. The contaminated soil was scraped up and placed into a slit trench near the south end of the crib. The trench was covered with 0.3 meters (one foot) of clean dirt.

Related Sites/ Structures: The site is related to UPR-200-E-15, 216-A-4 Crib, 291-A Turbine House and 200-E-103.

Waste Type: Soil

Waste Description: The waste is contaminated soil caused by the plugging of the 216-A-4 Crib. It resulted in a flood of contaminated water in the 291-A Turbine House floor drains. The turbine house floor was contaminated to 20 rads/hour at 25.4 centimeters (10 inches). An area of ground and blacktop outside the turbine house was contaminated up to 8 rads/hour. The 216-A-4 Crib received waste solution from the 216-A-2 Waste Collection Tank, the U-3 and U-4 Laboratory Waste Receiver Tanks (located in the acid storage vault), the dissolver off-gas scrubbers and the 241-A-151 Diversion Box Catch Tank. 216-A-4 Crib was intended to receive a maximum of [284 liters (75 gallons) per minute] low level radioactive liquid waste.

Code: 200-E-111-PL

Classification: Accepted

Names: 200-E-111-PL; 3-38 Encasement; Encased Pipeline from 241-ER-151 Diversion Box to 241-C Tank Farm and 244-AR Vault; Lines V108/V837/8618/8653/8901PAS, 809, 818, V836 and V834

Reclassification: None

Type: Encased Tank Farm Pipeline

Status: Inactive

Description: The site is an underground piping encasement that contains three 7.5 centimeter (3 inch) diameter stainless steel waste transfer pipelines, numbered V108, 8618, 8653, that run from the 241-ER-151 diversion box through a "Y," which branches to the 241-C Tank Farm and the 244-AR Vault. The section from the "Y" junction to the 244-AR Vault contains two 7.5 centimeter (3 inch) pipelines numbered 809 and 818. There is a posted Contamination Area on top of the line at the Y Junction where the line branches to the 241-C Tank Farm and the 244-AR Vault. Line 8653 was replaced with V836. V836 is a direct buried carbon steel line that runs parallel to the encased lines. The entire length of the pipeline is marked with steel fence posts and posted as an Underground Radioactive Materials area. The ground surface above the pipeline is bare in spots, other sections are vegetated with crested wheatgrass, tumbleweeds, and native grass species.

Location: The encased pipeline runs eastward from the 241-ER-151 Diversion Box, south of 7th Street, and branches off in two directions (forming a Y) at a point southeast of the 216-C-10 Crib. From the Y, it branches to the 241-CR-151 Diversion Box inside 241-C Tank Farm and to the 244-AR Vault.

Process Description: The underground, encased pipeline was used to transfer waste from 241-ER-151 to the 241-C Tank Farm and the 244-AR Vault. Line V837 is a single direct buried line that terminates at the 200-E-111 PL encasement. Line V837 ties into line V108 in the encasement.

Related Sites/Structures: The waste transfer encasement is connected to the 241-ER-151 Diversion Box, 241-ER-152 Diversion Box, 241-CR-151, 241-C Tank Farm and the 244-AR Vault.

Waste Type: Process Effluent

Waste Description: The pipeline transported liquid effluent from the 241-ER-151 Diversion Box to the tank farms. Some adjacent soil has been contaminated from pipeline leaks.

Code: 200-E-112-PL

Classification: Accepted

Names: 200-E-112-PL; 24-Inch VP Line; 2904-E-1; B Plant Process Sewer; Pipeline from B Plant to 207-B Retention Basin

Reclassification: None

Type: Radioactive Process Sewer

Status: Inactive

Description: The site is the 61 centimeter (24 inch) diameter, underground process sewer from B-Plant to the 207-B Retention Basin. The pipeline is also known as 2904-E-1. The pipelines are marked above ground with steel posts and marked as "Underground Radioactive Material/Pipeline". Access manholes are located at intervals along the length of pipelines. Vegetation over the pipelines consists of grass and tumbleweeds, with several areas of bare soil.

Location: The waste site is an underground vitrified clay pipelines connect B Plant and the 207-B Retention Basin. It extends eastward from the southeast corner of B-Plant, then turns northward, connecting to the west side of the 207-B Retention Basin.

Release Description: UPR-200-E-32 is associated with this pipeline.

Description:

Process Description: B-Plant routinely discharged process effluent, containing small amounts of radioactivity, to the 207-B Retention Basin via an underground process sewer pipeline. The 2904-E-1 sewer line extends eastward from the south side of 221-B and turns north to connect to the west side of the 207-B Retention Basin. On several occasions large, unplanned amounts of radioactive material were released to the underground sewer lines. The process sewers are 0.6 meters (24 inches) in diameter clay pipelines that include a cast iron pipe from the 221-B building to the first manhole of the process sewer. The remainder of the sewer pipelines are constructed of vitrified pipe.

Related Sites/ Structures: The process sewers are associated with 221-B (B Plant) and the 207-B Retention Basin.

Waste Type: Process Effluent

Waste Description: The process sewer pipelines transferred liquid process effluent and cooling water to the retention basin and the 216-B-2 ditches. The radioactivity levels were normally low and the water was discharged from the retention basin to ditches that connected to the 216-B-3 Pond. However, in 1963 and 1970, Unplanned Releases UPR-200-E-32 and UPR-200-E-138 released significant amounts of cerium-144 and strontium-90 to the process sewer pipelines.

This Site has the Following SubSites:

Code: 200-E-112-PL:1

Names: 200-E-112-PL:1; North/South 24-Inch VCP Pipeline to 207-B

Code: 200-E-112-PL:2

Names: 200-E-112-PL:2; East/West 24-Inch Cast Iron Pipeline from B Plant Facilities Connecting to the North/South 24-Inch VCP Pipeline

Code: 200-E-112-PL:3

Names: 200-E-112-PL:3; 10-Inch Cast Iron Pipeline from 224-B Connecting to the East/West 24-Inch Cast Iron Pipeline

Code: 200-E-112-PL:4

Names: 200-E-112-PL:4; 2-Inch Cast Iron Pipe from 212-B to East/West 24-Inch Cast Iron Pipeline

Code: 200-E-112-PL:1

Classification: Accepted

Names: 200-E-112-PL:1; North/South 24-Inch VCP Pipeline to 207-B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-112-PL

Names: 200-E-112-PL; 24-Inch VP Line; 2904-E-1; B Plant Process Sewer; Pipeline from B Plant to 207-B Retention Basin

Code: 200-E-112-PL:2

Classification: Accepted

Names: 200-E-112-PL:2; East/West 24-Inch Cast Iron Pipeline from B Plant Facilities Connecting to the North/South 24-Inch VCP Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-112-PL

Names: 200-E-112-PL; 24-Inch VP Line; 2904-E-1; B Plant Process Sewer; Pipeline from B Plant to 207-B Retention Basin

Code: 200-E-112-PL:3

Classification: Accepted

Names: 200-E-112-PL:3; 10-Inch Cast Iron Pipeline from 224-B Connecting to the East/West 24-Inch Cast Iron Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: A 10 inch pipeline exits the south side of 224-B to connect to the B Plant Process Sewer. A 4 inch line exits the north side of 224-B and also connects to the process sewer.

The SubSite is Part Of:

Code: 200-E-112-PL

Names: 200-E-112-PL; 24-Inch VP Line; 2904-E-1; B Plant Process Sewer; Pipeline from B Plant to 207-B Retention Basin

Code: 200-E-112-PL:4

Classification: Accepted

Names: 200-E-112-PL:4; 2-Inch Cast Iron Pipe from 212-B to East/West 24-Inch Cast Iron Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-112-PL

Names: 200-E-112-PL; 24-Inch VP Line; 2904-E-1; B Plant Process Sewer; Pipeline from B Plant to 207-B Retention Basin

Code: 200-E-113-PL

Classification: Accepted

Names: 200-E-113-PL; 216-A-42C Valve Box; Line 8824; Pipeline from PUREX to 216-A-6 and 216-A-30 Crib

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site is an underground 41 centimeter (16 inch) diameter carbon steel pipeline that extends from the PUREX Plant to a distribution box located on the west side of the 216-A-6 Crib and continues eastward to the 216-A-30 Crib. The pipeline is marked with steel fence posts, posted as "Underground Radioactive Material" (URM) and "Pipeline" over its entire length. The 216-A-42C Valve Box is located on the pipeline, inside a domed cover. It is surrounded by a broken, wood fence. A small area just west of the 216-A-42C Valve Box has been stabilized with cobbles and separately posted as URM. Most of the pipeline is free of vegetation except for tumbleweeds near the 216-A-30 Crib.

Location: The site extends in an easterly direction from the southeast end of the PUREX plant to the 216-

A-6 and 216-A-30 Crib.

Process Description: The pipeline transported steam condensate waste from the PUREX facility to the 216-A-30 Crib via Distribution Box 1. The effluent from this line had the capability of being sent to the 216-A-6 Crib or the 216-A-30 Crib. From 1961 to 1966 the 216-A-6 and 216-A-30 Crib operated in parallel. After the 216-A-6 Crib was abandoned in 1970, all the effluent in this pipeline was diverted to the 216-A-30 Crib. The distribution box was filled with concrete in 1995. The effluent was monitored for radionuclides with an in-line monitoring system. If concentrations exceeded the discharge limits, an alarm was sounded in the dispatcher's office, a verification sample was collected, and the stream automatically diverted to the 216-A-42 Retention Basin.

Related Sites/ Structures: The pipeline is associated with the PUREX facility, the 216-A-6 Crib, the 216-A-42 Retention Basin and the 216-A-42C Valve Box.

Waste Type: Process Effluent

Waste Description: The waste is the pipeline and adjacent soil contaminated from pipeline leaks.

Code: 200-E-116-PL **Classification:** Accepted

Names: 200-E-116-PL; Direct Buried Pipelines V111/V210/V130, 8902, and V122; Pipelines from 241-B-154 Diversion Box to 241-C-151 and 241-C-152 Diversion Boxes **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The pipeline is posted as an Underground Radioactive Pipeline that extends from the 241-B-154 Diversion Box to the 241-C-151 and 241-C-152 Diversion Boxes. Vegetation over the pipeline has been crushed due to vehicle traffic. An area located just north of the 241-B-154 Diversion Box was posted as a High Contamination Area in September 2000, but was covered with a bio-barrier and gravel in February 2001. It is now a rectangular posted URM area over a portion of the pipeline. Another area of contamination was found on this pipeline in June 2001. This area was covered with gravel and posted as a URM in August 2001.

Location: The site is located north of and runs parallel to 7th Street, between B Plant and the 241-C Tank Farm in 200 East Area.

Release Description: The Dyncorp Integrated Soil, Vegetation and Animal Control group submitted a posted High Contamination Area site to WIDS as a Discovery Site. They have determined that the area was posted due to growing, contaminated vegetation on the underground pipeline. The contaminated rabbitbrush was surrounded with High Contamination postings. In September 2000, contamination levels inside the posted area ranged from 1200 to 50,000 counts per minute. This area was later covered with a bio-barrier and gravel. In June 2001, another area of growing contaminated vegetation was found adjacent to the area recently stabilized. Contamination levels on the vegetation ranged from 1000 to 50,000 counts per minute.

Process Description: The pipelines transported radioactive mixed waste solutions originating from B Plant to the 241-C Tank Farm. This is a direct buried pipeline, not encased in concrete.

Related Sites/ Structures: B Plant, 241-B-154 Diversion Box, 241-C-151 Diversion Box, 241-C-152 Diversion Box, and 241-C Tank Farm. UPR-200-E-82 is also associated with this transfer line.

Waste Type: Process Effluent

Waste Description: The pipeline transported process effluent from B Plant. Some adjacent soil has been

Waste Description: contaminated from pipeline leaks.

Code: 200-E-118 **Classification:** Accepted
Names: 200-E-118; 216A271 Shack; 216-B-3 Diverter Station; Diverter Station #3; Main Diverter Structure #3 **Reclassification:** None
Type: Control Structure **Start Date:**
Status: Inactive **End Date:** 1/1/1994

Description: The site is a small building (shack) that is labeled Main Diverter Structure #3. Inside the shack, the floor is made of metal grating. Below grade pipes and valves are visible through the grate. A section of the floor is open to the pipes below, and has a radiation rope across the opening. The rope had been posted with an old Surface Contamination Area sign. There had been a posted Contamination Area around a portion of the outside of the shack. In April 2007, the contamination was backfilled with clean dirt and the area posting was changed to Underground Radioactive Material. Just outside of the posted Contamination Area is a valve, labeled 216-B-3-3 Diverter Valve. Two concrete manholes are present, one on each side of the diverter valve.

Location: The site is located east of the 200 East Area fence, near the head end of the 216-B-3-3 Ditch.

Process Description: Water from B Plant and PUREX could be diverted to the 216-B-3 Pond lobes or to Gable Mountain Pond (216-A-25) via valves in the diverter station. Gable Pond became inactive in 1984 and was backfilled. The 216-B-3-3 Ditch was active until 1994.

Related Sites/Structures: The site is associated with the underground pipelines to 216-B-3 ponds and 216-A-25 pond (see sitecodes 200-E-126-PL and 200-E-127-PL)

Waste Type: Equipment

Waste Description: The site is an abandoned shed posted with Contamination Area signs.

Code: 200-E-126-PL-B **Classification:** Accepted
Names: 200-E-126-PL-B; Segments of 200-E-126-PL Pipeline Located in the Inner Area **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site has been split into segments. 200-E-126-PL-B is the segments of 200-E-126-PL piping located in the Inner Area. The segments of pipelines associated with 200-E-126-B include a twenty two inch diameter poly pipe extending from 207-B to Diverter Station 2, a twenty one inch diameter vitrified clay pipe extending from Diverter Station 2 to the Head End of 216-B-3 Ditches and a twenty four inch corrugated metal pipe extending from Diverter Station #2 to Diverter Station #3.

Location: The pipeline segments in this waste site are located inside 200 East Area, west of the Inner/Outer Area boundary. The waste site begins at the 207-B retention basin and terminates at the Inner/Outer Area boundary.

Process Description: The pipeline conveyed B Plant effluent to the 216-B-3 Pond and Ditch system. B Plant cooling water effluent was originally routed through the 207-B Retention Basin to the 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches. In 1987, the 216-B-2-3 ditch was closed and was replaced by this,

22 inch diameter plastic underground pipeline. It extended from the 207-B basin to Diverter Station #2. By 1994, all of the open ditches (216-B-2-1, 216-B-2-2, 216-B-2-3, 216-B-3-1, 216-B-3-2 and 216-B-3-3) had been backfilled and surface stabilized. After 1994, all the effluent was conveyed to the 216-B-3A and 216-B-3C pond lobes only through underground pipelines. In 1995 the ponds were closed. The remaining effluent was transferred the Treated Effluent Disposal Facility (TEDF). Parts of the pipelines east of 200 East Area, that had fed the ponds, were re-used to feed the TEDF disposal basin. The TEDF portion begins at Manhole #8 and extends to Pump Station #3. In the event of a failure at Pump Station #3, the effluent can be routed to 216-B-3C (C lobe). The section that connects the southeast corner of 216-B-3A to the northwest corner of 216-B-3C is constructed of 76 centimeter (30 inch) corrugated metal pipe.

Related Sites/ Structures: This portion of pipeline is associated with the 207-B Retention Basin and Diverter Station #2

Code: 200-E-127-PL-B	Classification: Accepted
Names: 200-E-127-PL-B; Segments of Gable Mountain Pond Pipeline Located in the Inner Area	Reclassification: None
Type: Radioactive Process Sewer	Start Date:
Status: Inactive	End Date:
Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site has been split into segments. 200-E-127-PL-B is the segments of pipeline located in the Inner Area. The majority of this pipeline is 36 inch corrugated metal pipe. When the 241-AP Tank Farm was constructed, a portion of this pipe was re-routed to the east of the new tank farm. The original pipe that was within the boundary of the 241-AP tank farm property was removed during the tank farm construction.	
Location: 200-E-127-PL-B is the segments of pipe located in the Inner Area. It extends from the 241-A-201 Pump Pit, located east of the PUREX facility to the 207-A Retention Basins, located east of Canton Ave., east of the 242-A Evaporator building.	
Process Description: The pipeline conveyed PUREX and B Plant effluent to the (216-A-25) Gable Pond or the (216-B-3) B Pond system. The effluent stream was directed to the preferred pond via Diverter Station #3. The pipeline south of Diverter Station #3 is constructed of 91 centimeter (36 inch) diameter corrugated metal. The portion of the pipeline between the 241-A-201 cooling water storage tanks and the 216-A-42 basin (30 inch VCP) was taken out of service in June 1992.	

Code: 200-E-135	Classification: Accepted
Names: 200-E-135; Contamination Area South of 241-C Tank Farm	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site is surrounded with steel posts and chain with Underground Radioactive Material signs attached to the chain. It has been covered with clean gravel. An abandoned, above ground steam pipe is located inside the posted area.	
Location: The site is located south of 7th Street and southwest of the 241-C Tank Farm.	
Release Description: In September 2000, three growing, contaminated tumbleweeds were found inside the posted area. The maxim contamination level was 1000 counts per minute above background.	

Related Sites/ Structures: Underground pipelines 200-E-148-PL, 200-E-150-PL and 200-E-153-PL cross beneath this area of growing, contaminated vegetation.

Code: 200-E-141 **Classification:** Accepted
Names: 200-E-141; 2715EC Paint Shop French Drain; Miscellaneous Stream #223 **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a french drain behind the 2715EC paint shop.
Location: The drain is 3.05 meters (10 feet) west and 7.62 meters (25 feet) north of the northeast corner of the 2715EC paint shop.
Process Description: The french drain received effluent from a sink located inside the paint shop. The sink was used to wash latex paint brushes. In 1995, the sink effluent was connected to the sanitary sewer. In March 2007, Curt Clement verified the sink water did not discharge to the french drain.

Related Sites/ Structures: The drain is associated with the 2715EC Paint Shop

Code: 200-E-142 **Classification:** Accepted
Names: 200-E-142; Paint Brush Cleaning Station **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of soil cover with gravel and scattered vegetation. There is no visual evidence of the chemicals disposed here. It is possible the site extends northward, beyond the steamline.
Location: The contaminated soil is located north of the 2241-B building foundation (demolished), between the concrete pad and the steam line. The area is south of the 224-B Building.
Process Description: The 2241-B building had a concrete pad that included an old paint brush cleaning station. The painters had a 3-brush cleaning station on a cement pad on the north side of the building. An open top drum was used to soak paint buckets. The excess liquid drained off of the concrete pad and out of the drum onto the soil.

Related Sites/ Structures: The cleaning station is associated with 2241-B Building (demolished structure).

Waste Type: Chemical Release
Waste Description: The waste includes chemicals used to clean paint brushes and buckets.

Code: 200-E-143-PL **Classification:** Accepted
Names: 200-E-143-PL; Encased Transfer Line from 241-AX-151 Diversion Box to 241-A Tank Farms and 244-CR Vault in 241-C Tank Farm; Tank Farm Transfer Lines 4101, 4102, 4103, 4104, 4105, 4106, 4107/V033, 4017, 4018 and 8656 **Reclassification:** None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground concrete encased transfer line containing nine, 10 centimeter (4 inch) diameter, stainless steel pipes. Groups of lines divert from the encasement at various points along the route to 244-CR Vault. Lines 4101, 4102 and 4103 divert into the south end of 241-A Tank Farm to feed tanks 241-A-101, 241-A-102 and 241-A-103. Lines 4104, 4105, 4106, 4017 and 4018 divert from the encasement at the north end of 241-A Tank farm to feed tanks 241-A-104, 241-A-105, 241-A-106 and 241-AX-152 Diversion Box. Line 4107 diverts to 241-A-152 Diversion box. North of 241-A Tank Farm, line 8656 continues to the 244-CR Vault, inside 241-C Tank Farm.

Location: The concrete encased transfer line extends from the 241-AX-151 Diverter Station, near the corner of Route 4 and Buffalo Ave. to 244-CR Vault, inside 241-C Tank Farm.

Related Sites/ Structures: The concrete encasement is associated with 241-AX-151, 241-A Tank Farm and 241-C Tank Farm.

Code: 200-E-144-PL

Classification: Accepted

Names: 200-E-144-PL; Encased Transfer Line from 241-CR-152 and 241-CR-153 to 241-AX-151; Lines 4006 and 4007 from 244-AR Vault to 241-AX-151; Tank Farm Transfer Line 4012; Transfer Line 4013 (A-4013)

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The transfer line is radiologically posted as an Underground Radioactive Material Area. Two, stainless steel pipelines are inside the pipe trench. Lines 4012 and 4013 (A-4013) originate inside the 241-C Farm at the 241-CR-152 and 241-CR-153 Diversion Boxes, passes through the 241-ER-153 Diversion Box, and terminate at the 241-AX-151 Diverter Station. Both lines are 7.6 centimeter (3 inch) in diameter pipes.

Location: The pipeline extends from 241-C tank farm to 241-AX-151 diversion box, located south of 204 AR, near the corner of 4th Street and Buffalo Ave at the 244-AR Vault facility.

Code: 200-E-145-PL

Classification: Accepted

Names: 200-E-145-PL; 241-ER-152 and 241-ER-151; Interplant Transfer Line; Tank Farm Transfer Line V228; Transfer Pipeline from 241-CR-153 to 241-ER-153

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The trench that contains lines V228 and PAS-244 is radiologically posted as an Underground Radioactive Material Area. The trench contains two, 3 inch diameter stainless steel pipes.

Location: Line V228 originates in 241-C Farm at the 241-CR-153 Diversion Box, passes through the 241-ER-153 Diversion Box south of 241-C Farm and continues to the 241-ER-152 Diversion Box. Line 244 originates at B Plant, and is connected to both 241-ER-151 and 241-ER-152 Diversion Boxes. Line 244 is in the same trench as V228 from 241-ER-152 to 241-ER-153. Both lines continue into 241-C tank farm at the 241-CR-153 diversion box.

Process Pipelines V-228 and PAS-244 are inside the same pipe trench. The 241-ER-152 Diversion Box

Description: is located on the west side of the pipeline. The 241-ER-153 Diversion Box is located on the east side of the pipeline. From 244-A to 241-C, lines V228 and PAS-244 join lines 4012 and 4013 (see 200-E-144-PL).

Related Sites/ Structures: The pipelines are associated with diversion boxes 241-ER-151, 241-ER-152, 241-ER-153, 241-CR-153 and pipeline sitecodes 200-E-144-PL and 200-E-147-PL.

Waste Type: Process Effluent

Waste Description: Line V228 transported Purex Supernate (PSN). It contained three curies per gallon of cesium-137, one curie per gallon of strontium 89 and 90 and one curie per gallon of cerium.

Code: 200-E-147-PL

Classification: Accepted

Names: 200-E-147-PL; Interplant Transfer Line; Tank Farm Transfer Line PAS-244; Transfer Line from 244-CR-TK-003 to 241-ER-153

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: Transfer line PAS-244 is located in the Interplant Transfer pipe trench, per drawing H-2-44501, sheet 92. The pipeline is radiologically posted as an Underground Radioactive Material Area.

Location: Line PAS-244 originates inside 241-C Tank Farm, at the 244-CR Vault (244-CR-TK-003), and terminates at the 241-ER-153 Diversion Box south of 241-C Farm and west 241-AZ Farm.

Process Description: The stainless steel pipelines, V-228 and PAS-244, are inside the same pipe trench. The 241-ER-152 Diversion Box is located on the west side of the pipeline. The 241-ER-153 Diversion Box is located on the east side of the pipeline. From 244-A to 241-C, lines V228 and PAS-244 join lines 4012 and 4013 (see 200-E-144-PL).

Related Sites/ Structures: The pipeline is associated with 200-E-144-PL, 200-E-145-PL, 241-ER-152 and 241-ER-153.

Waste Type: Process Effluent

Waste Description: Line 224 transported Purex Acid Sludge (PAS). It contained one curie per gallon of cesium-137, twenty curies per gallon of strontium 89 and 90 and one curie per gallon of cerium.

Code: 200-E-148-PL

Classification: Accepted

Names: 200-E-148-PL; Direct Buried Transfer Line from 241-C-151 to 241-A-01A; Tank Farm Transfer Line V109

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: Transfer Line V109 is a 5 centimeter (2 inch) diameter, direct buried line, that is radiologically posted as an Underground Radioactive Material Area.

Location: Line V109 originates inside the 241-C Farm at the 241-C-151 Diversion Box and terminates at 241-A-01A Pump Pit inside 241-A Farm.

Related Sites/ Structures: This pipeline passes beneath the Contamination Area known as 200-E-135. Growing contaminated vegetation was found in this area in 2000.

Code: 200-E-149-PL **Classification:** Accepted

Names: 200-E-149-PL; Direct Buried Transfer Line from 241-C-252 to 201-C Hot Semi Works; Tank Farm Pipeline; Tank Farm Transfer Line V175 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Tank Farm Transfer Line V175 is a 2 inch diameter, direct buried, stainless steel Tank Farm process waste pipe. The site is radiologically posted as an Underground Radioactive Material Area.

Location: Line V175 originates inside 241-C Farm at the 241-C-252 Diversion Box and terminates at the 241-C-201-C Diversion Box in the 201-C Hot Semi Works complex.

Release Description: WIDS sitecode 200-E-56 says HW-52860 states that teflon flange gaskets on the stainless steel underground waste line from 201-C to 241-C Tank Farm developed leaks. The leaks caused the underground area next to the east side of the 201-C Building and an underground area near the east facility fence to become contaminated. Radiation readings in 1957 were greater than 100 rad per hour at a depth of 3.66 meters (12 feet) adjacent to the 201-C Building and near the fence. The underground waste line was abandoned and by pass sections installed. New sections of pipeline were installed south of the leaking sections.

Related Sites/ Structures: This pipeline is associated with 201-C and WIDS sitecode 200-E-56 soil contamination event.

Code: 200-E-150-PL **Classification:** Accepted

Names: 200-E-150-PL; Direct Buried Transfer Line from 244-CR-TK-003 to 201-C Hot Semi Works Valve Box; Tank Farm Pipeline; Tank Farm Transfer Line 8900 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Tank Farm Transfer Line 8900 is a direct buried Tank Farm process waste pipe. The site is radiologically posted as an Underground Radioactive Material Area.

Location: Line 8900 originates inside 241-C Farm at 244-CR-TK-003 in 244-CR Vault and terminates at the 201-C Valve Box in the 201-C Hot Semi Works complex.

Related Sites/ Structures: This pipeline passes beneath the Contamination Area known as 200-E-135. Growing contaminated vegetation was found in this area in 2000.

Code: 200-E-151-PL **Classification:** Accepted

Names: 200-E-151-PL; Direct Buried Transfer Line from 241-C-104 to 241-A-152; Tank Farm Pipeline; Tank Farm Transfer Line V050 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Tank Farm Transfer Line V050 is a 3 inch diameter, schedule 40 steel, Tank Farm process waste pipe. Most of this pipeline is direct buried. 48 meters (160 feet) of the line is encased in concrete. The site is radiologically posted as an Underground Radioactive Material Area.

Location: Line V050 originates inside 241-C Tank Farm at the 241-C-104 tank and terminates at the 241-A-152 Diversion Box, inside 241-A Tank Farm.

Related Sites/ Structures: The line is associated with 241-C-104, 241-A-152 and pipeline sitecode 200-E-152-PL.

Code: 200-E-152-PL **Classification:** Accepted

Names: 200-E-152-PL; Direct Buried Transfer Line from 241-C-104 to 241-A-152; Tank Farm Pipeline; Tank Farm Transfer Line V051 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Tank Farm Transfer Line V051 is a 3 inch diameter, schedule 40 steel, Tank Farm process waste pipe. Most of the line is direct buried. Forty eight meters (160 feet) is encased in concrete. The site is radiologically posted as an Underground Radioactive Material Area.

Location: Line V051 originates inside 241-C Tank Farm at the 241-C-104 tank and terminates at the 241-A-152 Diversion Box inside 241-A Tank Farm.

Related Sites/ Structures: The line is associated with 241-C-104, 241-A-152 and pipeline sitecode 200-E-151-PL.

Code: 200-E-153-PL **Classification:** Accepted

Names: 200-E-153-PL; Direct Buried Transfer Line from 241-C-151 to 244-AR-TK-002; Tank Farm Pipeline; Tank Farm Transfer Line V108/812 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Tank Farm Transfer Line V108/812 are 3 inch diameter, direct buried, Tank Farm process waste pipes. Line V108 is a stainless steel pipe. Line 812 is a carbon steel pipe. The site is radiologically posted as an Underground Radioactive Material Area.

Location: Line V108/812 originates inside 241-C Tank Farm at the 241-C-151 Diversion Box and terminates at 244-AR-TK-002 in 244-AR Vault.

Release Description: UPR-200-E-86 states that routine line (leak detection) monitoring equipment detected a leak in the vicinity of transfer line number 812. The line was being used to transfer process waste (containing approximately 25,000 curies of cesium-137) from the 244-AR Vault to the 241-C Tank Farm. The leak was identified on February 25, 1971. Eight test wells were drilled to determine the extent of the subsurface contamination. Wells 4, 5 and 8 found subsurface contaminated soil. Well number 4 found a maximum contamination of 5 rad per hour at the 3 foot and 6 foot levels. No contamination was found below the 20 foot level.

Related Sites/ Structures: Line 812 is associated with UPR-200-E-86. It is a line leak that occurred in 1971. A posted Underground Radioactive Material Area, covered with shotcrete, remains. This pipeline also passes beneath the Contamination Area known as 200-E-135, south of 7th Street. Growing contaminated vegetation was found in this area in 2000.

The Following Sites Were Consolidated With This Site:

Code: UPR-200-E-86

Names: UPR-200-E-86; 241-C Tank Farm Line (V812) Break Southwest Corner; UN-200-E-86; UN-216-E-14

Code: 200-E-154-PL **Classification:** Accepted
Names: 200-E-154-PL; Direct Buried Transfer Line from 241-C-151 to 241-AX-01A; Tank Farm Pipeline; Tank Farm Transfer Line V113 **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: Tank Farm Transfer Line V113 is a 3 inch diameter, direct buried Tank Farm process waste pipe. The site is radiologically posted as an Underground Radioactive Material Area.
Location: Line V113 originates inside 241-C Tank Farm at the 241-C-151 Diversion Box and terminates at 241-AX-01A Pump Pit inside 241-A Tank farm.

Code: 200-E-155-PL **Classification:** Accepted
Names: 200-E-155-PL; Pipeline from 241-C Fence to Radioactive Process Sewer Line 2904-CR-1 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is an underground, 5 centimeter (2 inch) diameter, carbon steel pipeline.
Location: The pipeline originates at the 241-C-03A Pump Pit inside the 241-C tank farm and connects to the 30 inch corrugated metal pipe (200-E-237-PL) outside the northeast corner of the 241-C tank farm.
Process Description: 241-C farm condensate was transported to the disposal pond system through this pipeline, that connected to the 30 inch corrugated metal pipe (sitecode 200-E-237-PL).

Related Sites/ Structures: The pipeline is associated with the 241-C-03A pump pit and the 200-E-237-PL pipeline.

Code: 200-E-156-PL **Classification:** Accepted
Names: 200-E-156-PL; 216-C-1 Pipelines; Pipelines from 201-C to 216-C-1 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is the underground pipeline that fed the 216-C-1 crib. The eastern portion of the pipeline is a 5 centimeter (2 inch) diameter stainless steel pipe. It connects to a 10 centimeter (4 inch) diameter stainless steel pipe as it enters the crib. It is not separately marked or posted. The pipeline is under the 200-E-41 stabilization cover material.
Location: The pipeline is located inside 200 East Area, south of 7th Street, within the Hot Semiworks stabilized area (sitecode 200-E-41).
Process Description: The original crib line is a 10 centimeter (4 inch) diameter stainless steel line extending from the south wall of 201-C to the 216-C-1 crib. In 1954, the 201-C waste was rerouted through a 5 centimeter (2 inch) diameter stainless steel line extending out of the southeast corner of 201-C. The 5 centimeter (2 inch) diameter stainless steel replacement line ties into the original 10 centimeter (4 inch) diameter line north of the 216-C-1 crib. The original 10 centimeter (4 inch) diameter line was re-routed to the 216-C-9 Pond.

Related Sites/ Structures: The pipeline is associated with the demolished 201-C facility, the 216-C-1 crib and the 200-E-41 stabilized area.

Code: 200-E-157-PL **Classification:** Accepted
Names: 200-E-157-PL; 216-C-10 Pipeline; Pipeline from 201-C to 216-C-10 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is two underground, 5 centimeter (2 inch) diameter stainless steel pipelines that fed the 216-C-10 crib. The original pipeline extended from 201-C to 216-C-10. A second pipeline, from 241-CX vault, tied into the original 216-C-10 crib line after the 216-C-6 crib was deactivated.
Location: The 216-C-10 crib is located east of the Hot Semiworks stabilized area (sitecode 200-E-41). The crib pipeline extends from the demolished 201-C facility, located with the 200-E-41 area, to the 216-C-10 crib.
Process Description: The 216-C-10 crib received process condensate and liquid waste from the 201-C Building via this pipeline. A gate valve is located at approximately the mid point of the line, between 201-C and 216-C-10. The line was blanked where it tied into the 216-C-6 crib line (see sitecode 200-E-171-PL).

Related Sites/ Structures: The site is associated with 200-E-41, the 216-C-10 crib and the 200-E-171-PL pipeline.

This Site has the Following SubSites:

Code: 200-E-157-PL:1
Names: 200-E-157-PL:1; Pipeline from 201-C to 216-C-10 Crib
Code: 200-E-157-PL:2
Names: 200-E-157-PL:2; Pipeline from 241-CX Vault to 216-C-10 Crib Line

Code: 200-E-157-PL:1 **Classification:** Accepted
Names: 200-E-157-PL:1; Pipeline from 201-C to 216-C-10 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-157-PL
Names: 200-E-157-PL; 216-C-10 Pipeline; Pipeline from 201-C to 216-C-10 Crib

Code: 200-E-157-PL:2 **Classification:** Accepted
Names: 200-E-157-PL:2; Pipeline from 241-CX Vault to 216-C-10 Crib Line **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-157-PL

Names: 200-E-157-PL; 216-C-10 Pipeline; Pipeline from 201-C to 216-C-10 Crib

Code: 200-E-158-PL

Classification: Accepted

Names: 200-E-158-PL; 216-A-1 Pipeline; Pipeline from Sample Pit #3 to 216-A-1 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site is an underground pipeline. It is not separately marked or posted on the surface.

Location: Sample Pit #3, the 216-A-1 crib and associated pipeline are located east of the 241-A tank farm, on the east side of Canton Ave.

Process Description: The pipeline is constructed of six inch diameter, extra strong, vitrified clay.

Related Sites/ Structures: The pipeline is associated with the 216-A-1 crib.

Code: 200-E-159-PL

Classification: Accepted

Names: 200-E-159-PL; Pipeline from 203-A to 216-A-22; Pipeline from 203-A to 216-A-28 Crib; Pipeline from UNH Truck Apron to 216-A-22

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is a series of underground pipelines from the 203-A facility to the 216-A-22 and 216-A-28 cribs and drainage from the UNH Truck Apron. The pipeline is a 10 centimeter (4-inch) stainless steel 304 perforated pipe. It is 1.2 meters (4 feet) below grade.

Location: The pipeline and crib are located north of PUREX, and north of the 203-A tank storage area.

Process Description: The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 liter (100,000 gallon) stainless steel tanks for UNH storage and three smaller nitric acid tanks. The 216-A-22 crib received liquid waste from the 203-A sumps and heating coil condensate from the uranyl nitrate tanks and the truck apron. The effluent was routed to the 216-A-28 crib in 1958. The effluent piping to 216-A-28 was blanked off in November 1976 when the flow rate exceeded the infiltration capacity of the 216-A-28 crib.

Related Sites/ Structures: The pipelines are associated with 216-A-22, the UNH Truck Apron sump and 216-A-28.

This Site has the Following SubSites:

Code: 200-E-159-PL:1

Names: 200-E-159-PL:1; Pipeline from 203-A to 216-A-22

Code: 200-E-159-PL:2

Names: 200-E-159-PL:2; Pipeline from UNH Truck Apron to 216-A-22

Code: 200-E-159-PL:3

Names: 200-E-159-PL:3; Pipeline from 203-A to 216-A-28 Crib

Code: 200-E-159-PL:1 **Classification:** Accepted
Names: 200-E-159-PL:1; Pipeline from 203-A to 216-A-22 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is a 10 centimeter (4 inch) diameter U3-CD pipe.
Location: 200-E-159-PL:1 is the line from 203-A to 216-A-22

The SubSite is Part Of:

Code: 200-E-159-PL
Names: 200-E-159-PL; Pipeline from 203-A to 216-A-22; Pipeline from 203-A to 216-A-28 Crib; Pipeline from UNH Truck Apron to 216-A-22

Code: 200-E-159-PL:2 **Classification:** Accepted
Names: 200-E-159-PL:2; Pipeline from UNH Truck Apron to 216-A-22 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is a 10 centimeter (4 inch) diameter U3-DC pipe.
Location: 200-E-159-PL:2 is the drain line from the truck apron to 216-A-22

The SubSite is Part Of:

Code: 200-E-159-PL
Names: 200-E-159-PL; Pipeline from 203-A to 216-A-22; Pipeline from 203-A to 216-A-28 Crib; Pipeline from UNH Truck Apron to 216-A-22

Code: 200-E-159-PL:3 **Classification:** Accepted
Names: 200-E-159-PL:3; Pipeline from 203-A to 216-A-28 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is constructed of 10 centimeter (4 inch) diameter stainless steel tubing.
Location: 200-E-159-PL:3 is the underground line from the 216-A-22 pipeline (subsite 1) to the 216-A-28 crib

The SubSite is Part Of:

Code: 200-E-159-PL
Names: 200-E-159-PL; Pipeline from 203-A to 216-A-22; Pipeline from 203-A to 216-A-28 Crib; Pipeline from UNH Truck Apron to 216-A-22

Code: 200-E-160-PL **Classification:** Accepted
Names: 200-E-160-PL; Pipeline from 270-E-1 to 216-B-12 Crib; V219 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**

Status: Inactive**End Date:****Description:** The waste site is an underground, 15 centimeter (6 inch diameter), vitrified clay pipeline from the 270-E-1 neutralization pit to the 216-B-12 crib.**Location:** The pipeline is located west of 221-B, north of 7th Street.**Process Description:** A (3 inch) stainless steel line (V219) diverts from a multi-line encasement to the 270-E-1 Neutralization Pit. A 15.2 centimeter (6 inch) stainless steel pipeline exits the 270-E-1 tank and connects to a 15.2 centimeter vitrified clay pipe, that goes to the 216-B-12 crib.**Related Sites/ Structures:** The site is associated with the 241-ER-151 Diversion Box, 216-B-12 crib and 270-E-1.**Code:** 200-E-161-PL**Classification:** Accepted**Names:** 200-E-161-PL; Pipeline from 221-BB to 216-B-55 Crib; V841**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The waste site is an underground, 15 centimeter (6 inch) diameter, carbon steel pipeline that fed the 216-B-55 crib. This line was later cut and capped and replaced with a 20 centimeter (8 inch diameter) carbon steel pipeline.**Location:** The pipeline originates south of B Plant, at 221-BB. It runs westward to the 216-B-55 Crib.**Code:** 200-E-162-PL**Classification:** Accepted**Names:** 200-E-162-PL; Lateral Line to 216-B-12 Crib #2; Pipeline from 221-BB to 216-B-62 Crib; V842**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The waste site is a 10 centimeter (4 inch), Fiberglass Reinforced Epoxy, underground pipeline that originates in the 221-BB Sample Pit. The site includes the pipeline to the 216-B-62 crib and a lateral line to 216-B-12, crib number 2 (see subsites).**Location:** The pipeline originates on the south side of B Plant at the 221-BB Sample Pit. It extends northwest of the 221-B building to the 216-B-62 crib.**Process Description:** The pipeline carried B Plant process condensate waste from B Plant to 216-B-62 crib and crib #2 of 216-B-12.**Related Sites/ Structures:** The pipeline is associated with 216-B-62 crib and 216-B-12 crib.**This Site has the Following SubSites:****Code:** 200-E-162-PL:1**Names:** 200-E-162-PL:1; Pipeline from 221-B to 216-B-62 Crib**Code:** 200-E-162-PL:2**Names:** 200-E-162-PL:2; Lateral Pipe to Crib #2 of 216-B-12

Code: 200-E-162-PL:1 **Classification:** Accepted
Names: 200-E-162-PL:1; Pipeline from 221-B to 216-B-62 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is an underground, 10 centimeter (4 inch) diameter, Fiberglass Reinforced Epoxy pipe.
Location: The pipeline originates on the south side of B Plant at the 221-BB Sample Pit. It extends northwest of the 221-B building to the 216-B-62 crib.

The SubSite is Part Of:

Code: 200-E-162-PL
Names: 200-E-162-PL; Lateral Line to 216-B-12 Crib #2; Pipeline from 221-BB to 216-B-62 Crib; V842

Code: 200-E-162-PL:2 **Classification:** Accepted
Names: 200-E-162-PL:2; Lateral Pipe to Crib #2 of 216-B-12 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: An underground, 10 centimeter (4 inch) diameter, Fiberglass Reinforced Epoxy pipe tees off the 216-B-62 main line to feed the center crib at 216-B-12.

The SubSite is Part Of:

Code: 200-E-162-PL
Names: 200-E-162-PL; Lateral Line to 216-B-12 Crib #2; Pipeline from 221-BB to 216-B-62 Crib; V842

Code: 200-E-163-PL **Classification:** Not Accepted
Names: 200-E-163-PL; Pipeline from BCS Diverting Pit to 216-B-64 Retention Basin **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The effluent line from the B Plant Condensate Steam (BCS) diversion pit consisted of three pipelines. Two lines were 5 centimeter (2 inch) carbon steel and one was an 20 centimeter (8 inch carbon) steel line.
Location: The pipeline is located west of 225-B, west of Atlanta Ave.
Related Sites/ Structures: The pipeline is associated with the 216-B-64 basin.

Code: 200-E-164-PL **Classification:** Accepted
Names: 200-E-164-PL; Pipeline Between the 216-A-8 Control Structure and the 216-A-508 Control Structure; Pipeline to 216-A-8 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The site is a 41 centimeter (16 inch) diameter, schedule 20 steel pipeline.

Location: The pipeline runs eastward, from the 216-A-8 Control Structure (adjacent to 241-A Tank Farm) to the 216-A-508 Control Structure at the north end of the 216-A-8 crib. The crib is located east of the 200 East Area fence.

Related Sites/ Structures: The pipeline is associated with the 216-A-8 Control Structure, the 216-A-508 Control Structure and the 216-A-8 crib.

Code: 200-E-165-PL **Classification:** Accepted

Names: 200-E-165-PL; Pipeline to 216-A-24 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is a 41 centimeter (16 inch) carbon steel pipeline. The pipeline connects the 216-A-508 Control Structure to the 216-A-524 Control Structure. A 5 centimeter (2 inch) diameter Bypass line extends from the 216-A-524 Control Structure to the third lobe of the crib structure (see subsites).

Location: The pipeline is located east of the 200 East Area fence. It runs north from the 216-A-508 Control Structure to the 216-A-524 Control Structure located on the west end of the 216-A-24 crib.

This Site has the Following SubSites:

Code: 200-E-165-PL:1

Names: 200-E-165-PL:1; Main Pipeline Between 216-A-508 Control Structure and 216-A-524 Control Structure

Code: 200-E-165-PL:2

Names: 200-E-165-PL:2; Bypass Line

Code: 200-E-165-PL:1 **Classification:** Accepted

Names: 200-E-165-PL:1; Main Pipeline Between 216-A-508 Control Structure and 216-A-524 Control Structure **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The main pipeline is a (16 inch) diameter carbon steel line.

The SubSite is Part Of:

Code: 200-E-165-PL

Names: 200-E-165-PL; Pipeline to 216-A-24 Crib

Code: 200-E-165-PL:2 **Classification:** Accepted

Names: 200-E-165-PL:2; Bypass Line **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: A 5 centimeter (2 inch) diameter bypass line extends along the north side of the 216-A-24 crib, from the 216-A-524 Control Structure to the third lobe of the crib.

The SubSite is Part Of:**Code:** 200-E-165-PL**Names:** 200-E-165-PL; Pipeline to 216-A-24 Crib**Code:** 200-E-166-PL**Classification:** Accepted**Names:** 200-E-166-PL; Pipeline to 216-A-34 Ditch**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The site is an underground, 38 centimeter (15 inch) diameter, vitrified clay pipe.**Location:** The pipeline extends eastward from the 241-A tank farm, beyond the 200 East Area fence, to the head end of 216-A-34.**Release Description:** UPR-200-E-145 states - In 1993, while excavating for the installation of a new pipeline (Project W-049H) and exposing existing utility lines, contaminated soil with a radiological reading of 300,000 disintegrations/minute beta-gamma was detected at a depth of 0.8 meter (2.5 feet). The contamination was found above an existing 38 centimeter (15 inch) vitrified clay pipe, which was suspected to be the source.**Process Description:** The 216-A-34 ditch received cooling water from the contact condenser in the 241-A-431 building via a VCP pipeline.**Related Sites/ Structures:** The site is associated with the 216-A-8 Sample Pit (control structure) and the 216-A-34 ditch. UPR-200-E-145 found contamination associated with this pipeline.**Code:** 200-E-167-PL**Classification:** Accepted**Names:** 200-E-167-PL; Lines SN-215 and SN-216; Underground Pipelines from 244-A Lift Station to 241-A-A and 241-A-B Valve Pits**Reclassification:** None**Type:** Encased Tank Farm Pipeline**Start Date:****Status:** Inactive**End Date:****Description:** The waste site is two underground, carbon steel pipelines.**Location:** The pipeline is located south of 7th Street and west of Buffalo Ave., inside 200 East Area.**Process Description:** Lines SN-215 and SN-216 are in the same trench that connects 244-A Lift Station with the 241-A-A and 241-A-B Valve Pits. They are double contained (pipe-in-pipe), carbon steel lines that are surrounded by a minimum of 7.6 centimeters (3 inches) of polyurethane insulation. The interior pipe is 7.6 centimeter (3 inch diameter) schedule 40 pipe. The outer pipe is 15.2 centimeter (6 inch diameter) schedule 40 pipe.**Related Sites/ Structures:** The pipelines are associated with the 244-A Lift Station and the 241-A Tank Farm.**Code:** 200-E-168-PL**Classification:** Accepted**Names:** 200-E-168-PL; Underground Pipeline to 216-A-3**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:** 1/1/1956

Process Description: The 216-C-6 crib received radioactive REDOX and PUREX type process condensate from 201-C and 241-CX vault floor drainage via this pipeline. When the 216-C-6 crib was discontinued, the effluent was diverted to the 216-C-10 crib via pipeline 200-E-157-PL.

Related Sites/ Structures: The pipeline is associated with the 216-C-6 crib, the 241-CX vault and the 200-E-157-PL pipeline.

Code: 200-E-172-PL **Classification:** Accepted

Names: 200-E-172-PL; Pipeline from 209-E to the 216-C-7 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground 5 centimeter (2 inch) stainless steel pipeline.

Location: The pipeline is located south of the 209-E building.

Process Description: The 209-E building was designed to perform critical mass experiments using plutonium nitrate solutions and enriched uranium. At the completion of an experiment, the waste in the Neutron Reflector Tanks was discharged to a 222 liter (60 gallon) buried waste tank outside the building (Critical Mass Laboratory Valve Pit and Hold Up Tank (209-E-TK-111)). After sampling, the tank contents that were below levels of concern were discharged to the 216-C-7 crib.

Related Sites/ Structures: The pipeline is associated with the 216-C-7 crib.

Code: 200-E-173-PL **Classification:** Accepted

Names: 200-E-173-PL; Pipeline from 241-CX-71 to 216-C-5 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground 5 centimeter (2 inch) diameter, carbon steel pipeline.

Location: The pipeline is located south of the demolished 201-C facility. It curves around the 216-C-1 crib area.

Process Description: The pipeline carried High Salt Waste that had passed through the 241-CX-71 neutralization tank to the 216-C-5 crib.

Code: 200-E-174-PL **Classification:** Accepted

Names: 200-E-174-PL; 216-B-10 (A&B) Pipeline; Pipeline from 221-BC and 222-B to 216-B-10 A&B Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 9 centimeter (3.5 inch) diameter, stainless steel pipeline. The pipeline extends north and south from the 221-BC building and east to west from the 222-B

building to connect to the 216-B-10 A&B cribs.

Location: The pipeline is located south of the 221-B building.

Process Description: In 1949, the pipeline began to carry waste from the 222-B laboratory sink and sample slupper to the 216-B-10A and 10B cribs. In 1969, flow to the 216-B-10A crib was terminated. The pipeline was rerouted to feed only the 216-B-10B crib (see subsite 3). An in-line catch tank was added to the pipeline (see sitecode 200-E-179). The pipeline was extended northward to provide drainage from the 221-BC building. The pipeline and catch tank were abandoned in 1974.

Related Sites/ Structures: The pipeline is associated with the 216-B-10 A & B cribs, 200-E-179 catch tank, the 222-B laboratory and the 221-BC building.

This Site has the Following SubSites:

Code: 200-E-174-PL:1

Names: 200-E-174-PL:1; East/West Pipeline from 222-B

Code: 200-E-174-PL:2

Names: 200-E-174-PL:2; North/South Pipeline from 221-BD to 216-B-10 A&B Cribs

Code: 200-E-174-PL:3

Names: 200-E-174-PL:3; Diagonal Pipe from 200-E-179 In-Line Catch Tank to 216-B-10B Crib

Code: 200-E-174-PL:4

Names: 200-E-174-PL:4; Pipeline Connecting 216-B-10A to 216-B-10B

Code: 200-E-174-PL:1

Classification: Accepted

Names: 200-E-174-PL:1; East/West Pipeline from 222-B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-174-PL

Names: 200-E-174-PL; 216-B-10 (A&B) Pipeline; Pipeline from 221-BC and 222-B to 216-B-10 A&B Cribs

Code: 200-E-174-PL:2

Classification: Accepted

Names: 200-E-174-PL:2; North/South Pipeline from 221-BD to 216-B-10 A&B Cribs

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-174-PL

Names: 200-E-174-PL; 216-B-10 (A&B) Pipeline; Pipeline from 221-BC and 222-B to 216-B-10 A&B Cribs

Code: 200-E-174-PL:3

Classification: Accepted

Names: 200-E-174-PL:3; Diagonal Pipe from 200-E-179 In-Line Catch Tank to 216-B-10B Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Pipe installed to redirect flow to only the 216-B-10B crib after 216-B-10A was terminated.

The SubSite is Part Of:

Code: 200-E-174-PL

Names: 200-E-174-PL; 216-B-10 (A&B) Pipeline; Pipeline from 221-BC and 222-B to 216-B-10 A&B Cribs

Code: 200-E-174-PL:4

Classification: Accepted

Names: 200-E-174-PL:4; Pipeline Connecting 216-B-10A to 216-B-10B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-174-PL

Names: 200-E-174-PL; 216-B-10 (A&B) Pipeline; Pipeline from 221-BC and 222-B to 216-B-10 A&B Cribs

Code: 200-E-175-PL

Classification: Accepted

Names: 200-E-175-PL; Pipeline from 292-B to 216-B-10 A&B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 9 centimeter (3.5 inch) diameter, stainless steel tubing pipeline.

Location: The pipeline is located southeast of the 221-B building. It runs diagonally from the 292-B building to the 216-B-10 A crib.

Process Description: The pipeline carried floor drainage waste from the 292-B building to the 216-B-10 A crib.

Related Sites/ Structures: The pipeline is associated with the 216-B-10A crib.

Code: 200-E-176-PL

Classification: Not Accepted

Names: 200-E-176-PL; Pipeline from 242-B to 216-B-11-A&B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Due to the restructuring of Operable Units, as described in the Tentative Agreement for Central Plateau Cleanup, this pipeline has been split into segments (see 200-E-176-PL-A and 200-E-176-PL-B). The waste site is an underground, 7.6 centimeter (3 inch) diameter, carbon steel pipeline.

Location: The pipeline extends northward from the 242-B Evaporator building to the 216-B-11 A cribs.

Process Description: The pipeline transported evaporator condensate waste to the cribs.

Related Sites/ Structures: The pipeline is associated with the 242-B evaporator and the 216-B-11 A&B cribs.

Structures:

Code: 200-E-176-PL-A **Classification:** Accepted
Names: 200-E-176-PL-A; Pipeline from 242-B to 216-B-11-A&B, Portion of pipeline outside the 241-B fence **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter, carbon steel pipeline.
Location: The pipeline extends northward from the 242-B Evaporator building to the 216-B-11 A cribs, crossing through the 241-B tank farm. This waste site is two segments of pipeline (north portion and south portion) that are outside the 241-B tank farm fence. The north portion of this pipeline extends from the north 241-B fence to the 216-B-11A & B reverse wells. The south portion extends from the 242-B building to the tank farm fence.

Code: 200-E-176-PL-B **Classification:** Accepted
Names: 200-E-176-PL-B; Pipeline from 242-B to 216-B-11-A&B, Portion of pipeline inside the 241-B fence **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter, carbon steel pipeline. The majority of the pipeline is located inside the 241-B tank farm.
Location: The pipeline extends northward from the 242-B Evaporator building to the 216-B-11 A cribs, crossing through the 241-B tank farm. This waste site represents the portion of the pipeline that is located inside the 241-B tank farm fence.

Code: 200-E-177-PL **Classification:** Accepted
Names: 200-E-177-PL; Pipeline Rerouting Waste from 216-B-8 Crib Pipeline to 216-B-11A&B Reverse Wells **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter carbon steel pipeline.
Location: The pipeline extends eastward from the 216-B-8 pipeline (200-E-178-PL), north of the 241-B Tank Farm, to 216-B-11A.
Process Description: This pipeline was installed to reroute the 216-B-8 crib waste to the 216-B-11 A&B cribs.
Related Sites/Structures: The pipeline is associated with the 216-B-11 A&B cribs and the pipeline that fed the 216-B-8 crib (200-E-178-PL).

Code: 200-E-178-PL **Classification:** Accepted
Names: 200-E-178-PL; Pipeline from Tank 241-B-110 to **Reclassification:** None

Related Sites/ Structures: The pipeline is associated with the 216-B-61 crib.

Code: 200-E-182-PL **Classification:** Accepted
Names: 200-E-182-PL; 216-A-7 Crib Pipeline **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The site is an underground, 15 centimeter (6 inch) diameter, vitrified clay pipe.

Location: The pipeline extends eastward from the 241-A-302B Catch Tank, under Canton Ave., to the 216-A-7 crib. A portion of the pipeline is inside the 241-A Tank Farm.

Related Sites/ Structures: The pipeline is associated with the 241-A-152 Diversion Box, the 241-A-302B Catch Tank and the 216-A-7 crib.

Code: 200-E-183-PL **Classification:** Accepted
Names: 200-E-183-PL; Lines V010 and V011; Pipelines from 241-A-151 Diversion Box to 216-A-2 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site consists of two, stainless steel pipelines, direct buried in the same soil trench. V010 and V011 are 7.6 (3 inch) stainless steel pipes. Lines V014 and V016 are buried adjacent to lines V010 and V011 (see sitecode 200-E-185-PL).

Location: The pipelines are located south of PUREX. They extend southward from the 241-A-151 Diversion Box to the 216-A-2 and 216-A-4 Cribs.

Process Description: Lines V010, V011, V014 and V016 extend from the 241-A-151 diversion box in the same soil trench. At a point just north of the 216-A-4 crib, the lines separate. Lines V010 and V011 split off and tie into the 216-A-2 crib structure. Lines V014 and V016 tie into the 216-A-4 crib structure.

Related Sites/ Structures: The lines are associated with the 241-A-151 Diversion Box, 216-A-2 crib, 216-A-4 crib, 200-E-184-PL, 200-E-185-PL and 200-E-196-PL.

Code: 200-E-184-PL **Classification:** Accepted
Names: 200-E-184-PL; 216-A-2 Crib Pipelines; V010 and V011 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is two parallel, 10 centimeter (4 inch) diameter, vitrified clay pipes that fed the 216-A-2 crib. The two lines are direct buried in the same soil trench.

Location: The pipelines are located south of the 202-A facility and west of the 216-A-4 crib.

Process Description: Waste lines V010 and V011 originated at the 241-A-151 Diversion Box (see sitecode 200-E-183-PL). They are direct buried in the same soil trench with lines V014, V016 and T167. At a point just north of the 216-A-4 crib, the lines separate. Three lines (V014, V016 and T167) tie into the 216-A-4 crib structure. Lines V010 and V011 split off and tie into the 216-A-2 crib

structure. The line numbers V010 and V011 indicate the specific waste stream. When the 216-A-2 crib was abandoned, the pipelines were cut. The effluent was redirected to the 216-A-31 crib by extending lines V010 and V011 (see sitecode 200-E-186-PL)

Related Sites/ Structures: The pipelines are associated with the 241-A-151 Diversion Box, 200-E-183-PL, 200-E-186-PL and the 216-A-2 crib.

Code: 200-E-185-PL **Classification:** Accepted

Names: 200-E-185-PL; 216-A-4 Crib Pipelines; V014 and V016 **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site consists of two, stainless steel pipelines, direct buried in the same soil trench. Lines V014 and V016 are 7.6 (3 inch) stainless steel pipes. Lines V010 and V011 are buried adjacent to lines V014 and V016 in the same soil trench (see sitecode 200-E-183-PL). Lines V014 and V016 connect into the 216-A-4 crib structure using a Double Y Connection to connect into the vitrified clay crib distribution pipes. Line T167 enters the soil trench just north of the 216-A-4 crib (see sitecode 200-E-196-PL).

Location: The 216-A-4 crib lines are located south of 202-A. They enter the north side of the crib structure.

Process Description: The line numbers indicate a specific waste stream. Waste lines V014, V016 originate at the 241-A-151 Diversion Box. They are direct buried in the same soil trench with lines V010, V011. At a point just north of the 216-A-4 crib, the lines separate. Near the north side of the 216-A-4 crib, line T022 from the 291-A Control House, enters the pipe trench and ties into line T167, becoming part of line T167 (see sitecode 200-E-196-PL). Line T167 is connected to the 216-A Sample Pit. These three lines (V014, V016 and T167) tie into the 216-A-4 crib structure. Lines V010 and V011 split off and tie into the 216-A-2 crib structure. Line V014 was later rerouted to 216-A-TK-2 and blanked off.

Related Sites/ Structures: The pipelines are associated with the 241-A-151 Diversion Box, 216-A-TK-2, 200-E-183-PL, 200-E-196-PL and the 216-A-4 crib.

Code: 200-E-186-PL **Classification:** Accepted

Names: 200-E-186-PL; 216-A-31 Crib Pipelines; V010 and V011 **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two underground, 7.6 centimeter (3 inch) diameter, stainless steel pipes that are buried in the same soil trench.

Location: The pipelines are located south of 202-A. The 216-A-31 crib pipelines originate at a point where the 216-A-2 crib lines were abandoned.

Process Description: When discharge to the 216-A-2 crib was discontinued, flow was diverted to the 216-A-31 crib through two stainless steel pipelines. The line numbers V010 and V011 indicate the waste stream was diverted from 216-A-2 to 216-A-31.

Related Sites/ Structures: The site is associated with the 216-A-31 crib and pipeline 200-E-184-PL.

Structures.

Code: 200-E-187-PL **Classification:** Accepted

Names: 200-E-187-PL; Chemical Sewer from 202-A to 216-A-29 Ditch; Lines 8819, 5802 and 5701; PUREX Chemical Sewer (CSL) **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground chemical sewer pipeline. The pipeline begins as a 30 centimeter (12 inch) diameter vitrified clay line but increases to a 38 centimeter (15 inch) diameter vitrified clay line about midway before reaching the 216-A-29 ditch. The original chemical sewer line connected to a 183 centimeter (36 inch) diameter corrugated metal pipe prior to entering the 216-A-29 ditch head wall. Eight manholes and the 216-A-42E control structure are located along the pipeline. A section of this sewer near 216-A-42 basin is constructed of polyethylene plastic.

Location: The chemical sewer line extends from the north side of the 202-A facility and runs eastward to the head end of the 216-A-29 ditch.

Process Description: The pipeline carried PUREX chemical sewer waste to the 216-A-29 ditch. The 241-A Tank Farm was constructed during 1984 and 1985. The head end of the 216-A-29 ditch was relocated and a portion of the chemical sewer was re-routed north of the new tank farm on the north side of 4th Street. A short piece of the original 183 centimeter (36 inch) diameter corrugated metal pipe remains near the north side of the 272-AW building.

Related Sites/ Structures: The waste site is associated with the PUREX facility and the 216-A-29 ditch.

Code: 200-E-188-PL **Classification:** Accepted

Names: 200-E-188-PL; 2904-E-2; B Plant Chemical Sewer Line; BCE; 15-Inch VP Line **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is the underground 38 centimeter (15 inch) diameter vitrified clay pipe and a section of 40 centimeter (16 inch) diameter steel piping, from B-Plant to the valve box east of the 207-B Retention Basin. The pipeline is also known as 2904-E-2 and the B Plant Chemical Sewer. The pipelines are marked above ground with steel posts and "Underground Radioactive Material/Pipeline" signs. Access manholes are located at intervals along the length of pipelines. Vegetation over the pipelines consists of grass and tumbleweeds, with several areas of bare soil.

Location: The 2904-E-2 chemical sewer line runs from the north side of 221-B to the east side of the 207-B Retention Basin. The 2904-E-2 pipeline bypasses the retention basin to discharge directly into the 216-B-2 ditches.

Release Description: UPR-200-E-138 is associated with the B Plant chemical sewer pipeline. On March 22, 1970, a leaking manometer sensing line from the 8-1 Tank inside the 221-B Building was flushed down a floor drain connected to a chemical sewer that contaminated the 216-B-2-2 Ditch and the 216-B-3 Pond. The pipeline bypasses the 207-B Retention Basin so the retention basin was not contaminated as a result of this release, but the release did contaminate the 216-B-2-2 ditch. On March 23, 1970 at 6:00 am, a dose rate of 5 R/hr was noted at check point number one of

the 216-B-2-2 Ditch.

Process Description: The 200-E-188-PL (2904-E-2) pipeline bypassed the retention basin to discharge directly into the 216-B-2 ditches. H-2-35495 shows the chemical sewer pipe being cut and plugged south of the valve pit in 1970. Two new 40 centimeter (16 inch) diameter steel pipes (see sitecode 200-E-205-PL) were installed to route effluent to the 216-B-2-3 ditch (see 200-E-205-PL). The piping and valve configuration allowed flow to be diverted to the 216-B-63 ditch (See 200-E-191-PL) or the 216-B-2-3 ditch.

Related Sites/ Structures: The pipeline is associated with 221-B, 225-B, 211-B, 212-B, 276-B, 224-B, 222-B, the 216-B-2 ditches, 216-B-63 ditch, 200-E-191-PL, 200-E-204-PL, 200-E-205-PL.

Code: 200-E-189 **Classification:** Accepted

Names: 200-E-189; 216-A-TK-1 Carbonate Neutralization Tank **Reclassification:** None

Type: Neutralization Tank **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground neutralization tank.

Location: The tank is located south of PUREX, south of the 291-A stack.

Process Description: The tank held calcium carbonate that changed the pH of the 291-A stack condensate waste via line T021.

Related Sites/ Structures: The tank is associated with the 291-A stack and the 216-A-TK-2 catch tank.

Code: 200-E-190 **Classification:** Accepted

Names: 200-E-190; 216-A-TK-2 Catch Tank **Reclassification:** None

Type: Catch Tank **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground catch tank.

Location: The catch tank is located south of PUREX and west of the 216-A Sample Pit.

Process Description: Multiple waste lines from the 216-A Sample Pit fed the catch tank. Waste was jetted from the catch tank to the 216-A-21 crib.

Related Sites/ Structures: Line V014 is described in sitecode 200-E-185-PL.

Code: 200-E-191-PL **Classification:** Accepted

Names: 200-E-191-PL; 216-B-63 Pipeline; Pipeline from 207-B Valve Pit to 216-B-63 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground 38 centimeter (15 inch) diameter vitrified clay pipeline. The

Description: vitrified clay pipeline is connected to the valve pit on the east side of the 207-B Retention basin by a short piece of 41 centimeter (16 inch) diameter carbon steel pipe.

Location: The pipeline is located northeast of the 207-B Retention Basin.

Process Description: The pipeline fed the 216-B-63 ditch.

Related Sites/ Structures: The pipeline is associated with the 216-B-63 ditch and the 207-B Retention Basin.

Code: 200-E-192-PL **Classification:** Accepted

Names: 200-E-192-PL; 216-A-10 Pipelines; Lines from Sample Pit 4 to 216-A-10 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:** 1/1/1956

Status: Inactive **End Date:** 1/1/1987

Description: The original pipeline to 216-A-10 crib is an underground, 20 centimeter (8 inch) diameter, vitrified clay pipe. The original pipe connected to the center crib distribution line. The 216-A-10 replacement pipeline is an underground, 20 centimeter (8 inch) diameter stainless steel pipeline. The replacement pipeline connected to a new distribution pipe, east of the original distribution pipe.

Location: The pipelines to the 216-A-10 crib are located south of PUREX, southwest of 216-A-5.

Process Description: On April 19, 1962, the clay distributor pipe to the 216-A-10 crib collapsed and caused a surface depression. A new distributor (replacement) line was installed parallel to the collapsed line. The replacement line failed in 1966.

Related Sites/ Structures: The pipeline is associated with the 216-A-10 crib and Sample Pit number 4.

This Site has the Following SubSites:

Code: 200-E-192-PL:1
Names: 200-E-192-PL:1; Original Vitrified Clay Crib Pipeline

Code: 200-E-192-PL:2
Names: 200-E-192-PL:2; 216-A-10 Replacement Pipeline

Code: 200-E-192-PL:1 **Classification:** Discovery

Names: 200-E-192-PL:1; Original Vitrified Clay Crib Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The original crib pipeline is a 20 centimeter (8 inch) vitrified clay pipeline.

The SubSite is Part Of:

Code: 200-E-192-PL
Names: 200-E-192-PL; 216-A-10 Pipelines; Lines from Sample Pit 4 to 216-A-10 Crib

Code: 200-E-192-PL:2 **Classification:** Discovery

Names: 200-E-192-PL:2; 216-A-10 Replacement Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The replacement pipeline is constructed of 20 centimeter (8 inch) diameter stainless steel.

The SubSite is Part Of:

Code: 200-E-192-PL

Names: 200-E-192-PL; 216-A-10 Pipelines; Lines from Sample Pit 4 to 216-A-10 Crib

Code: 200-E-193-PL **Classification:** Accepted

Names: 200-E-193-PL; 216-A-21 Crib Pipeline; Line X015 **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 15 centimeter (6 inch) diameter, vitrified clay pipeline.

Location: The pipeline is located south of PUREX and east of the 216-A-4 crib.

Process Description: The 216-A-21 crib received sump waste from 293-A Building, laboratory cell drainage from the 202-A Building, and the 291-A-1 Stack drainage via this pipeline. The VCP line was later replaced with a stainless steel line (see sitecode 200-E-196-PL).

Related Sites/ Structures: The VCP pipeline is associated with the 216-A-21 crib, 200-E-196-PL, 200-E-253-PL and the 293-A building.

Code: 200-E-194-PL **Classification:** Accepted

Names: 200-E-194-PL; 216-A-32 Crib Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 15 centimeter (6 inch) diameter, vitrified clay pipeline that fed the 216-A-32 crib.

Location: The 216-A-32 crib and pipeline are located northeast of 202-A and west of the 2607-EE septic tank and tile field.

Process Description: The 216-A-32 crib received the 202-A canyon crane maintenance facility floor, sink, and shower drainage via this pipeline.

Related Sites/ Structures: The pipeline is associated with the 202-A canyon and the 216-A-32 crib.

Code: 200-E-195-PL **Classification:** Accepted

Names: 200-E-195-PL; 241-B-361 Settling Tank and 216-B-9 Crib Pipelines; Line V204 **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: B-361 Settling Tank that was later extended to the 216-B-9 crib. Line V204 begins at the 241-B-154 Diversion Box. Line 204 is in the same soil trench as several other tank farm lines (see sitecode 200-E-199-PL), but diverted to the 241-B-361 Settling Tank and later routed to the 216-B-9 crib.

Location: The pipeline is located northeast of 221-B, north of the 216-B-5 Reverse Well.

Release Description: UPR-200-E-7 states that a process waste line leak from 221-B caused the ground to cave-in near the 361-B crib (216-B-9). Approximately 5000 gallons of liquid was lost to the ground over an area approximately 30 square feet. The maximum dose rate was 1.7 rads/hour. The contamination was covered in 1954 and delineated with a chain. It was posted as Underground Contamination. This release is known as UPR-200-E-7.

Process Description: The 216-B-9 Crib and Tile Field were built in 1947 to replace the 241-B-361 Settling Tank and the 216-B-5 Reverse well. Line V204 was cut and rerouted to the 216-B-9 crib.

Related Sites/ Structures: The pipeline is associated with 221-B, the 216-B-9 crib, 241-B-361 and pipeline 200-E-199-PL.

This Site has the Following SubSites:

Code: 200-E-195-PL:1

Names: 200-E-195-PL:1; Original V204 3-Inch Stainless Steel Line to the 241-B-361 Settling Tank

Code: 200-E-195-PL:2

Names: 200-E-195-PL:2; Rerouted V204 3-Inch Stainless Steel Line to 216-B-9 Crib

Code: 200-E-195-PL:1

Classification: Accepted

Names: 200-E-195-PL:1; Original V204 3-Inch Stainless Steel Line to the 241-B-361 Settling Tank

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Line 204 diverts out of the tank farm encasement (200-E-199-PL) to connect to the 241-B-361 settling tank.

The SubSite is Part Of:

Code: 200-E-195-PL

Names: 200-E-195-PL; 241-B-361 Settling Tank and 216-B-9 Crib Pipelines; Line V204

Code: 200-E-195-PL:2

Classification: Accepted

Names: 200-E-195-PL:2; Rerouted V204 3-Inch Stainless Steel Line to 216-B-9 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-195-PL

Names: 200-E-195-PL; 241-B-361 Settling Tank and 216-B-9 Crib Pipelines; Line V204

Code: 200-E-196-PL

Classification: Accepted

Names: 200-E-196-PL; 216-A-21 and 216-A-27 Cribs; Lines T167 and T022; Stainless Steel Line to 216-A-4

Reclassification: None

Type: Radioactive Process Sewer

Status: Inactive

Description: The waste site is an underground stainless steel pipeline that fed the 216-A-4, 216-A-21 and 216-A-27 cribs. Portions of the line range in diameter from 5 centimeters (2 inch) to 7.6 centimeter (3 inch) diameter and 10 centimeter (4 inch) diameter.

Location: The pipeline is located south of 202-A. It originates at the 216-A-4 Sample Pit. The line originally fed the 216-A-4 crib, but later was extended further south (twice) to feed the 216-A-21 and 216-A-27 cribs.

Process Description: Line numbers indicate a specific waste stream. The T167 pipeline originally fed the 216-A-4 crib from the 216-A-4 sample building. Line T022 from the 291-A Fan Control House tied into T167 just north of the 216-A-4 crib. These lines are buried in the same soil trench as the lines described in 200-E-183-PL (V010, V011, V014 and V016). When the 216-A-4 crib was deactivated, line T167 was rerouted to the 216-A-21 crib. When the 216-A-21 crib was deactivated, line T167 was rerouted to feed the 216-A-27 crib. A branch of this pipeline tied to the 216-A-36 crib pipeline (see sitecode 200-E-253-PL).

Related Sites/Structures: The pipeline is associated with the 216-A-4 Sample Pit, 216-A-TK-2, the 291-A Control House, 216-A-4 crib, 216-A-21 crib, 216-A-27 crib, 216-A-26 crib and pipeline sites 200-E-183-PL, 200-E-185-PL, 200-E-253-PL and 200-E-270-PL.

Code: 200-E-198-PL

Classification: Accepted

Names: 200-E-198-PL; Encased Tank Farm Pipeline from 241-BX-154 Diversion to 241-BX-155 Diversion Box; Lines V282, V283, V284 and V285

Reclassification: None

Type: Encased Tank Farm Pipeline

Status: Inactive

Description: The waste site is an underground concrete transfer line encasement. Lines V282, V283, V284 and V285 are 9 centimeter (3.5 inch) diameter stainless steel lines. Line V285 diverts from the encasement and connects to transfer line 200-E-199-PL.

Location: The encased transfer line extends between 241-BX-154 Diversion Box, on the south side of 221-B to the 241-BX-155 Diversion Box located northeast of 221-B. The majority of this encased line is located on the west side of Baltimore Ave.

Related Sites/Structures: The waste lines are associated with B Plant processes, the 241-BX-154 Diversion Box and the 241-BX-155 Diversion Box.

Code: 200-E-199-PL

Classification: Accepted

Names: 200-E-199-PL; Lines V204, V206, V208, V209, V211, V213, V215, and V285; Tank Farm Lines from 241-B-154 Diversion Box to 241-B Tank Farm

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Status: Inactive

Description: The waste site is a group of underground stainless steel transfer lines buried in a common soil

Description:	trench. All of the pipelines are 9 centimeter (3.5 inch) diameter stainless steel lines.
Location:	The transfer line extends between the 241-B-154 Diversion Box, located at the corner of 7th Street and Baltimore Ave. and the 241-B Tank Farm. This transfer line is located on the east side of Baltimore Ave.
Release Description:	The exact location of the UPR-200-E-7 cave-in on the process line can not be determined from the available documentation. HW-60807 states that in 1954 a cave in occurred near the 361-B crib (alias 216-B-9 crib). The hand drawn sketch in HW-60807 shows the Unplanned Release location as being south and slightly west of the 361-B Reverse Well (216-B-5), approximately where the 241-B-361 tank is located. This location is approximately 125 meters (400 feet) southwest of the south edge of the posted 216-B-9 crib. It is near where pipelines 200-E-199-PL and 200-E-195-PL connect.
Process Description:	Lines V208, V209 and V211 extend between 241-B-154 Diversion Box and 241-B-152 Diversion Box (inside 241-B Tank Farm). Lines V213 and V215 extend between 241-B-154 Diversion Box and 241-B-151 Diversion Box (inside the 241-B Tank Farm). Line V285 enters the 200-E-199-PL encasement north of 241-B-154 Diversion Box from the encasement described in 200-E-198-PL. Line V204 diverted to the 241-B-361 Settling tank and was later extended to the 216-B-9 crib (see sitecode 200-E-195-PL).
Related Sites/Structures:	The waste site is associated with the 241-B-151, 241-B-152, 241-B-154 Diversion Boxes, UPR-200-E-7 and pipelines 200-E-195-PL, 200-E-198-PL and 200-E-277-PL.

Code:	200-E-201-PL	Classification:	Accepted
Names:	200-E-201-PL; Lines V315 and V319; Transfer Lines from 241-BX-155 to Diversion Boxes in 241-B Tank Farm	Reclassification:	None
Type:	Direct Buried Tank Farm Pipeline	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site is two underground, 9 centimeter (3.5 inch) diameter stainless steel pipelines buried in the same soil trench. Lines V315 and V319 divert out of a bundle of lines described in sitecode 200-E-202-PL.		
Location:	The transfer lines extend between the 241-BX-155 Diversion Box, on the west side of Baltimore Ave. and connect into the 241-B-151 and 241-B-152 Diversion Boxes located inside 241-B Tank Farm on the east side of Baltimore Ave.		
Related Sites/Structures:	The transfer lines are associated with B Plant processes, Diversion Boxes 241-BX-155, 241-B-151 and 241-B-152 and pipeline 200-E-202-PL.		

Code:	200-E-202-PL	Classification:	Accepted
Names:	200-E-202-PL; Lines V315, V316, V317, V318 and V319; Transfer Lines from 241-BX-155 Diversion Box to 241-BX-153 Diversion Box	Reclassification:	None
Type:	Direct Buried Tank Farm Pipeline	Start Date:	
Status:	Inactive	End Date:	
Description:	The waste site is five underground, 9 centimeter (3.5 inch) diameter stainless steel pipelines buried in the same soil trench. Lines V316, V317 and V318 connect to the 241-BX-153 Diversion Box in 241-BX Tank Farm. Lines V315 and V319 divert eastward north of the 241-		

BX-155 Diversion Box to connect to the 241-B Tank Farm (see sitecode 200-E-201-PL).

Location: The transfer lines extend from 241-BX-155 Diversion Box to 241-BX-153 Diversion Box in the 241-BX Tank Farm. These lines are on the west side of Baltimore Ave.

Related Sites/ Structures: The transfer lines are associated with B Plant process, 241-BX-155 and 241-BX-153 Diversion Boxes and pipeline sitecode 200-E-201-PL.

Code: 200-E-203-PL **Classification:** Accepted

Names: 200-E-203-PL; Line 9712; Pipeline from 241-BYR-154 Diversion Box to 216-B-2-2 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 15 centimeter (6 inch) diameter carbon steel pipe that fed the 216-B-2-2 ditch from diversion box 241-BY-154, located inside 241-BY Tank Farm.

Location: The pipeline extends eastward from the 241-BY-154 Diversion Box, located inside the 241-BY Tank Farm. It crosses under Baltimore Ave. and connects with the head end of the 216-B-2-2 ditch.

Related Sites/ Structures: The site is associated with 241-BY-154, 216-B-2-2 and pipeline site 200-E-204-PL.

Code: 200-E-204-PL **Classification:** Accepted

Names: 200-E-204-PL; Pipeline to 216-B-2-1 and 216-B-2-2 Ditches **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 76 centimeter (30 inch) diameter vitrified clay pipeline that extends from the valve pit east of 207-B Retention Basin to the head end of the 216-B-2-1 and 216-B-2-2 ditches. The site also includes a short section of 61 centimeter (24 inch) diameter clay pipe from the east retention basin outlet to the valve box.

Location: The pipeline is located northeast of the 207-B Retention Basin.

Release Description: UPR-200-E-32: On November 7, 1963, a coil leak developed in the 221-B Building 6-1 Tank (utilized for storing the cerium-rare earth fraction of the fission product stream) which resulted in gross contamination of the 207-B Water Retention Basin and the head end of this unit. After damming off the site approximately 705 meters (1,000 feet) downstream from the head end discharge pipe, the contaminated basin water was flushed into the unit. General dose rates were 500 mr/hr. Tumbleweed that had blown into the 216-B-2-1 ditch were found to be reading 50 R/hr. UPR-200-E-138: In March 1970, approximately 1000 curies of strontium-90 was released to the 216-B-2-2 ditch via the Chemical Sewer.

Related Sites/ Structures: The pipeline is associated with the 207-B Retention Basin and the 216-B-2-1 and 216-B-2 ditches.

This Site has the Following SubSites:

Code: 200-E-204-PL:1

Names: 200-E-204-PL:1; 24-Inch Diameter Pipe

Code: 200-E-204-PL:2
Names: 200-E-204-PL:2; 30-Inch Diameter Pipe

Code: 200-E-204-PL:1 **Classification:** Accepted
Names: 200-E-204-PL:1; 24-Inch Diameter Pipe **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: This subsite is a short section of 61 centimeter (24 inch) diameter vitrified clay pipe from the retention basin outlet to the valve box.

The SubSite is Part Of:

Code: 200-E-204-PL
Names: 200-E-204-PL; Pipeline to 216-B-2-1 and 216-B-2-2 Ditches

Code: 200-E-204-PL:2 **Classification:** Accepted
Names: 200-E-204-PL:2; 30-Inch Diameter Pipe **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: This subsite is the 76 centimeter (30 inch) diameter clay pipe from the valve box to the 216-B-2-1 and 216-B-2-2 ditches.

The SubSite is Part Of:

Code: 200-E-204-PL
Names: 200-E-204-PL; Pipeline to 216-B-2-1 and 216-B-2-2 Ditches

Code: 200-E-205-PL **Classification:** Accepted
Names: 200-E-205-PL; 216-B-2-3 Ditch Pipelines **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is two underground pipes that fed the 216-B-2-3 Ditch. One pipe is a 41 centimeter (16 inch) diameter carbon steel line from the 207-B Retention Basin to the head end of the 216-B-2-3 Ditch. The other is a 38 centimeter (15 inch) diameter vitrified clay line from the B Plant Process Sewer line (see sitecode 200-E-188-PL) to the 216-B-2-3 ditch.

Location: The pipelines are located east of the 207-B Retention Basin.

Related Sites/ Structures: The pipelines are associated with the 207-B Retention Basin, the B Plant Process Sewer and the 216-B-2-3 ditch.

This Site has the Following SubSites:

Code: 200-E-205-PL:1
Names: 200-E-205-PL:1; 16-Inch Diameter Carbon Steel Pipeline from 207-B to 216-B-2-3 Ditch

Code: 200-E-205-PL:2
Names: 200-E-205-PL:2; 15-Inch Diameter Vitrified Clay Pipe from the Process Sewer to the 216-B-2-3 Ditch

Code: 200-E-205-PL:1 **Classification:** Accepted

Names: 200-E-205-PL:1; 16-Inch Diameter Carbon Steel Pipeline from 207-B to 216-B-2-3 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: Carbon Steel pipe test

The SubSite is Part Of:

Code: 200-E-205-PL

Names: 200-E-205-PL; 216-B-2-3 Ditch Pipelines

Code: 200-E-205-PL:2 **Classification:** Accepted

Names: 200-E-205-PL:2; 15-Inch Diameter Vitrified Clay Pipe from the Process Sewer to the 216-B-2-3 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: VCP Pipe

The SubSite is Part Of:

Code: 200-E-205-PL

Names: 200-E-205-PL; 216-B-2-3 Ditch Pipelines

Code: 200-E-206-PL **Classification:** Accepted

Names: 200-E-206-PL; Double Pipes from 244-AR Vault to 241-AR-151 Diversion Box; Lines V716, V717 and V718/817 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is three underground, 7.6 centimeter (3 inch) diameter, stainless steel pipes buried in the same soil trench extending from the north wall of the 244-AR Vault building to the 241-AR-151 Diversion Box. The pipes are double contained within a larger diameter pipe.

Location: The diversion box is located north of the 244-AR Vault facility, east of the 291-AR ventilation system. The pipes extend eastward along the north wall of the 244-AR building.

Process Description: Two of the pipe originate in cell 3 of the 244-AR vault.

Related Sites/ Structures: The pipeline is associated with the 241-AR-151 Diversion Box and the 244-AR Vault facility.

Code: 200-E-207-PL **Classification:** Accepted

Names: 200-E-207-PL; Encased Transfer Line from 241-A-151 Diversion Box to 241-A-152 Diversion Box; Lines V004, V005, V006, V007 and V008 **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: Each of the five pipelines is a 9 centimeter (3.5 inch) diameter stainless steel line.

Location: The concrete encasement originates at the 241-A-151 Diversion Box, on the south side of the PUREX building. It runs eastward and turns north to connect with the 241-A-152 Diversion Box, located inside the 241-A Tank Farm. The line crosses under both Canton Ave. and 4th Street.

Release Description: UPR-200-E-67 states that a release occurred on May 7, 1984. An old, contaminated pipe encasement, located under 4th Street north of the 272-AW parking lot, was encountered during the excavation. Contamination levels ranged from 1 to 1.5 milirad per hour.

Related Sites/ Structures: The pipelines are associated with the 241-A-151 and 241-A-152 Diversion Boxes.

Code: 200-E-209-PL **Classification:** Accepted

Names: 200-E-209-PL; Pipeline from 272-BB to 200-E-25 Dry Well **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 5 centimeter (2 inch) diameter, carbon steel pipeline.

Location: The pipeline is located north of B Plant. It extends northward from the 272-BB building to the 200-E-25 french drain.

Related Sites/ Structures: The pipeline is associated with the 200-E-25 french drain.

Code: 200-E-213-PL **Classification:** Accepted

Names: 200-E-213-PL; Lines V200, V329, V330, V331, V332, V333, and V334; Transfer Lines from 221-B to 241-B-154 Diversion Box **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is seven underground stainless steel pipelines buried in the same soil trench. All of the lines are 9 centimeter (3.5 inch) diameter pipes.

Location: The transfer lines originate in various cells inside 221-B. They meet south of 221-B and run east to the 241-B-154 Diversion Box. They cross under Baltimore Ave.

Process Description: These transfer lines originate inside 221-B. They are not encased in concrete and do not connect to the 241-BX-154 Diversion Box. They were part of the original 1945 B Plant construction.

Related Sites/ Structures: The lines are associated with 221-B and 241-B-154 Diversion Box.

Code: 200-E-214-PL **Classification:** Accepted

Names: 200-E-214-PL; Pipeline from 291-B Sand Filter to French Drain; Pipeline to 200-E-55 French Drain **Reclassification:** None

Code: 200-E-217-PL:2
Names: 200-E-217-PL:2; Line V225 that Diverts from the Concrete Encasement

Code: 200-E-217-PL:1 **Classification:** Accepted
Names: 200-E-217-PL:1; Four Lines Encased in Concrete; Lines 9808, 9653, 9719, and V225 **Reclassification:** None
Type: Encased Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: Subsite one is the four lines, encased in concrete, that connects to 241-BX Tank Farm.

The SubSite is Part Of:

Code: 200-E-217-PL
Names: 200-E-217-PL; Encased Transfer Line from 241-ER-151 Diversion Box to 241-BX Tank Farm; Lines 9808, 9653, 9719 and V225

Code: 200-E-217-PL:2 **Classification:** Accepted
Names: 200-E-217-PL:2; Line V225 that Diverts from the Concrete Encasement **Reclassification:** None
Type: Encased Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: Subsite 2 is Line V225 that diverts from the concrete encasement. It extends from the encasement to 241-B Tank farm in a direct buried soil trench.

The SubSite is Part Of:

Code: 200-E-217-PL
Names: 200-E-217-PL; Encased Transfer Line from 241-ER-151 Diversion Box to 241-BX Tank Farm; Lines 9808, 9653, 9719 and V225

Code: 200-E-218-PL **Classification:** Accepted
Names: 200-E-218-PL; Lines V021; Transfer Lines Between 241-A-151 Diversion Box and 241-AW Tank Farm; V022; V023 **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is three, 7.6 centimeter (3 inch) diameter, stainless steel pipes buried in the same soil trench. Each pipe is double contained inside a 15 centimeter (6 inch) steel pipe.
Location: The lines are located on the south and northeast sides of the PUREX facility. The lines go east out of the 241-A-151 Diversion Box, along the south wall of 202-A. The lines turn north and continue to the west side of the 241-AW tank farm. The lines connect to the 241-AW-A and 241-AW-B valve pits, inside the 241-AW tank farm.

Related Sites/ Structures: The lines are associated with the 241-A-151 diversion box and the 241-AW A and B valve pits.

Code: 200-E-219-PL **Classification:** Accepted
Names: 200-E-219-PL; BY Crib Distribution Pipelines; **Reclassification:** None

Pipelines from 216-BY-201 Flush Tank to 216-B-43, 216-B-44, 216-B-45, 216-B-46, 216-B-47, 216-B-48, 216-B-49, and 216-B-50 Cribs

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 35.5 centimeter (14 inch) diameter, carbon steel distribution line that fed the eight BY cribs. A 5 centimeter (2 inch) diameter carbon steel by-pass drain line is located at 216-B-50 crib.

Location: The eight BY cribs are located north of the 216-BY tank farm. The pipes that fed the cribs originate on the north side of the 216-BY-201 siphon tank.

Process Description: The pipeline distributed uranium recovery waste from the 241-BY tank farm to the 241-BY cribs.

Related Sites/ Structures: The lines are associated with the 216-BY-201 Siphon Tank, 216-B-43, 216-B-44, 216-B-45, 216-B-46, 216-B-47, 216-B-48, 216-B-49 and 216-B-50 cribs.

This Site has the Following SubSites:

Code: 200-E-219-PL:1

Names: 200-E-219-PL:1; BY Cribs Distribution Line

Code: 200-E-219-PL:2

Names: 200-E-219-PL:2; 216-B-50 By-Pass Drain Line

Code: 200-E-219-PL:1

Classification: Discovery

Names: 200-E-219-PL:1; BY Cribs Distribution Line

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 1 is the 35.5 centimeter (14 inch) diameter carbon steel distribution line that fed the eight BY cribs.

The SubSite is Part Of:

Code: 200-E-219-PL

Names: 200-E-219-PL; BY Crib Distribution Pipelines; Pipelines from 216-BY-201 Flush Tank to 216-B-43, 216-B-44, 216-B-45, 216-B-46, 216-B-47, 216-B-48, 216-B-49, and 216-B-50 Cribs

Code: 200-E-219-PL:2

Classification: Discovery

Names: 200-E-219-PL:2; 216-B-50 By-Pass Drain Line

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 2 is the 5 centimeter (2 inch) diameter carbon steel by-pass drain line located at the 216-B-50 crib.

The SubSite is Part Of:

Code: 200-E-219-PL

Names: 200-E-219-PL; BY Crib Distribution Pipelines; Pipelines from 216-BY-201 Flush Tank to 216-B-43, 216-B-44, 216-B-45, 216-B-46, 216-B-47, 216-B-48, 216-B-49, and 216-B-50 Cribs

Code: 200-E-220-PL **Classification:** Accepted
Names: 200-E-220-PL; Pipeline from 241-BY Tank Farm to 216-BY-201 Flush Tank and Monitoring Pit **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 5 centimeter (2 inch) diameter, carbon steel pipeline and a concrete monitoring pit. The pipeline runs through the monitoring pit before connecting to the 216-BY-201 flush tank.

Location: The pipeline extends from inside 241-BY Tank Farm, north of 241-BY-101, to the 216-BY-201 Flush Tank. It crosses under the tank farm gravel access road diagonally and enters the flush tank at the southeast corner of the tank. The monitoring pit is located approximately 1.5 meters (5 feet) southeast of the flush tank.

Related Sites/ Structures: The pipeline is associated with the 241-BY tank farm and the 216-BY-201 flush tank.

This Site has the Following SubSites:

Code: 200-E-220-PL:1
Names: 200-E-220-PL:1; Flush Pit Drain Line
Code: 200-E-220-PL:2
Names: 200-E-220-PL:2; Concrete Monitoring Pit Structure

Code: 200-E-220-PL:1 **Classification:** Accepted
Names: 200-E-220-PL:1; Flush Pit Drain Line **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: Subsite 1 is the 2 inch drain line from the tank farm to the flush pit.

The SubSite is Part Of:

Code: 200-E-220-PL
Names: 200-E-220-PL; Pipeline from 241-BY Tank Farm to 216-BY-201 Flush Tank and Monitoring Pit

Code: 200-E-220-PL:2 **Classification:** Accepted
Names: 200-E-220-PL:2; Concrete Monitoring Pit Structure **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: Subsite 2 is the 1.8 meter (6 foot) diameter concrete monitoring pit that the pipeline runs through.

The SubSite is Part Of:

Code: 200-E-220-PL
Names: 200-E-220-PL; Pipeline from 241-BY Tank Farm to 216-BY-201 Flush Tank and Monitoring Pit

Code: 200-E-221-PL **Classification:** Accepted

Names: 200-E-221-PL; BC Crib Pipeline Drain Line; Pipeline to 216-B-51 French Drain **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 2.5 centimeter (1 inch) diameter, carbon steel drain line.

Location: The drain line from 200-E-114-PL to the 216-B-51 French Drain is located south of 12th Street and east of Baltimore Ave.

Process Description: The pipeline carried flush drainage from the BC pipeline (200-E-114-PL) to the 216-B-51 french drain.

Related Sites/ Structures: The pipeline is associated with the 200-E-114-PL pipeline to the BC cribs and the 216-B-51 french drain.

Code: 200-E-222-PL **Classification:** Accepted

Names: 200-E-222-PL; Distribution Pipelines from 216-BC-201 Siphon Tank to BC Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 35.5 centimeter (14 inch) diameter, carbon steel distribution line that fed the six BC cribs. A 5 centimeter (2 inch) diameter carbon steel by-pass drain line is located at 216-B-18 crib.

Location: The pipelines are located south of Route 4A. The lines extend from the 216-BC-201 Siphon Tank to the six BC cribs.

Related Sites/ Structures: The lines are associated with the 216-BC-201 Siphon Tank, 216-B-14, 216-B-15, 216-B-16, 216-B-17, 216-B-18, 216-B-19 cribs.

This Site has the Following SubSites:

Code: 200-E-222-PL:1

Names: 200-E-222-PL:1; BC Cribs Distribution Line

Code: 200-E-222-PL:2

Names: 200-E-222-PL:2; 216-B-18 By Pass Drain Line

Code: 200-E-222-PL:1 **Classification:** Accepted

Names: 200-E-222-PL:1; BC Cribs Distribution Line **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: Subsite 1 is the 35.5 centimeter (14 inch) diameter carbon steel distribution line that fed the six BC cribs.

The SubSite is Part Of:

Code: 200-E-222-PL

Names: 200-E-222-PL; Distribution Pipelines from 216-BC-201 Siphon Tank to BC Cribs

Code: 200-E-222-PL:2 **Classification:** Accepted

Names: 200-E-222-PL:2; 216-B-18 By Pass Drain Line **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: Subsite 2 is the 5 centimeter (2 inch) diameter carbon steel by-pass drain line located at the 216-B-18 crib.

The SubSite is Part Of:

Code: 200-E-222-PL

Names: 200-E-222-PL; Distribution Pipelines from 216-BC-201 Siphon Tank to BC Cribs

Code: 200-E-223 **Classification:** Accepted

Names: 200-E-223; BC Pipeline Valve Pit; 200-E-114-PL **Reclassification:** None
Valve Pit

Type: Valve Pit **Start Date:**

Status: Inactive **End Date:**

Description: The concrete valve pit. In 2001 it was surrounded with posts and chain and posted with radiological warning signs. In 2010, it was sealed and surface stabilized. It was reposted with Underground Radioactive Material Area signs.

Location: The valve pit is located north of 7th Street and east of the 216-B-59 basin.

Process Description: The valve pit regulated flow of the Uranium Recovery Process waste being transferred to the BC Cribs and Trenches. The valve pit contains six iron gate valves. The entire scavenging mission necessitated the construction of the transfer system using pipelines 2805-E1, 2805-E2, 2805-E3 and 2805-E4 (sitecode 200-E-114-PL). The entire system can be traced on the series of H-2-2900 thru 2909. The valve box allowed waste to move north to BY or south to BC cribs.

Related Sites/ Structures: The valve pit is associated with the 200-E-114-PL pipeline.

Code: 200-E-224-PL **Classification:** Accepted

Names: 200-E-224-PL; 241-A-151 Diversion Box Drain **Reclassification:** None
Line to 241-A-302A Catch Tank; Line V027

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 9 centimeter (3.5 inch) diameter, stainless steel drain line that is encased in concrete.

Location: The 241-A-151 diversion box and 241-A-302A catch tank are located on the south side of the PUREX facility. The drain line extends between the two structures.

Related Sites/ Structures: The drain line is associated with the 241-A-151 Diversion Box and the 241-A-302A catch tank.

Code: 200-E-225-PL **Classification:** Accepted

Names: 200-E-225-PL; Line V720; Transfer Line from **Reclassification:** None
241-AR-151 Diversion Box to 241-AY-102 Tank

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The waste site is three underground drain lines that connect the 241-ER-151 Diversion Box to the 241-ER-311 and 241-ER-311A Catch Tanks. Line V224 is a 7.6 centimeter (3 inch) diameter stainless steel line. Lines V226 and V226-1 are 10 centimeter (4 inch) diameter stainless steel lines.

Location: The pipelines are located southwest of B Plant, west of Atlanta Ave., inside the 241-ER-151 Diversion Box chain link fence.

Related Sites/ Structures: The lines are associated with the 241-ER-151 Diversion Box, 241-ER-311 and 241-ER-311A Catch Tanks.

This Site has the Following SubSites:

Code: 200-E-228-PL:1

Names: 200-E-228-PL:1; Line V224

Code: 200-E-228-PL:2

Names: 200-E-228-PL:2; Line V226

Code: 200-E-228-PL:3

Names: 200-E-228-PL:3; Line V226-1

Code: 200-E-228-PL:1

Classification: Accepted

Names: 200-E-228-PL:1; Line V224

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: Subsite 1 is line V224 that extends from the west end of the 241-ER-151 diversion box to the west end of the 241-ER-311 catch tank. The 7.6 centimeter (3inch) line is reduced to a 5 centimeter (2 inch) diameter line where it was extended from the original catch tank to the replacement catch tank.

The SubSite is Part Of:

Code: 200-E-228-PL

Names: 200-E-228-PL; Drain Lines from 241-ER-151 Diversion Box to 241-ER-311 and 241-ER-311A Catch Tanks; Lines V224, V226 and V226-1

Code: 200-E-228-PL:2

Classification: Accepted

Names: 200-E-228-PL:2; Line V226

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: Subsite 2 is line V226 that extends from the 241-ER-151 Diversion Box to a point east of the center of the 241-ER-311A and 241-ER-311 Catch Tanks.

The SubSite is Part Of:

Code: 200-E-228-PL

Names: 200-E-228-PL; Drain Lines from 241-ER-151 Diversion Box to 241-ER-311 and 241-ER-311A Catch Tanks; Lines V224, V226 and V226-1

Code: 200-E-228-PL:3 **Classification:** Accepted
Names: 200-E-228-PL:3; Line V226-1 **Reclassification:** None
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: Subsite 3 is line V226-1 that extends from the 241-ER-151 Diversion Box to a point west of the center of the 241-ER-311A and 241-ER-311 Catch Tanks.

The SubSite is Part Of:

Code: 200-E-228-PL
Names: 200-E-228-PL; Drain Lines from 241-ER-151 Diversion Box to 241-ER-311 and 241-ER-311A Catch Tanks; Lines V224, V226 and V226-1

Code: 200-E-229-PL **Classification:** Accepted
Names: 200-E-229-PL; Line SN-650; Transfer Line **Reclassification:** None
Between tank 241-AP-102 and 241-A-B Valve Pit
Type: Direct Buried Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel line that is double encased within a 15 centimeter (6 inch) diameter pipe.
Location: The line extend north out of the 241-AP Tank Farm. It crosses under 4th Street and travels east on the north side of 4th Street. The line turns north on the west side of the 242-A Evaporator. The line terminates at the 241-A-B Valve Pit, inside the 241-A Tank Farm.
Related Sites/ Structures: The pipeline is associated with the 241-AP-102 tank and the 241-A-B valve pit.

Code: 200-E-230-PL **Classification:** Accepted
Names: 200-E-230-PL; Pipeline from 292-B to 216-B-4 **Reclassification:** None
Reverse Well
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 15 centimeter (6 inch) diameter, vitrified clay pipe that fed the 216-B-4 Reverse well.
Location: The pipeline is located southeast of B Plant, extending north from the 292-B building.
Process Description: The pipeline transferred floor drainage from 292-B to 216-B-4.
Related Sites/ Structures: The pipeline is associated with the 292-B building and the 216-B-4 well.

Code: 200-E-231-PL **Classification:** Accepted
Names: 200-E-231-PL; 216-A-45 Crib Pipeline **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: the 216-A-45 crib.

Location: The pipeline is located south of the PUREX security fence and south of the 216-A-10 crib.

Process Description: The 216-A-45 crib was built to replace the 216-A-10 crib.

Related Sites/ Structures: The pipeline is associated with the 216-A-45 crib and the 216-A-10 pipeline (200-E-192-PL).

Code: 200-E-232-PL **Classification:** Accepted

Names: 200-E-232-PL; Pipeline from 207-A Basins to 216-A-30 and 216-A-37-1 Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 10 centimeter (4 inch) diameter, cast iron pipeline that fed the 216-A-37-1 crib through a distribution box. A 20 centimeter (8 inch) cement pipe extends from the 216-A-37-1 crib distribution box to the 216-A-30 crib distribution box. (see subsite 2).

Location: The pipeline is located northeast of the PUREX facility. It extends from the 207-A Basins to the 216-A-37-1 distribution box.

Related Sites/ Structures: The pipeline is associated with the 216-A-37-1 and 216-A-30 crib distribution boxes.

This Site has the Following SubSites:

Code: 200-E-232-PL:1

Names: 200-E-232-PL:1; Cast Iron Pipeline from 207-A to 216-A-37-1 Distribution Box

Code: 200-E-232-PL:2

Names: 200-E-232-PL:2; Pipeline from 216-A-37-1 Distribution Box to 216-A-30 Crib

Code: 200-E-232-PL:1 **Classification:** Accepted

Names: 200-E-232-PL:1; Cast Iron Pipeline from 207-A to 216-A-37-1 Distribution Box **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-232-PL

Names: 200-E-232-PL; Pipeline from 207-A Basins to 216-A-30 and 216-A-37-1 Cribs

Code: 200-E-232-PL:2 **Classification:** Accepted

Names: 200-E-232-PL:2; Pipeline from 216-A-37-1 Distribution Box to 216-A-30 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: This is a 20 centimeter (8 inch) diameter cement pipe.

The SubSite is Part Of:

the same soil trench, terminating at the 207-A pump pit. One extra line (505) has been stubbed.

Process Description: Line 300 (alias DR-300) is the effluent return line. It connects to tank 241-A-350, inside the 241-A Tank Farm.

The SubSite is Part Of:

Code: 200-E-234-PL

Names: 200-E-234-PL; Lines 300, 501, 505, and 557; Pipelines from 242-A Evaporator Building to the 207-A Basins

Code: 200-E-234-PL:2

Classification: Accepted

Names: 200-E-234-PL:2; Line 505 (Stub)

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The subsite is a 10 centimeter (4 inch) diameter carbon steel spare pipeline. It is stubbed off west of the 207-A Retention Basins at the pump pit.

The SubSite is Part Of:

Code: 200-E-234-PL

Names: 200-E-234-PL; Lines 300, 501, 505, and 557; Pipelines from 242-A Evaporator Building to the 207-A Basins

Code: 200-E-237-PL

Classification: Accepted (Proposed)

Names: 200-E-237-PL; 2904-E-24; Line 2904-E-1; Pipeline to 200 East Powerhouse Ditch and Pipeline from Powerhouse Ditch to 216-B-3 Ditches

Reclassification: None

Type: Process Sewer

Start Date:

Status: Active

End Date:

Description: The waste site is the 106 centimeter (42 inch) diameter reinforced concrete pipe that feeds the powerhouse ditch and the 76 centimeter (30 inch) diameter corrugated metal pipe that drained the powerhouse ditch to the B Pond system. The piping was later reused to feed the TEDF system. The mapped detail of this piping system includes the feeder pipes from the 284-E Powerhouse and the 282-E water reservoir.

Location: The pipeline is located north of 4th Street and south of 7th Street, east of Baltimore Ave. in 200 East Area.

Process Description: Drainage from the 282-E reservoir and the 284-E Powerhouse has been sent to the 200-E Powerhouse Ditch via the reinforced concrete portion of this pipeline. The powerhouse ditch is unlined and allows the effluent to percolate into the soil of the ditch. The ditch drainage was conveyed to the 216-B-3 ditches and ponds via the corrugated metal pipe at the distal of the powerhouse ditch. A small diameter pipeline from 241-C tank farm joined the corrugated metal pipe (see 200-E-155-PL). 200-E-155-PL has now been isolated at the 241-C-03A pump pit. Later the effluent was diverted to the TEDF system by reusing the existing powerhouse ditch and piping. In 2010, discharge from 282E, 282EC and 283E continued to use this pipeline for relatively small amounts of discharge.

Related Sites/ Structures: The pipeline is associated with the 200-E Power House ditch, 200-E-155-PL and the TEDF

Code: 200-E-239-PL **Classification:** Accepted
Names: 200-E-239-PL; Pipeline from 216-A-5 Sample Pit #4 to 216-A-5 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 20 centimeter (8 inch) diameter, stainless steel pipeline that fed the 216-A-5 crib.
Location: The pipeline to the 216-A-5 crib is located south of the PUREX facility. It extends south from the 216-A-5 Sample Pit #4.
Related Sites/ Structures: The pipeline is associated with Sample Pit #4 and the 216-A-5 crib.

Code: 200-E-240-PL **Classification:** Accepted
Names: 200-E-240-PL; Pipeline from Valve Pit West of Sample Pit 4 to the 216-A-38-1 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 20 centimeter (8 inch) diameter, stainless steel pipeline that fed the 216-A-38-1 crib.
Location: The pipeline to the 216-A-38-1 crib is located south of the PUREX facility. It extends west and southwest of the 216-A-5 Sample Pit #4.
Related Sites/ Structures: The pipeline is associated with the 216-A-38-1 crib.

Code: 200-E-241-PL **Classification:** Accepted
Names: 200-E-241-PL; Lines 7717 and 7718; Pipeline from 200-E-58 Neutralization Tank to the 216-A-5 Sample Pit #4 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is 20 centimeter (8 inch) diameter stainless steel pipelines that carried waste from PUREX to the neutralization tank (sitecode 200-E-58) and neutralized waste to the 216-A-5 Sample Pit. A by pass line around the sampler was added later (see Subsite 2).
Location: The pipeline is located south of PUREX and north of the 216-A-5 Crib.
Related Sites/ Structures: The pipeline is associated with the 200-E-58 Neutralization Tank, and Sample Pit #4.

This Site has the Following SubSites:

Code: 200-E-241-PL:1
Names: 200-E-241-PL:1; Pipeline Between 200-E-58 (Neutralization Tank) and Sample Pit #4
Code: 200-E-241-PL:2
Names: 200-E-241-PL:2; Bypass Piping Around Sampler

Code: 200-E-241-PL:3
Names: 200-E-241-PL:3; Lines 7717 and 7718 from 202-A to 200-E-58 (Neutralization Tank)

Code: 200-E-241-PL:1
Classification: Accepted
Names: 200-E-241-PL:1; Pipeline Between 200-E-58 (Neutralization Tank) and Sample Pit #4
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:

The SubSite is Part Of:

Code: 200-E-241-PL
Names: 200-E-241-PL; Lines 7717 and 7718; Pipeline from 200-E-58 Neutralization Tank to the 216-A-5 Sample Pit #4

Code: 200-E-241-PL:2
Classification: Accepted
Names: 200-E-241-PL:2; Bypass Piping Around Sampler
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:

The SubSite is Part Of:

Code: 200-E-241-PL
Names: 200-E-241-PL; Lines 7717 and 7718; Pipeline from 200-E-58 Neutralization Tank to the 216-A-5 Sample Pit #4

Code: 200-E-241-PL:3
Classification: Accepted
Names: 200-E-241-PL:3; Lines 7717 and 7718 from 202-A to 200-E-58 (Neutralization Tank)
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:

Description: 7717 and 7718 are 8 inch diameter stainless steel lines that fed the neutralization tank.

The SubSite is Part Of:

Code: 200-E-241-PL
Names: 200-E-241-PL; Lines 7717 and 7718; Pipeline from 200-E-58 Neutralization Tank to the 216-A-5 Sample Pit #4

Code: 200-E-242-PL
Classification: Accepted
Names: 200-E-242-PL; Pipeline from 216-A-5 Sample Pit #4 to 216-A-15 French Drain
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:

Description: The waste site is an underground, 10 centimeter (4 inch) diameter, stainless steel pipeline that fed the 216-A-15 French Drain.

Location: The pipeline is located south of PUREX and east of the 216-A-5 Sample Pit #4.

Related Sites/ The pipeline is associated with Sample Pit #4 and the 216-A-15 French Drain.

Structures:

Code: 200-E-243-PL **Classification:** Accepted
Names: 200-E-243-PL; Pipeline to the 216-B-13 French Drain **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline that fed the 216-B-13 french drain.
Location: The pipeline is located south of the 221-B facility and north of the 291-B stack.
Related Sites/ Structures: The pipeline is associated with the 291-B stack and the 216-B-13 french drain.

Code: 200-E-244-PL **Classification:** Accepted
Names: 200-E-244-PL; Pipeline from 201-C Valve Pit to 241-CX-70 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 5 centimeter diameter (2 inch) stainless steel pipeline that fed the 241-CX-70 tank. A portion of the pipeline, near the 201-C building, is inside a 46 centimeter (18 inch) diameter corrugated pipe encasement. The pipeline to the 241-CX-72 tank (sitecode 200-E-246-PL, is buried along side of the pipeline to 241-CX-70 tank.
Location: The pipeline is located southeast of the 201-C building. It extends to the 241-CX-70 tank.
Related Sites/ Structures: The pipeline is associated with 200-E-41 Stabilized Area, 200-E-246-PL, the Hot Semiworks Valve Pit (HSVP) and the 241-CX-70 tank.

Code: 200-E-245-PL **Classification:** Accepted
Names: 200-E-245-PL; Pipeline from 201-C Hot Shop to 241-CX-71 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 5 centimeter (2 inch) diameter stainless steel pipeline that fed the 241-CX-71 tank.
Location: The pipeline is located south of the 201-C building.
Related Sites/ Structures: The pipeline is associated with the 201-C facility and the 241-CX-71 tank.

Code: 200-E-246-PL **Classification:** Accepted
Names: 200-E-246-PL; Pipeline from 201-C Valve Pit to 241-CX-72 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**

Status: Inactive**End Date:****Description:** The waste site is an underground, 5 centimeter diameter (2 inch) stainless steel pipeline that fed the 241-CX-72 tank. A portion of the pipeline, near the 201-C building, is inside a 46 centimeter (18 inch) diameter corrugated pipe encasement. The pipeline to the 241-CX-70 tank (sitecode 200-E-244-PL, is buried along side of the pipeline to 241-CX-72 tank.**Location:** The pipeline is located southeast of the 201-C building. It extends to the 241-CX-72 tank.**Related Sites/ Structures:** The pipeline is associated with 200-E-41 Stabilized Area, 200-E-244-PL, the Hot Semiworks Valve Pit (HSVP) and the 241-CX-72 tank.

Code: 200-E-247-PL**Classification:** Accepted**Names:** 200-E-247-PL; Pipelines to the 209-E-WS-2 French Drain**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****Description:** The waste site is two underground pipelines from the 209-E facility that fed the 209-E-WS-2 french drain. One line is constructed of 2.5 centimeter (1 inch) diameter carbon steel. The other is constructed of 5 centimeter (2 inch) diameter stainless steel.**Location:** The pipelines are located on the east side of the 209-E building.**Related Sites/ Structures:** The pipelines are associated with the 209-E laboratory building and the 209-E-WS-2 french drain.**This Site has the Following SubSites:****Code:** 200-E-247-PL:1**Names:** 200-E-247-PL:1; 1-Inch Carbon Steel Pipeline**Code:** 200-E-247-PL:2**Names:** 200-E-247-PL:2; 2-Inch Stainless Steel Pipeline

Code: 200-E-247-PL:1**Classification:** Accepted**Names:** 200-E-247-PL:1; 1-Inch Carbon Steel Pipeline**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****The SubSite is Part Of:****Code:** 200-E-247-PL**Names:** 200-E-247-PL; Pipelines to the 209-E-WS-2 French Drain

Code: 200-E-247-PL:2**Classification:** Accepted**Names:** 200-E-247-PL:2; 2-Inch Stainless Steel Pipeline**Reclassification:** None**Type:** Radioactive Process Sewer**Start Date:****Status:** Inactive**End Date:****The SubSite is Part Of:****Code:** 200-E-247-PL**Names:** 200-E-247-PL; Pipelines to the 209-E-WS-2 French Drain

Code: 200-E-248-PL **Classification:** Accepted
Names: 200-E-248-PL; Pipelines to the 209-E-WS-3 Valve Pit **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is two underground, 5 centimeter (2 inch) diameter stainless steel pipelines connecting the laboratory building to the valve pit structure.
Location: The pipelines extend south from the 209-E building to the 209-E-WS-3 valve pit.
Related Sites/ Structures: The pipelines are associated with the 209-E laboratory building and the 209-E-WS-3 valve pit.

This Site has the Following SubSites:

Code: 200-E-248-PL:1
Names: 200-E-248-PL:1; Western Line from 209-E to Valve Pit
Code: 200-E-248-PL:2
Names: 200-E-248-PL:2; Eastern Line from 209-E to Valve Pit

Code: 200-E-248-PL:1 **Classification:** Accepted
Names: 200-E-248-PL:1; Western Line from 209-E to Valve Pit **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-248-PL
Names: 200-E-248-PL; Pipelines to the 209-E-WS-3 Valve Pit

Code: 200-E-248-PL:2 **Classification:** Accepted
Names: 200-E-248-PL:2; Eastern Line from 209-E to Valve Pit **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-248-PL
Names: 200-E-248-PL; Pipelines to the 209-E-WS-3 Valve Pit

Code: 200-E-249-PL **Classification:** Accepted
Names: 200-E-249-PL; Pipelines to 200-E-4 French Drain **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 3.8 centimeter (1.5 inch) diameter pipeline that extends from the north side of 209-E to the 200-E-4 dry well. A drain line from a valve box, containing steam condensate and fire water lines, also connects to the 200-E-4 French Drain (subsite 2).

Location: The pipelines are located south of 7th Street and north of the 209-E building.
Process Description: The waste carried by this pipeline was steam condensate from the steam trap in the valve pit plus steam condensate from 209-E the equipment room.

Related Sites/ Structures: The pipeline is associated with the 209-E Criticality Lab and the 200-E-4 french drain.

This Site has the Following SubSites:

Code: 200-E-249-PL:1
Names: 200-E-249-PL:1; Drain Line from 209-E to 200-E-4
Code: 200-E-249-PL:2
Names: 200-E-249-PL:2; Drain Line from Valve Box to 200-E-4 French Drain

Code: 200-E-249-PL:1 **Classification:** Accepted
Names: 200-E-249-PL:1; Drain Line from 209-E to 200-E-4 **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The drain line from 209-E is a 3.8 centimeter (1.5 inch) diameter carbon steel line.

The SubSite is Part Of:

Code: 200-E-249-PL
Names: 200-E-249-PL; Pipelines to 200-E-4 French Drain

Code: 200-E-249-PL:2 **Classification:** Accepted
Names: 200-E-249-PL:2; Drain Line from Valve Box to 200-E-4 French Drain **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The drain line from the valve box is a 1.9 centimeter (0.75 inch) diameter carbon steel line.

The SubSite is Part Of:

Code: 200-E-249-PL
Names: 200-E-249-PL; Pipelines to 200-E-4 French Drain

Code: 200-E-250-PL **Classification:** Accepted
Names: 200-E-250-PL; Pipeline from 2704-C to 2704-C-WS-1 Quench Tank **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 2.5 centimeter (1 inch) diameter carbon steel line that extended from the south side of the 2704-C building to the 2704-C quench tank.

Location: The pipeline is located south of 7th Street, within the 200-E-41 Stabilized Area.

Related Sites/ Structures: The pipeline is associated with the demolished 2704-C building and the 2704-C-WS-1 quench tank.

Structures: tank.

Code: 200-E-251-PL **Classification:** Accepted
Names: 200-E-251-PL; Pipeline from 291-C Stack to 216-C-2 Reverse Well **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter carbon steel pipeline that connected the 291-C stack to the 216-C-2 reverse well.
Location: The pipeline is located south of 7th Street, in the Hot Semiworks Stabilized Area (see 200-E-41).
Related Sites/Structures: The pipeline is associated with the 291-C stack, the 216-C-2 reverse well and the 200-E-41 stabilized area.

Code: 200-E-252-PL **Classification:** Accepted
Names: 200-E-252-PL; Pipeline from 291-C Air Filter Building to 216-C-2 Reverse Well **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 5 centimeter (2 inch) diameter cast iron pipeline from the 291-C Air Filter building to the 216-C-2 reverse well. Part of this line lies beneath the 200-E-251-PL pipeline.
Location: The pipeline is located south of 7th Street in the 200-E-41 Stabilized Area.
Related Sites/Structures: The pipeline is associated with the 291-C filter building, the 216-C-2 stack and the 200-E-41 Stabilized Area.

Code: 200-E-253-PL **Classification:** Accepted
Names: 200-E-253-PL; Pipeline from 202-A to 216-A-36A and 216-A-36B Cribs **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 15 centimeter (6 inch) diameter stainless steel pipeline that connected the ASD Valve Pit and 295-A Sample Pit with the 216-A-36A and 216-A-36B cribs. When the 216-A-36A crib was extended to create the 216-A-36B crib, the distribution pipe was lengthened by inserting a 12 centimeter (5 inch) diameter pipe through the original 15 centimeter (6 inch) diameter crib pipe.
Location: The pipeline is located south of the PUREX facility.
Release Description: UPR-200-E-39 is described as a release that occurred on February 6, 1968. Pressurized ammonia scrubber liquid was found to be spewing from the vent filter at the 216-A-36B Crib Sampling Shack (295-A). The contaminated ammonia scrubber water erupted through the vent and filter and onto the ground around the outside of the sample shack. Approximately 60.4 square meters (650 square feet) of ground and blacktop was affected. Contamination levels ranged from 20 to 450 millirad/hour. The cause was determined to be that the export pressure

was too high, resulting in back-pressure through the vent.

Process Description: The 216-A-36A portion of the crib was terminated in March 1966. The existing pipeline was extended to the 216-A-36B portion of the crib by inserting a 12 centimeter (5 inch) diameter pipe inside the existing 15 centimeter (6 inch) diameter distribution pipe. A 29 meter (95 foot) concrete dam was placed between the 216-A-36A and 216-A-36B crib sections.

Related Sites/ Structures: The pipeline is associated with the 295-A Sample Building and the 216-A-36A and 216-A-36B cribs.

Code: 200-E-254-PL **Classification:** Accepted
Names: 200-E-254-PL; Pipeline from 209-E to 216-C-9 Pond **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter pipeline that fed the 216-C-9 Pond. Part of the line is constructed of vitrified clay and part is cast iron.
Location: The pipeline runs north and south, between the 209-E building and the 216-C-9 Pond site. The pipeline crosses under 7th Street.
Related Sites/ Structures: The pipeline is associated with the 209-E Criticality Lab facility and the 216-C-9 Pond.

Code: 200-E-255-PL **Classification:** Accepted
Names: 200-E-255-PL; Pipeline Connecting 216-C-9 Pond to Pipeline 200-E-169-PL **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 15 centimeter (6 inch) diameter vitrified clay pipe that fed the 216-C-9 Pond.
Location: The pipeline is located north of the 276-C building. It runs north and south and runs under 7th Street.
Related Sites/ Structures: This line is associated with the 216-C-9 Pond and the 200-E-169-PL pipeline.

Code: 200-E-256-PL **Classification:** Accepted
Names: 200-E-256-PL; Pipelines from 201-C (South Side) to 216-C-9 Pond **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site majority of the waste site is an underground, 15 centimeter (6 inch) diameter vitrified clay pipe from the demolished 201-C building to the 216-C-9 Pond. Two 10 centimeter (4 inch) diameter saran lined steel pipes extend from the south side of 201-C and connect to the 15 centimeter VCP line. A drain line from the 241-CX-71 vault ties into this line

with a "Y" connection.

Location: The pipeline(s) extend south from the demolished 201-C building. The line extends east and north to discharge into the 216-C-9 Pond. The pipeline crosses under 7th Street.

Related Sites/ Structures: The pipeline is associated with 201-C and 216-C-9 Pond.

Code: 200-E-257-PL **Classification:** Accepted

Names: 200-E-257-PL; Pipeline from 201-C (East Side) to 216-C-9 Pond **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline that fed the 216-C-9 Pond.

Location: The pipeline is located northeast of the demolished 201-C building. It runs north and south and runs under 7th Street.

Related Sites/ Structures: The pipeline is associated with 201-C and 216-C-9 Pond.

Code: 200-E-258-PL **Classification:** Accepted

Names: 200-E-258-PL; 216-C-9 Pond Lobe Distribution Piping **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground carbon steel pipeline that diverted effluent to the various sections of the 216-C-9 Pond. The majority of the piping system is constructed of 15 centimeter (6 inch) diameter carbon steel pipe.

Location: The pipeline runs east and west along the north side of 7th Street. Four distribution lines extend to various lobes of the 216-C-9 Pond.

Process Description: The 216-C-9 Pond (old 221-C facility excavation) was divided into sections with dikes. Piping was arranged to provide three discharge points, one to each section.

Related Sites/ Structures: The pipelines are associated with the 216-C-9 Pond.

Code: 200-E-259-PL **Classification:** Accepted

Names: 200-E-259-PL; Pipeline from 291-C Fan House to 216-C-9 Pond **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 5 centimeter (2 inch) diameter carbon steel pipeline that fed the 216-C-9 Pond.

Location: The pipeline is located northeast of the demolished 201-C building. It extended north from the

demolished 291-C Fan House to the 216-C-9 Pond. The pipeline crosses under 7th Street.

Related Sites/ Structures: The pipeline is associated with the 291-C stack operation and the 216-C-9 Pond.

Code: 200-E-260-PL **Classification:** Accepted
Names: 200-E-260-PL; Line 8824A; Steam Condensate By-Pass Line from PUREX to 216-A-30 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 20 centimeter (8 inch) diameter carbon steel pipeline from PUREX to the 216-A-30 crib.
Location: The pipeline extends east from the PUREX facility, beyond the 200 East Area fence and terminates at the head end of the 216-A-30 crib.
Process Description: The pipeline was used as a steam condensate bypass line.

Related Sites/ Structures: The pipeline is associated with PUREX and the 216-A-30 crib.

Code: 200-E-261-PL **Classification:** Accepted
Names: 200-E-261-PL; Effluent Recycle Line from 216-A-42 Basin to PUREX **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter cast iron pipeline. The pipeline returned contaminated effluent from the 216-A-42 Basin back to the PUREX facility.
Location: The pipeline extends from the 216-A-42 basin, located south of 241-AP Tank Farm, to the 202-A (PUREX) facility.

Related Sites/ Structures: The pipeline is associated with the 216-A-42 Basin and the 216-A-42A Pump Station.

Code: 200-E-262-PL **Classification:** Accepted
Names: 200-E-262-PL; 216-A-42A Pump Station; 216-A-42B Valve Box and 216-A-42C Diversion Box; Pipelines Associated with 216-A-42 Basin **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter cast iron pipeline that transferred effluent out of the 216-A-42 Retention Basin.
Location: The 216-A-42 Basin is located south of the 241-AP Tank Farm. The pipelines and 216-A-42A Pump Station are on the west side of the 216-A-42 Basin.
Process Description: The 216-A-42 Retention Basin was built to hold cooling water or steam condensate that was contaminated above standard release limits and prevent its disposal to the Gable and B Pond

systems. After the retained effluent contents were analyzed, a built-in recovery system provided the capability of pumping solutions back into the PUREX facility for reprocessing (see sitecode 200-E-261-PL) or to cribs for disposal.

Related Sites/ Structures: The pipelines are associated with the 216-A-42 retention basin, the 216-A-42A pump station, the 216-A-42B valve box and the 216-A-42C diverter station.

Code: 200-E-263-PL **Classification:** Accepted
Names: 200-E-263-PL; 216-A-42 Basin Pipeline to 216-A-42C Diversion Box **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 20 centimeter (8 inch) diameter cast iron pipeline that connected the 216-A-42 Retention Basin to the 216-A-42C Diversion Box.
Location: The pipeline is located southeast of the 241-AP Tank Farm. The pipeline extends from the south end of the 216-A-42 Basin to the 216-A-42C Diversion Box.
Related Sites/ Structures: The pipeline is associated with the 216-A-42 basin, the 216-A-42C diversion box and the 200-E-113-PL pipeline.

Code: 200-E-264-PL **Classification:** Accepted
Names: 200-E-264-PL; Pipeline from 242-B Evaporator Building to 207-B Retention Basin **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter cast iron pipeline that connected the 242-B Evaporator building to the 207-B Retention Basin.
Location: The pipeline is located east of Baltimore Ave. It extends south from the 242-B Evaporator building to the 207-B retention basin.
Release Description: UPR-200-E-79 describes a release that occurred in June 1953. Five leaks were discovered in the waste line that runs from 242-B to 207-B. Contamination levels up to 2,500 counts per minute were measured at the points of emission of water from the ground.
Related Sites/ Structures: The pipeline is associated with 242-B Evaporator, 207-B Retention Basin and UPR-200-E-79.

Code: 200-E-265-PL **Classification:** Accepted
Names: 200-E-265-PL; 241-BY and 241-BX Tank Farm Cooling Water Pipeline to 207-B Retention Basin **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter carbon steel pipeline that transferred In-Tank Solidification process cooling water to the 207-B Retention Basin. A new pipeline segment was added that by passed the retention basin and connected to the B Ditches.
Location: Portions of the pipeline are located inside the 241-B, BY and BX tank farms. It crosses under

Location: Baltimore Ave. One segment of the pipeline connects with the west side of the 207-B Retention Basin and one segment connects with the east side of the 207-B Retention Basin.

Process Description: The pipeline carried cooling water from the In-Tank Solidification (ITS) process to the 207-B retention basin.

Related Sites/ Structures: The pipeline is associated with the ITS process in 241-BY Tank Farm, the In Tank Solidification Systems (ITS 1 and ITS 2) and the 207-B Retention Basin.

This Site has the Following SubSites:

Code: 200-E-265-PL:1

Names: 200-E-265-PL:1; Original Pipeline from 241-BY Tank Farm to the West Side of 207-B Retention Basin

Code: 200-E-265-PL:2

Names: 200-E-265-PL:2; Relocated Section of 4-Inch Pipe Inside a 6-Inch Pipe Created to Bypass a Broken Section of Pipeline

Code: 200-E-265-PL:3

Names: 200-E-265-PL:3; 4-Inch Retention Basin Bypass Line (to B Ditches)

Code: 200-E-265-PL:1

Classification: Accepted

Names: 200-E-265-PL:1; Original Pipeline from 241-BY Tank Farm to the West Side of 207-B Retention Basin

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-265-PL

Names: 200-E-265-PL; 241-BY and 241-BX Tank Farm Cooling Water Pipeline to 207-B Retention Basin

Code: 200-E-265-PL:2

Classification: Accepted

Names: 200-E-265-PL:2; Relocated Section of 4-Inch Pipe Inside a 6-Inch Pipe Created to Bypass a Broken Section of Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-265-PL

Names: 200-E-265-PL; 241-BY and 241-BX Tank Farm Cooling Water Pipeline to 207-B Retention Basin

Code: 200-E-265-PL:3

Classification: Accepted

Names: 200-E-265-PL:3; 4-Inch Retention Basin Bypass Line (to B Ditches)

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-265-PL
Names: 200-E-265-PL; 241-BY and 241-BX Tank Farm Cooling Water Pipeline to 207-B Retention Basin

Code: 200-E-266-PL **Classification:** Accepted
Names: 200-E-266-PL; Pipeline from PUREX Trap Pit #1 to 216-A-11 French Drain **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter carbon steel pipeline that connected the PUREX Trap Pit #1 to 216-A-11 French Drain.
Location: The pipeline extends south from PUREX Trap Pit #1. It is near the southeast corner of the 202-A building.
Related Sites/ Structures: The pipeline is associated with 216-A-11 french drain.

Code: 200-E-267-PL **Classification:** Accepted
Names: 200-E-267-PL; Pipeline from PUREX Trap Pit #3 to 216-A-12 French Drain **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 10 centimeter (4 inch) diameter carbon steel pipeline that connected the PUREX Trap Pit #3 to 216-A-12 French Drain.
Location: The pipeline extends south from Trap Pit #3. It is located near the center of the south side of the 202-A building.
Related Sites/ Structures: The pipeline is associated with 216-A-12 french drain.

Code: 200-E-268-PL **Classification:** Accepted
Names: 200-E-268-PL; Line T073; Pipeline from PUREX Vacuum Cleaner Filter Box to 216-A-14 French Drain **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 6 centimeter (1.5 inch) diameter carbon steel pipeline that connected the PUREX Vacuum Cleaning Filter Box to 216-A-14 French Drain.
Location: The pipeline is located south of 202-A and northwest of 291-AE.
Related Sites/ Structures: The pipeline is associated with 216-A-14 french drain.

Code: 200-E-269-PL **Classification:** Accepted
Names: 200-E-269-PL; Pipeline from 291-A Fan Building to 216-A-33 French Drain **Reclassification:** None

Code: 200-E-273-PL
Names: 200-E-273-PL; Pipeline to 216-A-13 French Drain

Code: 200-E-274-PL **Classification:** Accepted
Names: 200-E-274-PL; Line 323; Pipeline from 244-A Lift Station to 216-A-40 Basin **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter carbon steel pipeline that connected the 244-A Lift Station to the 216-A-40 basin.

Location: The pipeline is located south of 7th Street and west of Buffalo Ave. It is south and east of the 244-A Lift Station.

Related Sites/ Structures: The pipeline is associated with the 216-A-40 basin and the 244-A Lift Station.

Code: 200-E-275-PL **Classification:** Accepted
Names: 200-E-275-PL; Cooling Water Pipeline to 216-A-40 Basin; Line 815 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 30 centimeter (12 inch) diameter concrete cooling water pipeline that fed the 216-A-40 basin.

Location: The pipeline is located south of 7th Street and west of Buffalo Ave. It runs along the east side of the 216-A-40 Retention Basin.

Related Sites/ Structures: The pipeline is associated with the 216-A-40 basin and the 244-AR Vault.

Code: 200-E-276-PL **Classification:** Accepted
Names: 200-E-276-PL; 216-A-41 Crib Pipeline **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 10 centimeter (4 inch) diameter vitrified clay pipeline that connected the 296-A-13 stack to the 216-A-41 crib.

Location: The pipeline is located west of Buffalo Ave. and north of the 244-AR Vault.

Process Description: The pipeline carried stack drainage to the 216-A-41 crib.

Description:

Related Sites/ Structures: The pipeline is associated with the 216-A-41 crib.

Code: 200-E-277-PL **Classification:** Accepted
Names: 200-E-277-PL; 216-B-59 and 216-B-59B **Reclassification:** None

Pipelines

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground pipeline that connected 221-B to the 216-B-59 Retention Basin. The majority of the pipeline is constructed of varied diameters of carbon steel pipe. The section of pipe that extends from the 221-BA sampling building to the head end of the basin is constructed of 38 centimeter (15 inch) diameter vitrified clay pipe. The by-pass line that connects to the center of the basin is constructed and the pipeline re-routing basin effluent to 241-B Tank farm are constructed of 5 centimeter (2 inch) diameter carbon steel. (see subsites)

Location: The pipeline extends from the south side of 221-B to 216-B-59 Retention Basin. It crosses under Baltimore Ave.

Process Description: In 1978, a new pipeline was added that connected the 216-B-59B basin to pipeline 200-E-199-PL, allowing effluent to be directed into the tank farm system.

Related Sites/ Structures: The pipeline is associated with B Plant operations and the 216-B-59 Retention Basin and pipeline 200-E-199-PL.

This Site has the Following SubSites:

Code: 200-E-277-PL:1

Names: 200-E-277-PL:1; Carbon Steel Portion of Pipeline South of 221-B

Code: 200-E-277-PL:2

Names: 200-E-277-PL:2; 15-Inch VCP Portion of Pipeline

Code: 200-E-277-PL:3

Names: 200-E-277-PL:3; 2-Inch Carbon Steel Bypass Line from a Pump at the Center Section of the Basin and Two 3-Inch CS Lines from the Basin to the Pump

Code: 200-E-277-PL:4

Names: 200-E-277-PL:4; 2-Inch Carbon Steel Line Re-Routing 216-B-59 Basin Effluent to the 200-E-199-PL Encased Tank Farm Line

Code: 200-E-277-PL:1

Classification: Accepted

Names: 200-E-277-PL:1; Carbon Steel Portion of Pipeline South of 221-B

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-277-PL

Names: 200-E-277-PL; 216-B-59 and 216-B-59B Pipelines

Code: 200-E-277-PL:2

Classification: Accepted

Names: 200-E-277-PL:2; 15-Inch VCP Portion of Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-E-277-PL
Names: 200-E-277-PL; 216-B-59 and 216-B-59B Pipelines

Code: 200-E-277-PL:3 **Classification:** Accepted
Names: 200-E-277-PL:3; 2-Inch Carbon Steel Bypass Line from a Pump at the Center Section of the Basin and Two 3-Inch CS Lines from the Basin to the Pump **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: Located inside the basin structure.

The SubSite is Part Of:

Code: 200-E-277-PL
Names: 200-E-277-PL; 216-B-59 and 216-B-59B Pipelines

Code: 200-E-277-PL:4 **Classification:** Accepted
Names: 200-E-277-PL:4; 2-Inch Carbon Steel Line Re-Routing 216-B-59 Basin Effluent to the 200-E-199-PL Encased Tank Farm Line **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-E-277-PL
Names: 200-E-277-PL; 216-B-59 and 216-B-59B Pipelines

Code: 200-E-278-PL **Classification:** Accepted
Names: 200-E-278-PL; Pipeline to Chemical Tile Field North of 2703E; Process Sewer Pipeline from 272-E to CTFN 2703E **Reclassification:** None
Type: Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is various diameters of underground vitrified clay pipe connecting 200 East Area shop facilities to the chemical drain field located north of 2703E.
Location: The pipeline is located in central 200 East Area. It is west of Baltimore Ave. and crosses under 4th Street.
Related Sites/ Structures: The pipeline is associated with 272-E and 2703-E and the Chemical Tile Field North of 2703-E.

Code: 200-E-279-PL **Classification:** Accepted
Names: 200-E-279-PL; Pipeline from 241-B-361 Settling Tank to 216-B-5 Reverse Well **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**

Status: Inactive

End Date:

Description: The waste site is an underground, 5 centimeter (2 inch) diameter stainless steel pipeline that carried waste from the 241-B-361 Settling Tank to the 216-B-5 Reverse Well.

Location: The pipeline is located on the east side of Baltimore Ave., northeast of the 241-B-361 Settling Tank.

Related Sites/ Structures: The pipeline is associated with the 241-B-361 Settling Tank and the 216-B-5 Reverse Well.

Code: 200-E-280

Classification: Not Accepted (Proposed)

Names: 200-E-280; 2711E Parking Lot; Oil Spots

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is the parking lot for 2711E (200 East Garage/Automotive Shop). The site is suspected to be contaminated with oil that has dripped from vehicles awaiting maintenance and from a spill of used oil (see releases). Areas of oil-stained soil are scattered throughout the parking lot.

Location: The parking lot surrounds the 2711E facility. It is bounded on the east by Alabama Avenue, on the west by railroad tracks, and on the south by 4th Street. The northern edge of the parking lot is approximately 160 meters (525 feet) north of 4th street (estimated using aerial photography in QMAP).

Waste Type: Oil

Waste Description: Areas of oil-stained soil are scattered throughout the parking lot.

Code: 200-E-281-PL

Classification: Accepted

Names: 200-E-281-PL; Line V306; Pipeline from 241-B Tank Farm to 216-B-7A and 216-B-7B Cribs

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline that connects the 241-B-202 and 241-B-202 tanks to the 216-B-7A and 216-B-7B cribs.

Location: The pipeline is located north of the 241-B Tank Farm.

Related Sites/ Structures: The pipeline is associated with the 241-B-201 and 241-B-202 tanks and the 216-B-7A and B cribs.

Code: 200-E-282-PL

Classification: Accepted

Names: 200-E-282-PL; Lines 4001, 4002, 4003 and 4004; Process Waste Lines from 202-A to 241-AX-151 Diversion Box

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The concrete encased pipeline contains four, 7.6 centimeter (3 inch) diameter stainless steel pipelines.

Location: The pipeline encasement originates on the south side of the PUREX facility. It extends

Location: westward beyond the facility footprint and turns north in between the double security fences on the west side of PUREX. The pipeline continues under 4th Street and angles east until it terminates at the 241-AX-151 Diversion Box.

Code: 200-E-283-PL **Classification:** Accepted

Names: 200-E-283-PL; Line 395; Pipeline from 242-A Bldg to 600-291-PL (TEDF Line) **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground 15 centimeter (6 inch) diameter carbon steel pipeline that connects 242-A to the 600-291-PL TEDF pipeline.

Location: The pipeline is located on the east side of the 242-A Evaporator Building.

Process Description: Prior to the construction of the LERF and TEDF systems, the pipeline originally transferred waste from 242-A Evaporator to the Gable and B Ponds via pipeline 200-E-127-PL. Later, this effluent was transferred to the TEDF system via the 600-291-PL pipeline. The portion of the 200-E-127-PL pipeline where 200-E-283-PL connects was re-used to feed the TEDF system. The sitecode for this section of pipeline was changed to 600-291-PL.

Related Sites/Structures: The pipeline is associated with the 200-E-127-PL and 600-291-PL pipelines and the 242-A Evaporator building.

Code: 200-E-284 **Classification:** Accepted

Names: 200-E-284; Septic Tank East of 241-BY-102 **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground septic tank.

Location: The septic tank is located east of 241-BY Tank Farm, on the west side of Baltimore Ave. It is outside the tank farm fence.

Process Description: The septic tank serviced the In Tank Solidification (ITS) #1 Compressor House. The Compressor House was located inside the tank farm fence.

Code: 200-E-285 **Classification:** Accepted

Names: 200-E-285; 216-A-8 Control Structure; 216-A-8 Sample Pit; Sample Pit #2 **Reclassification:** None

Type: Control Structure **Start Date:**

Status: Inactive **End Date:**

Description: The sampler pit is a concrete structure with three valves, two vent stacks and one curved, metal bonnet extending from the structure. The structure is surrounded with post and chain with Underground Radioactive Material and Contamination Area signs. The area around the structure is gravel and asphalt.

Location: The sample pit is located on the east side of 241-A tank farm, outside the tank farm fence.

Release: In 1959, contaminated moisture dripping from a vent pipe bonnet at the 216-A-8 Proportional

Description: Sample Pit contaminated the ground around the cement pad. (see UPR-200-E-18)

Related Sites/ Structures: The sample pit is associated with the 216-A-8 crib, 216-A-34, 241-A Tank farm, 200-E-164-PL, 200-E-166-PL and UPR-200-E-18.

Code: 200-E-287 **Classification:** Accepted

Names: 200-E-287; Posted Contamination Areas on Pipe Berm east of 241-A, AN, AX, AY and AZ Tank Farms **Reclassification:** None

Type: Contamination Migration **Start Date:**

Status: Unknown **End Date:**

Description: The waste site is a long, posted Soil Contamination Area located on the both sides of the gravel covered berm.

Location: The berm is located east of the 241-A Tank Farm Complex. It extends southeast from 241-AN Farm, crosses Canton Ave. and continues beyond the 200 East perimeter fence to the Vitrification Plant that is currently under construction.

Code: 200-E-288-PL **Classification:** Accepted

Names: 200-E-288-PL; PC-5000; Pipeline from 242-A Evaporator to Liquid Effluent Retention Facility **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Active **End Date:**

Description: The waste site is an underground, fiberglass reinforced epoxy pipeline. It is a 7.6 centimeter (3 inch) pipe inside a 15.2 (6 inch) pipe.

Location: The pipeline extends from the north side of the 242-A Evaporator building to the Liquid Effluent Retention Facility fence.

Process Description: The PC-5000 pipeline carries process condensate waste from the 242-A Evaporator to the Liquid Effluent Retention Facility (LERF) basin 242AL-43. If radiation level exceed established limits, an alarm is received and interlocks divert the stream back to the condensate collection tank and the pump is shut off. This ensures that excessive radionuclides are not accidentally transferred to LERF. Electronic leak detectors and swab risers are provided at 305 meter (1000 foot) intervals along the pipeline.

Waste Type: Steam Condensate

Waste Description: Process condensate from the 242-A Evaporator is a mixed waste stream. It is a dilute aqueous solution containing ammonia, volatile organics and trace quantities of radionuclide and inorganic constituents.

Code: 200-E-289-PL **Classification:** Accepted

Names: 200-E-289-PL; Lines 637, SN-700 and SN-701; Pipelines between AP-02D Pit and WTP **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is three underground, stainless steel pipes (each encased in a carbon steel pipe).

Each line (637, SN-700 and SN-701) is a 7.6 centimeter (3 inch) pipe inside a 15.2 (6 inch) pipe.

Location: The pipelines extend from the east side of the 241-AP Tank Farm towards the Waste Treatment Plant (WTP).

Process Description: These pipelines are currently capped outside the 241-AP Tank Farm. They will retain the inactive status until lines is connected to the Waste Treatment Plant (WTP) that is currently under construction. Line SN-700 and SN-701 extend from the 241-AP-02D pump pit and currently terminate near the west side of the WTP. Pipeline SN-637 extends from the east side of the 241-AZ Tank Farm and terminates near the west side of the WTP. These lines will later be tied into piping that connects to the WTP and will be utilized to support supplying waste to and receiving waste from the WTP.

Related Sites/ Structures: The lines are associated with the 241 AP 02D pump pit and the WTP (future).

Waste Type: Process Effluent

Waste Description: In the future, the waste transferred through the pipelines will be Waste Tretment Plant feed and return effluent.

Code: 200-E-290-PL **Classification:** Accepted

Names: 200-E-290-PL; Pipeline from 271-CR to 216-C-8 French Drain **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is a 4 inch diameter Vitrified Clay Pipe that extends from the 271-CR building to the 216-C-8 french drain. The 216-C-8 french drain is also known as the 271-CR crib.

Location: The pipeline is located north of 7th Street. A portion of the pipeline is inside the 241-C tank farm fence. It extends eastward, beyond the 241-C tank farm fence to the 216-C-8 french drain.

Code: 200-E-291-PL **Classification:** Accepted

Names: 200-E-291-PL; Pipeline from 241-C-106 to 241-AY-102, SN-200, SL-100, 241-C-106 Sluice line **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two 4 inch diameter stainless steel pipelines buried in the same soil trench. Each stainless steel line is encased within a 6 inch diameter carbon steel pipe.

Location: The pipelines extend from the 241-C tank farm to the 241-AY tank farm, on the east side of Buffalo Ave.

Process Description: Line SN-200 extends from 241-C-106-06C Sluice Pit to the 241-AY-102-02E Sluice Pit. The pump was electrically isolated, but remains in place. Line SL-100 extends from the 241-C-106-A pump pit to the 241-AY-102-02A pump pit. SL-100 was isolated at 241-C-106.

Code: 200-E-292 **Classification:** Accepted

Names: 200-E-292; Area of Debris and Subsurface **Reclassification:** None

Anomalies on Unused Portion of 218-E-10 (aka 200-E-20)

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The waste site is an area of interest (on 200-E-20) determined with Ground Ground Penetrating Radar.

Location: The debris area is located in the northern portion of WIDS sitecode 200-E-20. The area is approximately 39.6 X 10 meters (130 by 30 feet).

Related Sites/ Structures: The area is associated with 200-E-20.

Code: 200-E-293

Classification: Accepted (Proposed)

Names: 200-E-293; 2718-E Contaminated Concrete Slab, 2718-E Foundation

Reclassification: None

Type: Foundation

Start Date:

Status: Inactive

End Date:

Description: The surface stabilized slab is associated with building 2718E, in 200 East Area. The metal building atop slab was demolished in November 2011 and the slab was left in place. The slab had a spot of radiological contamination. The contamination on the slab was covered with plastic, plywood and soil and posted as an Underground Radioactive Material Area.

Location: The waste site is inside the 209-E complex. It is located where the 2718-E building once stood.

Code: 2607-E13

Classification: Accepted

Names: 2607-E13; Septic Holding Tank South of 277-A

Reclassification: None

Type: Septic Tank

Start Date:

Status: Active

End Date:

Location: The septic holding tank is located on the west side of Buffalo Ave., south of the 277-A building.

Process Description: The drain field failed in 1996 and was abandoned. The septic tank is currently used as a septic holding tank.

Related Sites/ Structures: This tank services MO-398, MO-919 and MO-570 in 200 East Area.

Code: 2607-EB

Classification: Accepted

Names: 2607-EB; 241-BY-254 (ITS #2) Sanitary Septic System

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1963

Status: Inactive

End Date:

Description: In 1991, the system was marked and roped. A site visit in 1997 (from outside the tank farm fence) could not identify the location of the system. The unit includes a drain field.

Location: The septic system is located inside 241-BY, adjacent to the western 241-BY Tank Farm fence, west of 241-BY-112.

Process Description: The system received sanitary waste from the ITS #2 facility.

Related Sites/Structures: Adjacent to the septic tank is a drain field composed of vitrified clay pipe, concrete pipe, or drain tile forming the main line and laterals from the tank.

Waste Type: Sanitary Sewage

Waste Description: Sanitary wastewater and sewage. Estimated rate of waste generation is 0.02 cu m/d.

Code: 2607-EF **Classification:** Accepted

Names: 2607-EF; Septic Tank West of 241-BX Tank Farm **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground septic tank.

Location: The septic tank is located on the west side of the 241-BX Tank Farm, outside the fence.

Process Description: The septic tank had serviced the 271 BXR Control House. The Control House building was located inside the tank farm fence.

Code: 2607-ES **Classification:** Accepted

Names: 2607-ES; Septic Tank and Dry Well North of 204-AR **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Active **End Date:**

Location: The septic tank and dry well are located north of the 204-AR building.

Process Description: The septic tank serviced the 204-AR building. The attached dry well is located north of the septic tank.

Code: 241-ER-153 **Classification:** Accepted

Names: 241-ER-153; 241-ER-153 Diversion Box **Reclassification:** None

Type: Diversion Box **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: Most of the diversion box structure is underground. The cover blocks with lifting bails are visible on the surface. The 244-A Lift Station is fenced, marked and radiologically posted.

Location: The 241-ER-153 Diversion Box is located south of Seventh Street, inside the fenced 244-A lift station.

Process Description: Diversion boxes contain jumper piping for routing liquid waste between facilities and the tank farms via underground transfer lines. They are concrete boxes that were designed to contain any waste that leaks from the high-level waste transfer line connections. The diversion boxes generally drain by gravity to nearby catch tanks where any spilled waste is stored. The 241-ER-153 Diversion box is a roughly rectangular reinforced concrete structure. The floors and lower

portions of the walls are lined in stainless steel.

Related Sites/ Structures: The 241-ER-153 diversion box is associated with the 244-A Lift Station, 241-C Tank Farm, and the 241-ER-151, and 241-ER-152 Diversion Boxes and pipelines 200-E-145-PL and 200-E-147-PL.

Waste Type: Process Effluent

Waste Description: The diversion box distributes waste between facilities and tank farms via underground transfer lines. Transfer lines V228, SN232 and SN233 are connected to 241-ER-153. Quantities are variable according to specific plant operations. This diversion box connects the 241-C Tank Farms to the double-shell tanks, and supports the 241-ER-151 Diversion Box in cross-site waste transfers. It is estimated that approximately 23 kilograms (50 pounds) of lead shielding may be stored in each diversion box.

Code: 200-W-13

Classification: Accepted

Names: 200-W-13; 2713-WB Green Hut Complex; Regulated Vehicle Maintenance Shop Parking Areas

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The waste site is the areas of discolored soil (petroleum possibly) adjacent and near 2713-WB. Miscellaneous regulated equipment has been stored outside and north of 2713-WB in the past. Trash and debris are scattered around 2713-WB (including vitrified clay pipe, wood, metal, glass, cloth, plastic, rubber, brick, and aerosol cans. There is coated (pink) steam line on south side of 2713-WB indicating asbestos.

Location: The site is located within the 200 West Area, north of 19th Street. 2713-WB is approximately 100 meters west of Bridgeport Ave.

Process Description: The site was used for regulated (i.e., containing radioactive material) vehicle maintenance and storage. In 1995, the north parking area and the area on the west side of the building were chained and posted with Contamination Area signs.

Related Sites/ Structures: The site is related to the Minor Construction Area, Paint Shop, Shops, and the Power House.

Waste Type: Soil

Waste Description: There are areas of discolored soil (presumed to be petroleum products) adjacent and near 2713-WB and areas with radiation protection postings. Regulated radioactive material and equipment have been stored outside and north of 2713-WB. The inside of the building was the Regulated Vehicle repair shop during the 1980's.

Code: 200-W-15

Classification: Accepted

Names: 200-W-15; S Plant Project W-087 Hexone Discovery

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The pipe trench where the hexone soil was found has been back filled to grade with soil originally removed from the excavation. Hexone contaminated soil was also put back into the excavation. There is currently no visual evidence of this excavation on the surface. The area is

now under asphalt. It is not marked or posted.

Location: The site is located approximately 18 meters (59 feet) southwest of the southwest corner of REDOX (202-S). It is above the 200-W-189-PL pipeline.

Release Description: In June, 1995, while excavating pipe trench for Project W-087 (new transfer lines from 222-S to 244-S), a dark 4.6-centimeter (3-inch) thick layer of soil was noted at about 0.6-meter (2-foot) depth. It was determined to be hexone and surfactants. The hexone soil was stockpiled and returned to the excavation after the pipe was installed in the trench.

Process Description: Hexone was used in the adjacent facility 202-S REDOX.

Related Sites/ Structures: The 202-S, 222-S, and 244-S are associated with the site.

Waste Type: Chemical Release

Waste Description: The waste consists of soil containing hexone and surfactants. The reported date was June 1995.

Code: 200-W-44 **Classification:** Accepted

Names: 200-W-44; 291-U Stack Sand Filter **Reclassification:** None

Type: Sand Filter **Start Date:** 1/1/1948

Status: Inactive **End Date:**

Description: The sand filter is constructed of reinforced concrete that is partially below grade with an asphalt covered, concrete slab roof. The chain link fence was removed in March 2002, when the area was surface stabilized. It is posted as an Underground Radioactive Material area. The sides of the sand filter that extend above grade are covered with gravel.

Location: The sand filter is located east of the 221-U Building and northeast of the 291-U Stack.

Related Sites/ Structures: The 291-U-1 Stack, 291-U Fan Control House, and 291-U Vessel Vent Pit are associated with the unit.

Waste Type: Soil

Waste Description: The sand filter contains low-level fission products, but no plutonium.

Code: 200-W-73 **Classification:** Accepted

Names: 200-W-73; Contaminated Debris Near Railroad Track; URMA East of 218-W-2A **Reclassification:** No Action (6/30/2004)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:** 1/1/2000

Description: The site is currently covered with gravel and posted as an Underground Radioactive Material Area. It originally had been surrounded with light post and chain and posted as a Contamination Area.

Location: The site is located north of 23rd Street, east of the 218-W-2A Burial Ground. It is adjacent to the railroad track.

Release Description: The contaminated material was identified partly inside and partly outside of a previously posted Contamination Area on April 10, 2000. The posted area appeared to be very old and

abandoned. The site consisted of contaminated wood and metal debris. The maximum direct contamination found on the metal was 12,000 disintegrations per minute. The area was properly reposed and logged into the Contamination Area logbook.

Waste Type: Misc. Trash and Debris

Waste Description: The waste consists of contaminated wood and metal debris.

Closure Info: In June 2000, the scrap wood and angle iron were surveyed with field instruments. The metal that exhibited no detectable radiological contamination was recycled. Contaminated iron and scrap wood was processed as Low-level Waste (LLW). After the debris was removed the area was radiologically surveyed. No contamination was identified in the soil or vegetation. Six inches of gravel was spread over the area and the posting was changed from Contamination Area to Underground Radioactive Material.

Code: 200-W-78-PL **Classification:** Accepted

Names: 200-W-78-PL; 6025; 7624 and 7630; Lines 6012; Pipeline Between 241-TX/TY and 241-T Tank Farms **Reclassification:** None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The site is an encased underground pipeline that runs between the 241-TXR-151 Diversion Box in the 241-TX Tank Farm and the 241-TR-153 Diversion Box in the 241-T Tank Farm. The encasement contains four lines (6012, 6025, 7624 and 7630). Outside the tank farm fence, the line is marked with Radioactive Pipeline signs. There are several stabilized, individually radiologically posted areas on top of (or adjacent to) this pipeline, near the east side of the 241-TY Tank Farm perimeter fence.

Location: The underground line is located in 200 West Area between the 241-T and 241-TX/TY Tank Farms, on the west side of Camden Avenue.

Process Description: The lines inside the tank farm fence are direct buried in a soil trench. The portion of the lines that are outside the tank farm fence are encased in cement. Lines 6012, 6025, 7624 and 7630 are inside this pipe trench and encasement. Lines 6025 and 7630 connect 241-TR-153 Diversion Box with 241-TXR-151 Diversion Box. Line 6012 connects the 241-T-101 salt well pump with 244-TX DCRT. Line 7624 connects the 241-T-111 salt well pump with 244-TX DCRT. The lines inside the tank farm are direct buried, stainless steel.

Related Sites/Structures: The line is associated with 241-T and 241-TX Tank Farms. UPR-200-W-167 was also located in the vicinity of this pipeline.

Waste Type: Process Effluent

Waste Description: The pipeline transported liquid process effluent between the 241-T and 241-TX/TY tank farms.

Description: The contaminated soil and vegetation found above the transfer line was the result of biological intrusion into underground tank farm transfer lines.

Code: 200-W-79-PL **Classification:** Accepted

Names: 200-W-79-PL; 216-T-36 Crib Pipeline; V663 **Reclassification:** None

Type: Radioactive Process Sewer

Start Date: 1/1/1967

Status: Inactive

End Date:

Description: 216-T-36 Crib. There were three separately posted Contamination Areas located on top of this pipeline, west of the 216-T-36 Crib. In November 2000, the Contamination Areas were stabilized and reposted as Underground Radioactive Material areas.

Location: The pipeline is located south of 23rd Street and west of Camden Avenue.

Process Description: The 10 centimeter (4 inch) vitrified clay crib line is connected to the stainless spare line V663 (see 200-W-130-PL). This pipeline carried waste that originated at both T-Plant and U-Plant via the 241-T-151 diversion box. The diversion box is located inside the 241-T tank farm.

Related Sites/ Structures: The site is associated with the 216-T-36 Crib, 241-T-151 Diversion Box and 200-W-130-PL.

Waste Type: Soil

Waste Description: The waste is the vitrified clay pipeline and contaminated soil from apparent pipeline leaks. Contaminated vegetation has been identified growing on this pipeline.

Code: 200-W-88-PL	Classification: Accepted
Names: 200-W-88-PL; 221-T Process Sewer; 24 Inch Process Sewer; T Plant Process Sewer Pipeline; 200-W-88	Reclassification: None
Type: Radioactive Process Sewer	Start Date: 1/1/1944
Status: Inactive	End Date: 1/1/1995

Description: The main waste site is a vitrified clay process sewer pipeline connecting T Plant buildings to the 207-T Retention Basin. The main line is a 61 centimeter (24 inch) diameter, underground vitrified clay pipeline extending from 221-T and 224-T to the 207-T Retention Basin. Feed lines from various support facilities are listed as subsites. There are multiple 1.2 meter (4 foot) diameter, yellow concrete manholes visible at intervals along the sewer line. This site also includes a radiologically posted area around one of the manholes located northwest of 216-T-6 crib. (see subsites)

Location: The Process Sewer pipeline runs west from 221-T to the 207-T Retention Basin on the north side of 23rd Street.

Process Description: The Process Sewer lines transferred process cooling water, air conditioning condensate and floor drain waste from 221-T, 224-T and 2706-T to the 207-T Retention Basin. The retention basin released effluent to ditch that led to the 216-T-4-1 and 216-T-4-2 Ponds.

Related Sites/ Structures: The pipelines are associated with 221-T, 224-T, 2706-T and 207-T.

Waste Type: Process Effluent

Waste Description: The Process Sewer effluent contained chemicals and low level radiological contaminants from T Plant processes.

This Site has the Following SubSites:

Code: 200-W-88-PL:1

Names: 200-W-88-PL:1; 24-Inch VCP Pipeline from Manhole South of 221-T to 207-T Retention Basin

Code: 200-W-88-PL:2

Names: 200-W-88-PL:2; 6-Inch VCP Line That Runs North to South (West of 221-T)

Process Description: The encased 7.6 centimeter (3 inch) diameter pipelines transferred waste from the REDOX facility to the 241-S-151 Diversion Box at the 241-S/SX Tank Farm.

Related Sites/ Structures: The site is associated with 202-S, 203-S, 204-S and 205-S and the 241-S-151 Diversion Box.

Waste Type: Process Effluent

Waste Description: The pipeline transferred REDOX process waste to the 241-S/SX Tank Farm.

Code: 200-W-98-PL **Classification:** Accepted

Names: 200-W-98-PL; Encased Pipeline from 240-S-151 to 241-U-153 Diversion Box; V458, V459, and V460 **Reclassification:** None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The site is a cement encased, underground pipeline. The pipeline is marked with Underground Radioactive Material - Pipeline signs.

Location: The pipeline is located south of 16th Street, extending in a southeast direction from the 241-U-153 Diversion Box to 204-S and the REDOX facility.

Process Description: The pipeline transferred waste between the 241-U-153 Diversion Box (located inside the 241-U Tank Farm) and the 204-S facility. There are three, 7.6 centimeter (3 inch diameter) carbon steel lines inside the concrete encasement.

Related Sites/ Structures: The site is associated with the 204-S Facility and the 241-U-153 Diversion Box.

Waste Type: Process Effluent

Waste Description:

Code: 200-W-99-PL **Classification:** Accepted

Names: 200-W-99-PL; Encased Pipeline from 241-U-151 to 241-S-151 Diversion Boxes; Lines V455 and V456 **Reclassification:** None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The site is a cement encased, underground pipeline. The pipeline is marked with Underground Radioactive Material - Pipeline signs.

Location: The pipeline is located south of 16th Street, extending from the 241-U-151 Diversion Box to the 241-S-151 Diversion Box.

Process Description: The pipeline transferred various wastes between the 241-U and 241-S/SX Tank Farms. The lines are contained within a 3-38 encasement, indicating there are three separate lines inside the cement encasement.

Waste Type: Process Effluent
Waste Description:

Code: 200-W-100-PL **Classification:** Accepted

Names: 200-W-100-PL; Encased Pipeline from 241-UX-154 to 241-SX-152 Diversion Box; Lines 4700, 4701, 4853, V762, V503 and V505 **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The site is a cement encased, underground pipeline. The pipeline is marked with Underground Radioactive Material - Pipeline signs.

Location: The pipeline begins on the east side of the 221-U building and extends in a southwest direction to terminate at the 241-SX-152 Diversion Box, located on the east side of 241-S/SX Tank Farm.

Process Description: The pipelines transferred U Plant canyon waste to the 241-S/SX Tank Farm via the 241-UX-154 diversion box. The 7.6 centimeter (3 inch) diameter stainless steel lines include lines 4700, 4701, 4853, V762, V503 and V505.

Related Sites/Structures: A short segment of the 216-U-8 pipeline (sitecode 200-W-42-PL) crosses over 200-W-100-PL at the point where both pipelines are under 16th Street. This segment of the crib pipeline was given a separate sitecode (200-W-151-PL). It is anticipated that the segment of crib pipeline under 16th Street (200-W-151-PL) will be addressed with the 200-W-100-PL pipeline.

Waste Type: Process Effluent

Waste Description: The pipeline transferred U Plant canyon waste to the 241-S/SX Tank Farm via the 241-UX-154 diversion box.

Code: 200-W-105-PL **Classification:** Accepted

Names: 200-W-105-PL; Encased Lines V375, V382, and 4859/4703; Encased Transfer Line Between 241-UX-154 Diversion Box and 241-TX-155-Diversion Box **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The site is a cement encased, underground pipeline. The pipeline is marked with Underground Radioactive Material - Pipeline signs.

Location: The pipeline begins on the east side of the 221-U building and extends in a northwest direction to terminate at the 241-TX-155 Diversion Box. It runs beneath the construction shop complex, north of 19th St. It connects to pipeline 200-W-191-PL, that continues from the diversion box to the 241-TX Tank Farm.

Process Description: The pipeline transferred U Plant canyon waste to the 241-TX Tank Farm via the 241-UX-154 diversion box, 241-TX-155 diversion box and pipeline 200-W-191-PL.

Related Sites/Structures: The encasement includes tank farm lines V375, V382, 4859/4703. The pipeline is associated with 221-U, 241-TX-155 diversion box and pipeline 200-W-191-PL.

Waste Type: Process Effluent

Waste Description: The pipeline transferred waste to the 241-TX Tank Farm.

Code: 200-W-110 **Classification:** Not Accepted (Proposed)

Names: 200-W-110; Miscellaneous Stream #393 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Unknown **End Date:**

Description: Unable to locate from the description provided in DOE/RL-88-11.

Location: The drain was on the east side of the 222-U building. The 222-U building has been demolished. Unable to locate in the field.

Process Description: The drain received storm water run off from the 222 -U facility.

Code: 200-W-114 **Classification:** Discovery

Names: 200-W-114; Miscellaneous Stream #55 **Reclassification:** None

Type: Injection/Reverse Well **Start Date:**

Status: Unknown **End Date:**

Description: Unable to located based on the description provided in DOE/RL-88-11.

Location: The steam condensate drain was located on the southeast side of 224-U. The entire south side of 224-U and 224-UA is covered with asphalt. 224-U has been demolished.

Code: 200-W-125-PL **Classification:** Accepted

Names: 200-W-125-PL; 216-Z-1 Ditch Replacement Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground buried pipeline. The pipeline is a 0.46 meter (18 inch) diameter vitrified clay pipe. When 216-Z-11 and 216-Z-19 ditches were discontinued, the effluent was diverted to 216-Z-20 via a 38 centimeter (15 inch) diameter polyvinyl chloride pipe.

Location: The pipeline extends east from the 231-Z building and turns south to connect with the head end of the 216-Z-11 Ditch.

Process Description: The pipeline was installed to transfer effluent to the 216-Z-11, 216-Z-19 and 216-Z-20 Ditches after the 216-Z-1 Ditch was abandoned.

Related Sites/ Structures: The site is associated with 216-Z-1 Ditch, 216-Z-11 Ditch, 216-Z-20 crib and the 231-Z building

This Site has the Following SubSites:

Code: 200-W-125-PL:1

Names: 200-W-125-PL:1; 18-Inch VCP Pipeline from 231-Z to 216-Z-11 and 216-Z-19 Ditches

Code: 200-W-125-PL:2

Names: 200-W-125-PL:2; 15-Inch PVC Pipe from Manhole to 216-Z-20

Code: 200-W-125-PL:1 **Classification:** Accepted
Names: 200-W-125-PL:1; 18-Inch VCP Pipeline from 231-Z to 216-Z-11 and 216-Z-19 Ditches **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-125-PL
Names: 200-W-125-PL; 216-Z-1 Ditch Replacement Pipeline

Code: 200-W-125-PL:2 **Classification:** Accepted
Names: 200-W-125-PL:2; 15-Inch PVC Pipe from Manhole to 216-Z-20 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-125-PL
Names: 200-W-125-PL; 216-Z-1 Ditch Replacement Pipeline

Code: 200-W-126 **Classification:** Accepted
Names: 200-W-126; Tank Farm Vertical Storage Units; Vertical Storage Units West of 241-T Tank Farm **Reclassification:** None
Type: Storage **Start Date:**
Status: Inactive **End Date:**

Description: The site consists of six vertical storage units. The units were constructed of steel pipes approximately 0.3 meters (1 foot) in diameter and 2 meters (6 feet) deep. They extend approximately 0.1 meters (4 inches) above the ground surface.

Location: The six storage units are located near the outside of the 241-T Tank Farm fence. They are approximately 10 meters (30 feet) west of the tank farm and north of 23rd Street. They are located within a large Underground Radioactive Material area that includes the 216-T-7 tile field and the 216-T-5 crib.

Process Description: The Vertical Storage Units (VSU) were used to store dry, radiologically contaminated tank farm equipment, like shield plugs and slurry distributor handles or contaminated soil. The units are currently empty and have been capped.

Related Sites/ Structures: The units are associated with the 241-T Tank Farm.

Waste Type: Equipment

Waste Description: The units were used to store radioactively contaminated pieces of equipment like shield plugs and distributor handles.

Code: 200-W-127 **Classification:** Accepted
Names: 200-W-127; Surface Stabilized Area East of UPR- **Reclassification:** None

200-W-29/UPR-200-W-97 (UN-216-W-5)

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is a posted Underground Radioactive Material area that has been covered with gravel.

Location: The site is located on the south side of 23rd Street in 200 West Area. It is west of T Plant and east of UPR-200-W-29/UPR-200-W-97, a posted Underground Radioactive Material area on the corner of 23rd St. and Camden Ave.

Related Sites/ Structures: Encased pipeline 200-W-129-PL crosses this radiologically posted area.

Code: 200-W-128

Classification: Accepted

Names: 200-W-128; Underground Radioactive Material Area East of 218-W-4A

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site is posted with Underground Radioactive Material signs. A considerable amount of sand appears to have blown onto the posted area.

Location: The site is located approximately 100 feet south of 23rd Street, inside 200 West Area. It is adjacent to the 218-W-4A fence.

Related Sites/ Structures: The area is associated with the 218-W-4A burial ground.

Code: 200-W-129-PL

Classification: Accepted

Names: 200-W-129-PL; Encased Pipeline from 241-T-151 and 241-T-152 to 241-TX-155 Diversion Box; Lines V399, V405 and V411

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date: 1/1/1950

Status: Inactive

End Date:

Description: The site is an underground cement encasement containing three carbon steel pipelines. The encasement is marked and posted with Underground Radioactive Material and Pipeline signs.

Location: The encased pipeline connects the 241-T-151 and 241-T-152 Diversion Boxes, located inside 241-T Tank Farm to the 241-TX-155 Diversion Box, located south of 23rd Street and north of the Powerhouse Pond.

Process Description: The encasement contains lines V399, V405 and V411. Each pipeline is made of 7.6 centimeter (3 inch) diameter carbon steel. The lines connect 241-T-151 and 241-T-152 with 241-TX-155.

Related Sites/ Structures: The pipelines are associated with 241-T-151, 241-T-152 and 241-T-155 diversion boxes and UPR-200-W-113.

Code: 200-W-130-PL

Classification: Accepted

Names: 200-W-130-PL; Lines V445, V663, V601 and V416 and Spare Lines V662, V663, V682 and V683; Pipelines from 241-T-151 and 241-T-152

Reclassification: None

 Diversion Boxes to 241-U-151 Diversion Box
Type: Direct Buried Tank Farm Pipeline**Start Date:****Status:** Inactive**End Date:**

Description: The site is a soil trench that contains multiple stainless steel pipelines exiting the 241-T-151 and 241-T-152 diversion boxes. Each line is 7.6 centimeters (3 inches) in diameter. Three lines (V445, V663, V662) extend south from the 241-T-151 diversion box. Three lines (V601, V682, V683) extend south from 241-T-152 diversion box. One line from each diversion box (V445 and V601) merge together south of 241-T tank farm, south of 23rd Street and continue to 241-U-152 diversion box. The lines are encased in concrete only where they pass under 23rd Street.

Location: The majority of this pipeline is located east of Camden Ave. It connected the 241-T-151 and 241-T-152 Diversion Boxes, located inside 241-T Tank Farm, to the 241-U-151 Diversion Box, located east of 241-U Tank Farm. Lines V445, V663 and V662 extend from 241-T-151 Diversion Box. Lines V601, V682 and V683 extend from 241-T-152 Diversion Box. The two sets of pipelines join together south of 241-T tank farm, south of 23rd Street.

Release Description: See UPR-200-W-29.

Process Description: Lines V445, V662 and V663 exit the 241-T-151. Lines V662 and V663 exit 241-T-151 diversion box in the same trench as V445. V662 and V663 were originally spare lines that were cut and capped south of the diversion box, outside the tank farm fence. Line V663 was later reactivated to connected to the 216-T-36 crib (see sitecode 200-W-79-PL). V445 continues south to 241-U-151. Lines V601, V682 and V683 exit 241-T-152 diversion box. V682 and V683 were spare lines that were cut and capped south of 241-T tank farm, outside the tank farm fence. Line V601 merges with line V445 south of 241-T Tank Farm and shares the same trench until V601 diverts to 241-TX tank farm. Line V416 enters the soil trench from 241-TX tank farm at the point where V601 leaves the trench. South of 241-TX tank farm, line V445 shares the same trench with line V416 until they connect to 241-U-152 diversion box.

Related Sites/Structures: The site is associated with, 200-W-79-PL and 200-W-131-PL. Line V601 is associated with UPR-200-W-29.

Code: 200-W-131-PL**Classification:** Accepted**Names:** 200-W-131-PL; Spur to 241-TX Tank Farm; V601**Reclassification:** None**Type:** Direct Buried Tank Farm Pipeline**Start Date:** 1/1/1944**Status:** Inactive**End Date:**

Description: The site is a 7.6 centimeter (3 inch) diameter, stainless steel pipeline in a soil trench.

Location: The majority of this pipeline is located east of Camden Ave. It connected the 241-T-152 Diversion Box, located inside 241-T Tank Farm, to the 241-U-151 Diversion Box, located east of 241-U Tank Farm. A tee was made to redirect effluent to 241-TX Tank Farm.

Process Description: Line V601 originally connected 241-T-152 and 241-U-151. Line V601 was later cut and rerouted to 241-TX Tank Farm with an east/west pipe spur and a tee connection to 241-TX-153 diversion box. The north portion of the pipeline connected 241-T Tank Farm with 241-TX Tank Farm. The southern portion of the pipeline connected 241-U Tank Farm with 241-TX Tank Farm.

Related Sites/Structures: The site is associated with WIDS site 200-W-130-PL, 241-T-152, 241-T Tank Farm, 241-TX Tank Farm, 241-TX-153 and 241-U Tank Farm.

Code: 200-W-132-PL **Classification:** Accepted

Names: 200-W-132-PL; Pipelines from 221-T to 241-T-151 and 241-T-152; V653, V654, V667, V668, V669, V706, and V707 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:** 1/1/1945

Status: Inactive **End Date:**

Description: Seven, 7.6 centimeter (3 inch) diameter, pipelines are contained in the same soil trench. Three lines -V653, V654 and V706 are 7.6 centimeter (3 inch) diameter stainless steel lines. Four lines - V667, V668, V669 and V707 are 7.6 centimeter (3 inch) diameter carbon steel line. The group of pipelines is marked with Underground Radioactive Material and Pipeline signs.

Location: The bundle of pipelines begins at 221-T and terminates at the 241-T-151 Diversion Box in the 241-T Tank Farm.

Process Description: The pipelines transported T Plant waste to the 241-T-151 and 241-T-152 diversion boxes, inside 241-T Tank Farm. Some of the lines are stainless steel and others are carbon steel. Line V653 is a 3 inch diameter stainless steel line from section 10 of 221-T. Line V654 is a 3 inch diameter stainless steel line from section 9 of 221-T. Line V667 is a 3 inch diameter carbon steel line from section 5 of 221-T. Line V668 is a 3 inch diameter carbon steel line from section 15 of 221-T. Line V669 is a 3 inch diameter carbon steel line from section 15 of 221-T. Line V706 is a 3 inch diameter stainless steel line from 224-T. Line V707 is a 3 inch diameter carbon steel line from section 10 of 221-T.

Code: 200-W-136 **Classification:** Accepted

Names: 200-W-136; Demolished 203-U Area and Contaminated Soil; Underground Radioactive Material Area Including 222-U Building Foundation **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1947

Status: Inactive **End Date:** 1/1/2005

Description: The site is an irregular shaped gravel area, posted with Underground Radioactive Material Area (URMA) signs. The 222-U building foundation is located within the URMA and is not separately marked or posted. The remnants of the demolished 203-U tanks and 272-U Hot Shop are also beneath the URMA gravel cover. The URMA also covers areas of soil contamination created during the facility demolitions.

Location: The site is located east of the 221-U canyon building, northeast of 224-U and southwest of the 291-U exhaust stack. It is west of Beloit Ave.

Process Description: The 222-U building supported the 221-U canyon as a Sample Preparation Laboratory. The function of the laboratory was to test the 221-U process solutions at various stages to verify the process was working within the process specifications. The 203-U tanks were associated with the 224-U facility Uranium Tri-Oxide process. It consisted of a concrete enclosure containing two 375,000 liter (100,000 gallon) uranyl nitrate feed tanks.

Related Sites/Structures: The laboratory building was associated with the 221-U and 224-U facilities, french drains 200-W-107, 200-W-108, 200-W-109, 200-W-111, and the 216-U-4, 216-U4A and 216-U-4B reverse wells.

Code: 200-W-137-PL **Classification:** Accepted
Names: 200-W-137-PL; Line V533; Pipeline from 241-S-151 Diversion Box to 216-S-1 & 2 Cribs **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is an underground pipeline from the 241-S-151 Diversion box to the 216-S-1 & 2 cribs. The pipeline is double contained pipeline. It is constructed of a 8.9 centimeter (3.5 inch), outside diameter 40 gauge stainless steel tubing that is encased in a 15.2 centimeter (6 inch) diameter, schedule 40 steel pipe.
Location: The pipeline and cribs are located east of the 241-SX Tank Farm. A concrete encased portion of the pipeline is located inside the tank farm fence. The double contained pipe to the cribs is located outside the tank farm fence.
Related Sites/ Structures: The pipeline is associated with the 241-S-151 Diversion Box and the 216-S-1&2 cribs.

Code: 200-W-138-PL **Classification:** Accepted
Names: 200-W-138-PL; Pipeline from 240-S-151 to 216-S-7 Crib; V547 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is an underground pipeline, extending from an encased pipeline (200-W-98-PL) to the 216-S-7 Crib. It is a 7.6 centimeter (3 inch) diameter, stainless steel pipe that diverted from the 200-W-98 encasement.
Location: The 216-S-7 crib and associated pipeline are located northwest of the 202-S building.
Process Description: Line V547 extends from the encased pipeline (200-W-98-PL) to 216-S-7.
Related Sites/ Structures: The pipeline is associated with the 216-S-7 crib, the 240-S-151 diversion box and the encased pipeline 200-W-98-PL.

Code: 200-W-139-PL **Classification:** Accepted
Names: 200-W-139-PL; Pipeline from 200-W-138-PL to 216-S-9 Crib; V547 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch), stainless steel pipeline to the 216-S-9 crib.
Location: The pipeline is located northwest of the 202-S facility.
Release Description: UPR-200-W-109 occurred on January 24, 1969. UPR-200-W-109 states that after repairing the buckled portions of the waste line near the 216-S-9 crib, a pressure test indicated another leak in the line. Additional hydrostatic testing finally forced the water to bubble to the surface. It surfaced inside the radiation zone marking the 218-W-9 burial trench. Dose rates of the liquid were 450 mR/hr, but as the water sank back into the soil, the dose rate dropped to 20 mR/hr. Excavation of the liquid bubble site disclosed a vertical buckle in the pipeline with a sizable

break in the line at that point. (RHO-CD-673)

Process Description: When the 216-S-9 crib was built to replace the 216-S-7 crib, the extended pipeline was tied into the 216-S-7 pipeline (see 200-W-138-PL). Line V547 emerges from an encased pipeline (200-W-98-PL).

Related Sites/ Structures: The pipeline is associated with UPR-200-W-109, 216-S-7 and 216-S-9 cribs, 200-W-138-PL, the 200-W-98 encased pipeline and the 240-S-151 diversion box.

Code: 200-W-140-PL **Classification:** Accepted

Names: 200-W-140-PL; Pipeline from 292-T(200-W-40) **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is a 8.9 centimeter (3.5 inch) diameter, stainless steel underground pipeline.

Location: The pipeline is located east of the 221-T building.

Process Description: The original 292-T building (21 feet by 16 feet) housed the 291-T stack gas sampling system.

Description: The waste line from 292-T connected to the pipeline to the 216-T-8 crib (see 200-W-142-PL).

Related Sites/ Structures: The pipeline is associated with the 292-T building (sitecode 200-W-40), the 200-W-142-PL pipeline and 216-T-8 crib.

Code: 200-W-141-PL **Classification:** Accepted

Names: 200-W-141-PL; Pipeline Connecting 200-W-139-PL Pipeline to 216-S-23 Crib; V547 **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground pipeline from the 216-S-9 crib pipeline (200-W-139-PL) to the 216-S-23 pipeline. It is a 15.2 centimeter (6 inch) diameter, concrete lined iron pipe.

Location: The waste site is located northwest of the 202-S facility.

Release Description: UPR-200-W-108 states that on January 8, 1969, during the tie-in of the 216-S-9 Crib waste line to the new 216-S-23 Crib, contaminated water was encountered coming from a break at the junction of the two crib lines. Further excavation disclosed a severe expansion buckle in the line at that point, and a similar buckle in the line near the 202-S Building. There is no way of determining how long the line had been leaking or how much waste was discharged to the ground.

Process Description: When the 216-S-23 crib was built to replace the 216-S-9 crib, the 216-S-23 pipeline was tied into the 216-S-9 pipeline (see 200-W-139-PL). The 216-S-9, 7.6 centimeter (3 inch) diameter, stainless steel pipeline was cut, teed and converted to a 15.2 (6 inch) diameter concrete lined iron pipe with flanges for the 216-S-23 crib waste. Line V547 extends from the encased pipeline (200-W-98-PL).

Related Sites/ Structures: The site is associated with UPR-200-W-108, 240-S-151 diversion box, 200-W-98-PL, 216-S-9 crib, 216-S-23 crib and 200-W-139-PL pipeline.

Code: 200-W-142-PL **Classification:** Accepted
Names: 200-W-142-PL; Pipeline from 222-T to 216-T-8 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The site is an underground, 8.9 centimeter (3.5 inch) diameter, stainless steel pipeline.
Location: The pipeline extends southward from the 222-T building.
Process Description: 222-T laboratory waste was sent to the 216-T-8 crib via this pipeline. In 1949, the effluent line from 292-T (sitecode 200-W-140-PL) was also connected to this crib pipeline.
Related Sites/ Structures: The pipeline is associated with the 222-T building and 292-T (sitecodes 200-W-40 and 200-W-140-PL).

Code: 200-W-143-PL **Classification:** Accepted
Names: 200-W-143-PL; Encased Pipeline from 241-TX-154 Diversion Box to 241-TX-152 and 241-TX-155 Diversion Boxes; Lines V383, V384, V385, V387, V388, V391, V392, and V393 **Reclassification:** None
Type: Encased Tank Farm Pipeline **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, concrete encased pipeline. The pipelines inside the encasement are 9 centimeter (3.5 inch) diameter stainless steel lines. The majority of the encasement contains seven stainless steel pipelines (V383, V384, V385, V387, V388, V391, V392). There is a section of nine stainless steel lines near the 241-TX-154 Diversion Box. This section contains the seven lines (mentioned above) and two, short stub lines - V728 and V729. The section of pipeline near the 241-TX-155 Diversion Box contains ten lines. This section contains the seven main lines (mentioned above), an extra line from the 241-TX-302B catch tank (V393) and two short stub lines (V390 and V386).
Location: The encased pipeline begins at the 241-TX-154 Diversion Box. It runs diagonally south of 23rd Street and terminates at the 241-TX-155 Diversion Box.
Related Sites/ Structures: The site is associated with the 221-T facility operations, the 241-TX-154 diversion box and the 241-TX-152 and 241-TX-155 Diversion Boxes.

Code: 200-W-144 **Classification:** Discovery
Names: 200-W-144; Room 4E 222-S Laboratory TSD **Reclassification:** None
Type: Storage **Start Date:**
Status: Active **End Date:**
Description: The TSD is located inside the 222-S building, in Room 4E.

Code: 200-W-145 **Classification:** Not Accepted (Proposed)
Names: 200-W-145; Hidden Wells South of U-Plant; U Plant Dry Wells **Reclassification:** None

Type: French Drain **Start Date:**

Status: Inactive **End Date:**

Description: Multiple (more than twenty) concrete dry wells were found in an undeveloped area south of U Plant on the west side of Beloit Ave. The open concrete wells ranged in size from 91.4 centimeters (36 inches) to 106.6 centimeters (42 inches) in diameter. The estimated depths are greater than 1.8 meters (6 feet).

Location: The wells are located south of 16th Street, west of Beloit Ave and southeast of 224-U.

Process Description: A few aerial photographs from the early 1950's indicate a group of temporary construction facilities were located in this area. They apparently were connected to raw water and potable water utilities. They may also have had a buried steam distribution system. Drawings H-2-43235, dated 1951, and H-2-1496, dated 1952 show the plan and profile for the 200 West Area steam distribution system. The drawings indicate a steam connection to temporary construction facilities southeast of U Plant. A 2006 field inspection found one caisson that was open and empty enough to reveal several small diameter pipelines entering the concrete caisson wall approximately 1.2 meters (4 feet) below the ground surface. This supports the concept that they were part of an underground infrastructure system. More open wells were identified in 2010.

Waste Type: Steam Condensate

Waste Description: Drawings H-2-43235, dated 1951, and H-2-1496, dated 1952 show the plan and profile for the 200 West Area steam distribution system. The drawings indicate a steam connection to temporary construction facilities southeast of U Plant.

Code: 200-W-146-PL **Classification:** Accepted

Names: 200-W-146-PL; 216-S-22 Crib Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:** 1/1/1957

Status: Inactive **End Date:** 1/1/1967

Description: The pipeline is a 10 centimeter (4 inch) diameter, vitrified clay pipe.

Location: The pipeline extends from the 293-S building to the 216-S-22 crib. It is located east of the 202-S (REDOX) building.

Process Description: The site provided subsurface liquid disposal for the 293-S Building waste. The crib is a gravel structure with a side slope of 1:1.5. A pipe enters the unit below grade, branches out at right angles downwards to the bottom, and runs along the bottom for the length of the unit. The section of pipe along the crib bottom has open joints. The rest of structure is filled with backfill.

Related Sites/ Structures: The pipeline is associated with the 216-S-22 crib.

Code: 200-W-149-PL **Classification:** Accepted

Names: 200-W-149-PL; Pipelines Related to 216-S-20 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: There are three source facilities that fed the 216-S-20 crib. Each source had separate pipelines to the crib. Two, side by side, 9 centimeter (3.5 inch) diameter stainless steel lines extends from 219-S to the 216-S-20 Crib. One 20 centimeter (8 inch) diameter, carbon steel line extends

from the 207-SL Retention Basin valve pit to the 216-S-20 Crib. Another 15 centimeter (6 inch) diameter carbon steel pipeline extends from the truck unloading station to the 216-S-20 crib. (see subsites)

Location: The 216-S-20 crib and associated pipelines are located northeast of the 222-S laboratory and 207-SL Retention Basin.

Process Description: The 216-S-20 crib received waste from lab hoods and decontamination sinks in the 222-S building via the 219-S Retention Building and the 207-SL Retention Basin. It also received 300 Area laboratory waste via trucks, unloaded into the manhole at the adjacent waste unloading station.

Related Sites/ Structures: The 216-S-20 crib effluent was associated with the 219-S building, the 207-SL Retention Basin and the lab waste truck unloading station.

This Site has the Following SubSites:

Code: 200-W-149-PL:1

Names: 200-W-149-PL:1; Two Stainless Steel Lines from 219-S to 216-S-20 Crib

Code: 200-W-149-PL:2

Names: 200-W-149-PL:2; 8-Inch Diameter Carbon Steel Line from 207-SL Retention Basin to 216-S-20 Crib

Code: 200-W-149-PL:3

Names: 200-W-149-PL:3; 8-Inch Diameter Carbon Steel Line from Lab Waste Truck Unloading Station to the 216-S-20 Crib

Code: 200-W-149-PL:1

Classification: Accepted

Names: 200-W-149-PL:1; Two Stainless Steel Lines from 219-S to 216-S-20 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Two, side by side, 9 centimeter (3.5 inch) diameter stainless steel lines extends from 219-S to the 216-S-20 Crib.

The SubSite is Part Of:

Code: 200-W-149-PL

Names: 200-W-149-PL; Pipelines Related to 216-S-20 Crib

Code: 200-W-149-PL:2

Classification: Accepted

Names: 200-W-149-PL:2; 8-Inch Diameter Carbon Steel Line from 207-SL Retention Basin to 216-S-20 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: One 20 centimeter (8 inch) diameter, carbon steel line extends from the 207-SL Retention Basin valve pit to the 216-S-20 Crib.

The SubSite is Part Of:

Code: 200-W-149-PL

Names: 200-W-149-PL; Pipelines Related to 216-S-20 Crib

Code: 200-W-149-PL:3 **Classification:** Accepted
Names: 200-W-149-PL:3; 8-Inch Diameter Carbon Steel Line from Lab Waste Truck Unloading Station to the 216-S-20 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: One 15 centimeter (6 inch) diameter carbon steel pipeline extends from the truck unloading station to the 216-S-20 crib.

The SubSite is Part Of:

Code: 200-W-149-PL
Names: 200-W-149-PL; Pipelines Related to 216-S-20 Crib

Code: 200-W-150-PL **Classification:** Accepted
Names: 200-W-150-PL; Pipelines Associated with 216-S-13 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is a series of pipelines extending from the 205-S, 204-S, 203-S and 267-S facilities to the 216-S-13 Crib.
Location: The 203-S, 204-S, 205-S, 276-S and associated pipelines are located northwest of the 202-S (REDOX) facility.
Related Sites/ Structures: The pipelines are associated with the REDOX process, the 203-S, 204-S, 205-S and 276-S buildings and WIDS site 200-W-22 Stabilized Area.

This Site has the Following SubSites:

Code: 200-W-150-PL:1
Names: 200-W-150-PL:1; Pipeline from 276-S to the 216-S-13 Crib
Code: 200-W-150-PL:2
Names: 200-W-150-PL:2; Pipeline from 203-S Connecting to the 276-S Crib Line
Code: 200-W-150-PL:3
Names: 200-W-150-PL:3; Pipeline from 204-S Connecting to the 203-S Line
Code: 200-W-150-PL:4
Names: 200-W-150-PL:4; Pipeline from the 205-S Vault Connecting to the 204-S Line

Code: 200-W-150-PL:1 **Classification:** Accepted
Names: 200-W-150-PL:1; Pipeline from 276-S to the 216-S-13 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline extends from the 276-S building to the 216-S-13 crib. It is constructed of 15 centimeter (6 inch) diameter vitrified clay pipe, wrapped in concrete.

The SubSite is Part Of:

Code: 200-W-150-PL
Names: 200-W-150-PL; Pipelines Associated with 216-S-13 Crib

Code: 200-W-150-PL:2 **Classification:** Accepted
Names: 200-W-150-PL:2; Pipeline from 203-S **Reclassification:** None
Connecting to the 276-S Crib Line
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is constructed of 10 centimeter (4 inch) diameter vitrified clay pipe wrapped in concrete. It extends southward from the 203-S building and connects to the 15 centimeter (6" inch) line going to the 216-S-13 crib. (see subsite 1)

The SubSite is Part Of:

Code: 200-W-150-PL
Names: 200-W-150-PL; Pipelines Associated with 216-S-13 Crib

Code: 200-W-150-PL:3 **Classification:** Accepted
Names: 200-W-150-PL:3; Pipeline from 204-S **Reclassification:** None
Connecting to the 203-S Line
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline extends from the 204-S building It is constructed of 15 centimeter (6 inch) diameter vitrified clay pipe, wrapped in concrete. It connects to the pipeline coming out of 203-S (See subsite 2).

The SubSite is Part Of:

Code: 200-W-150-PL
Names: 200-W-150-PL; Pipelines Associated with 216-S-13 Crib

Code: 200-W-150-PL:4 **Classification:** Accepted
Names: 200-W-150-PL:4; Pipeline from the 205-S Vault **Reclassification:** None
Connecting to the 204-S Line
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The pipeline is constructed of 10 centimeter (4 inch) diameter vitrified clay pipe wrapped in concrete. It extends southeast from the 205-S building and connects to the 15 centimeter (6" inch) line coming out of the 204-S facility. (see subsite 3).

The SubSite is Part Of:

Code: 200-W-150-PL
Names: 200-W-150-PL; Pipelines Associated with 216-S-13 Crib

Code: 200-W-151-PL **Classification:** Accepted
Names: 200-W-151-PL; 200-W-42 Pipe Remaining **Reclassification:** None
Under 16th Street
Type: Radioactive Process Sewer **Start Date:**

Status: Inactive

End Date:

Description: The piece of pipeline remaining under 16th Street is not visible.

Location: The pipe is located southeast of the 224-UA building, beneath the 16th Street asphalt.

Process Description: WIDS sitecode 200-W-42 is the underground vitrified clay pipeline transferred process condensate from the 221-U and 224-U Buildings and the 291-U Stack to the 216-U-8 and 216-U-12 Cribs.

Related Sites/ Structures: The site is associated with the 221-U and 224-U facilities and the pipeline that fed 216-U-8 and 216-U-12 cribs (see sitecode 200-W-42) and the encased tank farm line 200-W-100-PL.

Waste Type: Process Effluent

Waste Description: From 1952 to 1960, the line transferred waste from 221-U, 224-U and 291-U to the 216-U-8 crib. The 216-U-12 crib replaced the 216-U-8 crib in 1960. The pipeline was extended further south to the 216-U-12 location. From April 1960 to May 1967, the pipeline received waste from the 291-U-1 Stack drainage, 241-WR Vault waste, and 224-U process condensate via C-5 Tank. Disposal of contaminated water from 241-WR Vault was accomplished in October 1965 and included 3.14 kilograms (6.9 pounds) of thorium. From May 1967 to September 1972, the site received the above wastes excluding the 241-WR Vault waste and occasional waste via the C-7 Tank in the 244-U Building. From September 1972 to November 1981, the site was taken out of service. After November 1981, the pipeline received process condensate (corrosive: typical pH range is 0.5-1.5) from the 224-U Building. In the past, this facility also received miscellaneous storm drain wastes from 224-U. A Limited Field Investigation was done in 1994 to characterize selected waste sites in the 200-UP-2 Operable Unit. Fourteen surface and subsurface soil samples along with four vegetation samples were collected to characterize the vitrified clay pipeline (VCP) leading to the 216-U-8 Crib. An attempt was made to determine if the contamination had spread laterally from the pipeline by digging holes with an auger rig where subsurface contamination had been identified. An increase in activity was noted at approximately 3 meters (10 feet). At a depth of 3.3 meters (11 feet) the auger was stopped by large cobbles. The samples were analyzed for cesium-137, strontium-90, gross alpha and gross beta. Specific sample data is documented in BHI-00033.

Code: 200-W-152-PL

Classification: Accepted

Names: 200-W-152-PL; 207-S Retention Basin and 216-S-17 Pond; Pipeline from 202-S to 2904-S-170; REDOX Process Sewer

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site is an underground, 61 centimeter (24 inch) diameter vitrified clay pipe that begins at the 202-S (REDOX) building. The pipeline is not visible, but a metal sample shack is located over the western end, above the 2904-S-170 control structure. Seven manholes are visible on the surface along the pipeline.

Location: The pipeline is located west and southwest of the 202-S (REDOX) building.

Process Description: The pipeline carried liquid waste from the REDOX facility to the 2904-S-170 control structure, before it was sent to the liquid waste disposal sites (207-S, 216-S-16, 216-S-17)

Related Sites/ Structures: The pipeline was associated with 202-S (Redox building), 207-S Retention Basin, 216-S-17 Pond, and 2904-S-170.

Code: 200-W-153-PL **Classification:** Accepted
Names: 200-W-153-PL; Steel Pipeline from 240-S-151 Diversion Box to the 2904-S-172 and 2904-S-171 Control Structures **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground a 25 centimeter (10 inch) diameter steel pipeline to the 2904-S-172 Control Structure and a short 30 centimeter (12 inch) diameter pipeline that exits the south side of the Control Structure and connects to the 61 centimeter VCP line (sitecode 200-W-152-PL). See subsites 1 and 2.
Location: The pipeline begins inside the 200 West Area, at the 240-S-151 Diversion Box, northwest of the 202-S building. It extends in a southwesterly direction, extending outside the 200 West Perimeter fence, to the 2904-S-172 and 241-S-171 Control Structures.
Related Sites/ Structures: The pipeline is associated with 240-S-151, 2904-S-172, 2904-S-171 and pipeline 200-W-212-PL.

This Site has the Following SubSites:

Code: 200-W-153-PL:1
Names: 200-W-153-PL:1; Pipeline from 240-S-151 to 2904-S-172
Code: 200-W-153-PL:2
Names: 200-W-153-PL:2; Pipeline from 2904-S-172 to 216-S-17 Pond

Code: 200-W-153-PL:1 **Classification:** Accepted
Names: 200-W-153-PL:1; Pipeline from 240-S-151 to 2904-S-172 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: A 25 centimeter (10 inch) diameter underground steel pipeline from the 240-S-151 Diversion Box to the 2904-S-172 Control Structure and continues to the 2904-S-171 Control Structure.

The SubSite is Part Of:

Code: 200-W-153-PL
Names: 200-W-153-PL; Steel Pipeline from 240-S-151 Diversion Box to the 2904-S-172 and 2904-S-171 Control Structures

Code: 200-W-153-PL:2 **Classification:** Accepted
Names: 200-W-153-PL:2; Pipeline from 2904-S-172 to 216-S-17 Pond **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: A 30 centimeter (12 inch) diameter steel pipeline that exits the south side of the Control Structure and connects to the 61 centimeter (24 inch) VCP line (sitecode 200-W-152-PL).

The SubSite is Part Of:

Code: 200-W-153-PL
Names: 200-W-153-PL; Steel Pipeline from 240-S-151 Diversion Box to the 2904-S-172 and 2904-S-171

Control Structures

Code: 200-W-154-PL **Classification:** Accepted

Names: 200-W-154-PL; Pipeline from 200-W-152-PL to 216-S-5 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground 61 centimeter (24 inch) diameter vitrified clay pipeline that feeds the 216-S-5 crib. The pipeline connects to the 200-W-152-PL.

Location: The pipeline is located outside the 200 West Area perimeter fence, southwest of 207-S.

Process Description: The 216-S-5 crib was built as a replacement for the grossly contaminated 216-S-17 pond. The 216-S-5 crib received the process vessel cooling water and steam condensate from the 202-S (REDOX) building.

Related Sites/ Structures: The site is associated with the REDOX cooling water effluent stream (202-S Redox Building) and the 200-W-152-PL pipeline and the 216-S-5 Crib.

Code: 200-W-155-PL-A **Classification:** Accepted

Names: 200-W-155-PL-A; Portion of 200-W-155-PL Pipeline in the Outer Area **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site (200-W-155-PL) has been split into segments (200-W-155-PL-A and 200-W-155-PL-B). The original pipeline was an underground 61 centimeter (24 inch) diameter vitrified clay pipe. It extends from the 2904-S-160 Control Structure to the head end of the 216-S-16 Ditch. 200-W-155-PL-A is the portion of the pipeline that is located in the Central Plateau Outer Area.

Location: This portion of pipeline extends from the Inner/Outer Area boundary to the head end of the 216-S-16 Ditch.

Process Description: In 1954, the original 61 centimeter (24 inch) process sewer line (sitecode 200-W-152-PL) was plugged and the flow to the 216-S-17 Pond was abandoned. The effluent was directed to the 216-S-6 crib and later to the 216-S-16 Pond via the 2904-S-160 Control Structure. Flow could be directed to 216-S-6 crib at Manhole 8 via pipeline 200-W-156-PL or to the 216-S-16 Ditch and Pond via pipeline 200-W-155-PL-A and B.

Related Sites/ Structures: The waste site is associated with the 216-S-16 ditch and the 200-W-155-PL-B pipeline.

Code: 200-W-155-PL-B **Classification:** Accepted

Names: 200-W-155-PL-B; Portion of Pipeline 200-W-155-PL that is located in the Central Plateau Inner Area **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive

End Date:

Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site (200-W-155-PL) has been split into segments. It extends from the 2904-S-160 Control Structure to the Inner/Outer Area boundary. 200-W-155-PL-B is the portion of the pipeline that is located in the Central Plateau Inner Area. The original pipeline was an underground 61 centimeter (24 inch) diameter vitrified clay pipe.

Location: 200-W-155-PL-B is the portion of pipeline that extends from the 2904-S-160 Control Structure to the Inner/Outer Area boundary.

Process Description: In 1954, the original 61 centimeter (24 inch) process sewer line (sitecode 200-W-152-PL) was plugged and the flow to the 216-S-17 Pond was abandoned. The effluent was directed to the 216-S-6 crib and later to the 216-S-16 Pond via the 2904-S-160 Control Structure. Flow could be directed to 216-S-6 crib at Manhole 8 via pipeline 200-W-156-PL or to the 216-S-16 Ditch and Pond via pipeline 200-W-155-PL-A and B.

Related Sites/ Structures: The waste site is associated with the 2904-S-160 control Structure and the 200-W-155-PL-A pipeline.

Code: 200-W-156-PL

Classification: Accepted

Names: 200-W-156-PL; 216-S-6 Crib Pipeline; Pipeline from 200-W-155-PL to the 2904-S-171 Control Structure

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground 46 centimeter (18 inch) diameter vitrified clay pipeline extending from Manhole 8 on the 200-W-155-PL pipeline to the 2904-S-171 Control Structure and the 216-S-6 crib.

Location: The pipeline is located outside the 200-West Area fence, southwest of the 202-S (REDOX) building.

Process Description: This 216-S-6 crib operated from November 1954 to July 1972. The crib was constructed as part of the Segregation Project. REDOX effluent with a high potential for contamination was diverted to the 216-S-6 Crib. Effluent with a low potential for contamination was sent to the 216-S-5 Crib.

Related Sites/ Structures: The pipeline is associated with 200-W-155-PL, 200-W-153-PL, 2904-S-171 Control Structure and the 216-S-6 crib.

Code: 200-W-157-PL

Classification: Accepted

Names: 200-W-157-PL; Pipeline from 202-S to 200-W-152-PL; Pipeline from 205-S to REDOX Chemical Sewer; REDOX Chemical Sewer

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The site is an underground vitrified clay pipeline with diameters of 20 centimeters (8 inch) and 30 centimeters (12 inch). A 10 centimeter (4 inch) diameter vitrified clay pipe extends from the 205-S building to the main chemical sewer line.

Location: the south side of 211-S and south of the 205-S building. The chemical sewer extends beyond the 200 West Area fence, southwest of 202-S.

Process Description: The REDOX chemical sewer connected to manhole number 3, southwest of 202-S. It

Description: connected to the 216-S-10 ditch at Manhole number 2.

Related Sites/ Structures: The waste site is associated with the 216-S-10 ditch and pond and the REDOX process sewer (sitecode 200-W-152-PL).

This Site has the Following SubSites:

Code: 200-W-157-PL:1

Names: 200-W-157-PL:1; REDOX Chemical Sewer Line from 202-S to REDOX Process Sewer (Sitecode 200-W-152-PL)

Code: 200-W-157-PL:2

Names: 200-W-157-PL:2; 10-Centimeter (4-Inch) VCP Chemical Sewer Line from 205-S

Code: 200-W-157-PL:1

Classification: Accepted

Names: 200-W-157-PL:1; REDOX Chemical Sewer Line from 202-S to REDOX Process Sewer (Sitecode 200-W-152-PL)

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: An underground vitrified clay pipeline with diameters of 20 centimeters (8 inch) and 30 centimeters (12 inch).

The SubSite is Part Of:

Code: 200-W-157-PL

Names: 200-W-157-PL; Pipeline from 202-S to 200-W-152-PL; Pipeline from 205-S to REDOX Chemical Sewer; REDOX Chemical Sewer

Code: 200-W-157-PL:2

Classification: Accepted

Names: 200-W-157-PL:2; 10-Centimeter (4-Inch) VCP Chemical Sewer Line from 205-S

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive

End Date:

Description: A 10 centimeter (4 inch) diameter vitrified clay pipe extends from the 205-S building to the main chemical sewer line.

The SubSite is Part Of:

Code: 200-W-157-PL

Names: 200-W-157-PL; Pipeline from 202-S to 200-W-152-PL; Pipeline from 205-S to REDOX Chemical Sewer; REDOX Chemical Sewer

Code: 200-W-158-PL

Classification: Accepted

Names: 200-W-158-PL; Pipeline from 293-S to 200-W-152-PL

Reclassification: None

Type: Process Sewer

Start Date:

Status: Inactive **End Date:**

Description: The waste site is an underground 20 centimeter (8 inch diameter) vitrified clay pipeline from the 293-S building to the 200-W-152-PL pipeline. It connects to the REDOX Process Sewer (200-W-152-PL) on the south side of 202-S at Manhole number 4.

Location: The pipeline is located east and south of 202-S.

Related Sites/ Structures: The pipeline is associated with the 293-S building and the REDOX Process Sewer (sitecode 200-W-152-PL).

Code: 200-W-159-PL **Classification:** Accepted

Names: 200-W-159-PL; Cooling Water Lines from 241-SX-401 and 241-SX-402 to 216-U-10 Pond **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two 20 centimeter (8 inch) diameter, underground carbon steel pipelines that carried cooling water from the 241-SX-401 and 241-SX-402 Condenser Shielding buildings to the 216-U-10 Pond.

Location: The pipelines begin inside the 241-SX tank farm at the 241-SX-401 and 241-SX-402 buildings. They cross Cooper Ave. and run west, north of the 216-S-21 crib.

Related Sites/ Structures: The site is associated with 241-SX-401, 241-SX-402 and 216-U-10 Pond.

Code: 200-W-160-PL **Classification:** Accepted

Names: 200-W-160-PL; Pipeline from 241-SX-401 and 241-SX-402 to 216-S-21 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground, 20 centimeter (8 inch) diameter, carbon steel pipeline.

Location: The pipeline begins inside the 241-SX tank farm at the 241-SX-401 and 241-SX-402 buildings. It crosses Cooper Ave and terminates at the 216-S-21 crib.

Process Description: The pipeline carried condensate from the 241-SX-401 and 241-SX-402 Condensate Shielding buildings to the 216-S-21 crib.

Related Sites/ Structures: The pipeline is associated with the 241-SX-401 and 241-SX-402 buildings and the 216-S-21 crib.

Code: 200-W-161-PL **Classification:** Accepted

Names: 200-W-161-PL; Line 557; Pipeline from 242-S to 216-S-25 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 10 centimeter (4 inch) diameter, carbon steel pipeline.

Location: The pipeline extends south of the 242-S Evaporator. It crosses under Cooper Ave. and

terminates at the 216-S-25 crib. The 216-S-25 crib is located west of the 200 West Area perimeter fence.

Process Description: The pipeline carried process steam condensate from the 242-S Evaporator to the 216-S-25 crib.

Related Sites/ Structures: The pipeline is associated with the 242-S Evaporator and the 216-S-25 crib.

Code: 200-W-162-PL **Classification:** Accepted

Names: 200-W-162-PL; Pipeline from 241-SX-701 to 216-SX-2 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground, 15 centimeter (6 inch) diameter, vitrified clay pipe.

Location: The pipeline is located south of the 241-S Evaporator building. It extends from the south side of the 241-SX-701 building to the 216-SX-2 crib. The pipeline, building and crib are located west of the 241-SX Tank Farm fence.

Related Sites/ Structures: The pipeline is associated with the 241-SX-701 building and the 241-SX-2 crib.

Code: 200-W-163-PL **Classification:** Accepted

Names: 200-W-163-PL; T Plant Process Sewer; 18-Inch 221-T Process Sewer Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 46 centimeter (18 inch) diameter vitrified clay pipeline. Several manholes are visible at the surface. Feed lines are listed as subsites.

Location: The pipeline extends westward from T Plant and connects to the pipeline that fed the 216-T-4 ditch (see sitecode 200-W-164-PL).

Related Sites/ Structures: The pipeline is associated with 200-W-9, 221-T, 224-T and the 216-T-4 ditch.

This Site has the Following SubSites:

Code: 200-W-163-PL:1

Names: 200-W-163-PL:1; 18-Inch and 12-Inch Vitrified Clay Pipeline from 221-T to 216-T-4 Ditch

Code: 200-W-163-PL:2

Names: 200-W-163-PL:2; 8-Inch Carbon Steel Line from 271-T to Main 18-Inch VCP Process Sewer Pipeline

Code: 200-W-163-PL:3

Names: 200-W-163-PL:3; 222-T and 224-T Connecting to Main 18-Inch VCP Process Sewer Line; Carbon Steel Pipeline from 291-T

Code: 200-W-163-PL:1 **Classification:** Accepted

Names: 200-W-163-PL:1; 18-Inch and 12-Inch Vitrified Clay Pipeline from 221-T to 216-T-4 Ditch **Reclassification:** None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The pipeline is constructed of 18 inch VCP from the manhole westward to the 216-T-4 ditch.
The pipeline is constructed of 12 inch VCP along the edge of 221-T.

The SubSite is Part Of:

Code: 200-W-163-PL

Names: 200-W-163-PL; T Plant Process Sewer; 18-Inch 221-T Process Sewer Pipeline

Code: 200-W-163-PL:2

Classification: Accepted

Names: 200-W-163-PL:2; 8-Inch Carbon Steel Line from 271-T to Main 18-Inch VCP Process Sewer Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-163-PL

Names: 200-W-163-PL; T Plant Process Sewer; 18-Inch 221-T Process Sewer Pipeline

Code: 200-W-163-PL:3

Classification: Accepted

Names: 200-W-163-PL:3; 222-T and 224-T Connecting to Main 18-Inch VCP Process Sewer Line; Carbon Steel Pipeline from 291-T

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-163-PL

Names: 200-W-163-PL; T Plant Process Sewer; 18-Inch 221-T Process Sewer Pipeline

Code: 200-W-164-PL

Classification: Accepted

Names: 200-W-164-PL; Pipeline from 207-T Retention Basin to the 216-T-4 Ditch

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground 61 centimeter (24 inch) diameter vitrified clay pipe.

Location: The pipeline extends from the west side of the 207-T Retention Basin, diagonally northwest, to the 216-T-4 ditch.

Related Sites/ Structures: The site is associated with the 207-T Retention Basin, the 216-T-4-1 and 216-T-4-2 ditches and the 45 centimeter (18 inch) pipeline from T Plant (see sitecode 200-W-163-PL).

Code: 200-W-165-PL

Classification: Accepted

Names: 200-W-165-PL; Pipeline from Tank 241-TX-112 to 207-T Retention Basin

Reclassification: None

Description: buried in the same soil trench. Both lines originate at the 241-U-110 tank. One line extends to the 216-U-3 crib. The other line diverts to the 216-U-14 ditch.

Location: The pipeline is located east of the corner of 16th Street and Cooper Ave. The pipeline extends southward from the 241-U-110 tank, inside the 241-U Tank Farm, to the 216-U-3 crib. The 216-U-3 crib is located south of the 241-U tank farm. The pipeline crosses under 16th Street.

Related Sites/ Structures: The pipeline is associated with the 241-U-110 tank and the 216-U-3 crib.

This Site has the Following SubSites:

Code: 200-W-168-PL:1

Names: 200-W-168-PL:1; Pipeline from 241-U-110 to 216-U-3 Crib

Code: 200-W-168-PL:2

Names: 200-W-168-PL:2; Pipeline from 241-U-110 to the 216-U-14 Ditch

Code: 200-W-168-PL:1

Classification: Accepted

Names: 200-W-168-PL:1; Pipeline from 241-U-110 to 216-U-3 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-168-PL

Names: 200-W-168-PL; 216-U-3 Crib and 216-U-14 Ditch Pipelines

Code: 200-W-168-PL:2

Classification: Accepted

Names: 200-W-168-PL:2; Pipeline from 241-U-110 to the 216-U-14 Ditch

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-168-PL

Names: 200-W-168-PL; 216-U-3 Crib and 216-U-14 Ditch Pipelines

Code: 200-W-169-PL

Classification: Accepted

Names: 200-W-169-PL; Pipeline Between 216-U-10 Pond and 216-U-11 Overflow

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 46 centimeter (18 inch) diameter, corrugated metal pipe.

Location: The pipeline is located southwest of the corner of 16th Street and Dayton Ave. It extends westward from the northwest corner of the 216-U-10 pond to the 216-U-11 trench. The pipeline crosses under Dayton Ave.

Process Description: The pipeline transferred 216-U-10 Pond water to the 216-U-11 trench.

**Related Sites/
Structures:**

Code: 200-W-170-PL **Classification:** Accepted
Names: 200-W-170-PL; 216-U-16 Crib Pipeline **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 30.5 centimeter (12 inch) diameter, polyvinyl chloride pipe.
Location: The pipeline is located south of 16th Street. The vitrified clay crib pipe attaches to the U Plant Process Sewer (sitecode 200-W-84).
**Related Sites/
Structures:** The pipeline is associated with the U Plant Process Sewer (200-W-84-PL) and the 216-U-16 crib.

Code: 200-W-171 **Classification:** Accepted
Names: 200-W-171; 200-W-219-PL Line Leak; Leak from 234-5Z Pipe Trench to 241-Z Tank D-6 **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/1969
Status: Inactive **End Date:**
Description: The concrete pipe trench is a subsurface feature extending from 234-5Z to 241-Z (see sitecode 200-W-219-PL).
Location: The release occurred in the pipe trench located south of 234-5Z that extended to the 241-Z tank enclosure.
**Release
Description:** ARH-1048 states that on 2/18/69, approximately 114,000 liters (30,000 gallons) was sent to the 241-Z D-6 tank but it never got to the tank. To help find the cause of the unaccounted waste, water from 880 room 19 (button line) and the incinerator was sent to the D-6 tank. Only the water from the incinerator reached the D-6 tank, indicating a leak in the common waste line from 880 and the button line. Further checks showed that the concrete trench was cracked and the sump pipe was broken near the north side of the road.

**Related Sites/
Structures:** The release is associated with pipeline 200-W-219-PL.

Waste Type: Water
**Waste
Description:** Based on available plant records, leakage into the pipe trench ranged from 11,400 liters (3,000 gallons) to 114,000 liters (30,000 gallons) containing between 3 and 30 grams of plutonium.

Code: 200-W-172 **Classification:** Accepted
Names: 200-W-172; Liquid Leaking from Drain Laterals Below 234-5Z Floor Slab **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is a series of underground pipes. Secondary drain laterals conveyed liquid from various points in the 234-5Z building to the main drain lines in the subsurface pipe tunnels. Visual observations in the pipe tunnels revealed little evidence of substantial leakage.
Location: The release location is the soil underneath the 234-5Z building.

Location:

Process Fifty-two side lateral pipes conveyed process liquids into the main 234-5Z tunnel drain lines.
Description: Approximately fifteen lateral lines appear to have possibly leaked.

Related Sites/ Structures: The release is associated with the Plutonium Finishing Plant processes.

Waste Type: Process Effluent
Waste Description: Small pipe leaks in the tunnels over time may have accumulated a quantity of less than 3 grams of plutonium.

Code: 200-W-173-PL **Classification:** Accepted
Names: 200-W-173-PL; 216-T-33 Crib Pipeline; Pipeline from 2706-T to 216-T-33 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The majority of the waste site is an underground, 20 centimeter (8 inch) diameter, vitrified clay pipeline that fed the 216-T-33 crib. A portion of the pipeline from 2706-T to the weir pit is an underground 15 centimeter (6 inch diameter) vitrified clay pipe.
Location: The pipeline is located west of 221-T and south of 2706-T.
Process Description: The 2706-T facility decontaminated vehicles, rail cars and large pieces of equipment. Water containing chemicals and radionuclide contamination went down the facility drains.

Code: 200-W-174-PL **Classification:** Accepted
Names: 200-W-174-PL; 216-Z-1A Modified Pipeline; Lines 1035 and 1036; Pipelines from 234-5Z to 216-Z-1A and 216-Z-18 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is two parallel underground, 5 centimeter (2 inch) diameter stainless steel lines that diverted from a concrete encasement to feed 216-Z-1A and the 216-Z-18 crib. This pipeline bypassed the 241-Z-361 settling tank. The line numbers are 1035 and 1036.
Location: The pipeline extends south from the 234-5Z facility to the 216-Z-1A tile field. Part of the pipeline is located inside the PFP security fence and part is located outside the security fence.
Release Description: See UPR-200-W-103
Process Description: Lines 1035 and 1036 divert out of a concrete encasement that connected 242-Z with 234-5Z. Lines 1035 and 1036 bypass the 216-Z-1, 216-Z-2 and 216-Z-3 cribs and route the waste directly into the 216-Z-1A tile field (see subsite 1). Later the effluent was directed to the 216-Z-18 crib (see subsite 2).

Related Sites/ Structures: The waste lines are associated with 234-5Z and 216-Z-1A and 216-Z-18.

This Site has the Following SubSites:

Code: 200-W-174-PL:1
Names: 200-W-174-PL:1; Parallel Pipelines from 242-Z/234-5Z to 216-Z-1A
Code: 200-W-174-PL:2
Names: 200-W-174-PL:2; Re-Routed Pipeline to 216-Z-18 Crib

Code: 200-W-174-PL:1 **Classification:** Accepted
Names: 200-W-174-PL:1; Parallel Pipelines from 242-Z/234-5Z to 216-Z-1A **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: two 2 inch diameter SST lines (1035 and 1036) divert out of concrete encasement

The SubSite is Part Of:

Code: 200-W-174-PL
Names: 200-W-174-PL; 216-Z-1A Modified Pipeline; Lines 1035 and 1036; Pipelines from 234-5Z to 216-Z-1A and 216-Z-18 Crib

Code: 200-W-174-PL:2 **Classification:** Accepted
Names: 200-W-174-PL:2; Re-Routed Pipeline to 216-Z-18 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: 3 inch diameter SST

The SubSite is Part Of:

Code: 200-W-174-PL
Names: 200-W-174-PL; 216-Z-1A Modified Pipeline; Lines 1035 and 1036; Pipelines from 234-5Z to 216-Z-1A and 216-Z-18 Crib

Code: 200-W-147-PL-B **Classification:** Accepted
Names: 200-W-147-PL-B; Portion of Pipeline in the 200 West Inner Area **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: Due to the restructuring of Operable Units, as described in the Agreement for Central Plateau Cleanup, the original pipeline site (200-W-147-PL) has been split into segments. It was an underground 20 centimeter (8 inch) diameter vitrified clay pipe, extending from the 207-SL retention basin to the 216-S-19 pond. 200-W-147-PL-B is the portion of pipeline that extends from the 207-SL basin to the Outer Area boundary.
Location: This portion of pipeline is located east of the 222-S laboratory facility, inside 200 West Area, in the Inner Area. It extends from the 207-SL basin to the Inner/Outer Area boundary.
Process Description: The pipeline carried waste from the 222-S and 202-S facilities to the 216-S-19 Pond and 216-S-26 crib via the 207-SL Retention Basin.

Related Sites/ This portion of pipeline is associated with the 207-SL basin, 216-S-19 Pond, 216-S-26 crib and

Structures: 200-W-147-PL-A.

Code: 200-W-175-PL **Classification:** Accepted

Names: 200-W-175-PL; Line V681; Pipeline to Route Waste from 241-T-112 to 216-TY-201 Flush Tank and 216-T-26, 216-T-27 and 216-T-28 Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The site is an underground, 8.9 centimeter (3.5 inch) diameter, carbon steel pipeline extending from the 241-T-112 tank to the 216-TY-201 Flush Tank.

Location: The pipeline extends southeast out of the 241-T Tank Farm. Most of the pipeline is located south of 23rd Street. The line crosses under Camden Ave.. Part of the line is located on the east side of Camden Ave. and part is on the west side of Camden Ave. A portion of the pipeline is inside the 241-T tank farm.

Process Description: The waste to 216-T-26 originally came from the 241-TY tank farm. In 1956, the pipeline from 241-TY tank farm to the 216-T-26 crib was isolated by installing a blank flange in the pipe between the east perimeter fence of the 241-TY Tank Farm and Camden Ave. A portion of an existing pipeline (see 200-W-167-PL) was re-used to create a new pipeline that routed waste from 241-T-112 tank (inside 241-T tank farm) to the 216-T-201 flush tank and the 216-T-26 crib. The 8.9 centimeter (3.5 inch) diameter pipe changes to a 7.6 centimeter (3 inch) diameter pipe where the pipeline turns eastward to connect with the 241-T-201 Flush Tank.

Related Sites/Structures: The site is associated with the 241-T-112 tank, the 216-TY-201 Flush Tank and pipeline 200-W-167-PL.

Code: 200-W-176-PL **Classification:** Accepted

Names: 200-W-176-PL; Encased Transfer Lines Between 241-TX-153 Diversion Box and 241-TX-155 Diversion Box; Lines V396, V397, V401, V403, V407, V409, and V413 **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground concrete transfer line encasement. All of the lines inside the encasement are 9 centimeter (3.5 inch) diameter stainless steel lines.

Location: The concrete encasement extends eastward from 241-TX tank farm to the 241-TX-155 Diversion Box, located east of Camden Ave.

Related Sites/Structures: The waste site is associated with the 241-TX-153 Diversion Box and the 241-TX-155 Diversion Box.

Code: 200-W-177-PL **Classification:** Accepted

Names: 200-W-177-PL; Direct Buried Tank Farm Lines Between 241-TXR-151 and 241-TX-155 Diversion Boxes; Lines V7616 and V7653 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive

End Date:

Description: The waste site is two 9 centimeter (3.5 inch) stainless steel lines buried in a common soil trench. Line V7616 extends between the 241-TXR-151 Diversion Box (inside the 241-TX tank farm) to the 241-TX-155 Diversion Box (outside the tank farm). Line V7653 extends from the 244 TXR Vault (inside the 241-TX tank farm) to the 241-TX-155 Diversion Box (outside the tank farm).

Location: The pipelines extend eastward from the 241-TX tank farm to the 241-TX-155 Diversion Box, located east of Camden Ave.

Related Sites/ Structures: The pipelines are associated with the 241-TXR-151 Diversion Box, the 241-TXR Vault and the 241-TX-155 Diversion Box.

Code: 200-W-178-PL

Classification: Accepted

Names: 200-W-178-PL; Lines HSW-202 and HSW-203; Pipeline from 241-Z to 244-TX DCRT

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The waste site is two, underground, 5 centimeter (2 inch) stainless steel pipelines buried in the same soil trench. The stainless steel lines are double (pipe in pipe) pipe construction.

Location: The pipeline is located west of Camden Ave. The pipeline exits the east side of the Plutonium Finishing Plant security fence and runs north to enter the west side of the 241-TX Tank Farm.

Process Description: The pipeline transported waste from tank D-5, in 241-Z tank farm to the 244-TX Double Contained Receiver Tank (DCRT) in the 241-TX tank farm.

Related Sites/ Structures: The pipeline is associated with the 241-Z tank farm and the 244-TX DCRT in the 241-TX tank farm.

Code: 200-W-179-PL

Classification: Accepted

Names: 200-W-179-PL; Lines SL100, SL101, SN216/281 and DR327; Pipelines Between 241-S-152 Diversion Box and 241-U Tank Farm

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The waste site is four carbon steel lines buried in the same soil trench. Two lines (SL100 and SL101) are 5 centimeter diameter pipes double contained inside 10 centimeter (4 inch) diameter pipes. Two lines (SN216/281 and DR327) are 7.6 centimeter (3 inch) diameter pipes double contained within 15 centimeter (6 inch) diameter pipes.

Location: The pipelines extend north from 241-S Tank farm to 241-U tank farm, along the east side of Cooper Ave.

Release Description: In 1980, unplanned release number UPR-200-W-115 was assigned to the surface soil contamination along this pipeline.

Code: 200-W-180-PL

Classification: Accepted

Names: 200-W-180-PL; Pipelines from 221-T to 216-T-1

Reclassification: None

Ditch

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 20 centimeter (8 inch) diameter, vitrified clay pipe that fed the 216-T-1 ditch. The vitrified clay pipes extending out of the 221-T building are smaller diameter (10 centimeter (4 inch) and 15 centimeter (6 inch). A 10 centimeter (4 inch) diameter cast iron pipe from the 277-T building connects to the main vitrified clay line (see subsite).

Location: The pipeline to the 216-T-1 ditch extends north from the northwest corner of the 221-T facility.

Related Sites/ Structures: The pipeline is associated with the 221-T and 277-T buildings and the 216-T-1 ditch.

This Site has the Following SubSites:

Code: 200-W-180-PL:1

Names: 200-W-180-PL:1; VCP Pipeline

Code: 200-W-180-PL:2

Names: 200-W-180-PL:2; Cast Iron Pipe

Code: 200-W-180-PL:1

Classification: Accepted

Names: 200-W-180-PL:1; VCP Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 1 is the main 8 inch VCP pipeline that fed the 216-T-1 ditch and the two smaller diameter VCP pipes (6 inch and 4 inch) that exit the 221-T building.

The SubSite is Part Of:

Code: 200-W-180-PL

Names: 200-W-180-PL; Pipelines from 221-T to 216-T-1 Ditch

Code: 200-W-180-PL:2

Classification: Accepted

Names: 200-W-180-PL:2; Cast Iron Pipe

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: Subsite 2 is the 4 inch diameter cast iron pipe from 277-T to the main VCP ditch pipeline.

The SubSite is Part Of:

Code: 200-W-180-PL

Names: 200-W-180-PL; Pipelines from 221-T to 216-T-1 Ditch

Code: 200-W-181-PL

Classification: Accepted

Names: 200-W-181-PL; Lines V426, V427 and V428/V461; Transfer Lines Between 241-U-152 and 241-U-153 Diversion Boxes

Reclassification: None

Type: Direct Buried Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: soil trench.

Location: The lines are located west of U Plant at the intersection of 16th Street and Camden Ave. The lines extend from 241-U-152 Diversion Box, located outside the tank farm, to 241-U-153 Diversion Box, located inside the 241-U tank farm fence. The lines cross under Camden Ave.

Related Sites/ Structures: The lines are associated with 241-U-152 and 241-U-153 diversion boxes.

Code: 200-W-182-PL **Classification:** Accepted

Names: 200-W-182-PL; Encased Transfer Lines Between 241-U-152 Diversion Box and 241-TX-152 and 241-TX-155 Diversion Boxes; Lines V398, V404 and V410 **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is three underground, 7.6 centimeter (3 inch) diameter, stainless steel lines in the same concrete encasement.

Location: The lines are located on the east side of Camden Ave., west of the 216-U-14 ditch. They extend between the 241-U-152 Diversion Box and the 241-TX-152 and 241-TX-155 Diversion Boxes.

Related Sites/ Structures: The lines are associated with 241-U-152, 241-TX-152 and 241-TX-155 diversion boxes.

Code: 200-W-183-PL **Classification:** Accepted

Names: 200-W-183-PL; Lines V422/V452 and V421/V453; Transfer Lines Between 241-U-151 and 241-U-152 Diversion Boxes **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two, 7.6 centimeter (3 inch) diameter, carbon steel lines buried in the same soil trench. Each line is double contained inside a 15 centimeter (6 inch) diameter pipe.

Location: The lines are located near the intersection of 16th Street and Camden Ave. They extend between the 241-U-151 and 241-U-152 diversion boxes.

Related Sites/ Structures: The lines are associated with the 241-U-151 and 241-U-152 Diversion Boxes.

Code: 200-W-184-PL **Classification:** Accepted

Names: 200-W-184-PL; 241-U-152 and 241-U-153 Diversion Boxes to 241-U-301 Catch Tank; Drain Lines from 241-U-151; Line V478 **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 10 centimeter (4 inch) diameter, carbon steel pipeline that connects the 241-U-151, 241-U-152 and 241-U 153 Diversion Boxes to the 241-U-301 Catch Tank. Individual 10 centimeter (4 inch) diameter drain lines from the three diversion boxes

connect to the same 10 centimeter (4 inch) diameter pipeline to the catch tank.

Location: The pipeline is near the corner of 16th Street and Camden Ave. It crosses under Camden Ave. Approximately one third of the drain line is located outside of the 241-U Tank Farm, east of the tank farm fence. Approximately two thirds of the pipeline is located inside the 241-U Tank Farm fence.

Process Description: The pipeline provided diversion box drainage to the 241-U-301 catch tank.

Related Sites/ Structures: The pipeline is associated with the 241-U-151, 241-U-152 and 241-U-153 Diversion Boxes and the 241-U-301 Catch Tank.

Code: 200-W-185-PL **Classification:** Accepted

Names: 200-W-185-PL; Lines V450 and V451; Transfer Lines Between 241-U-151 and 241-U-153 Diversion Boxes **Reclassification:** None

Type: Direct Buried Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two underground, 9 centimeter (3.5 inch) diameter, stainless steel lines buried in the same soil trench.

Location: The lines are located near the corner of 16th Street and Camden Ave. The lines cross under Camden Ave. A portion of these lines is located inside the 241-U Tank Farm.

Process Description: The lines transferred waste between the 241-U-151 and 241-U-153 Diversion Boxes.

Related Sites/ Structures: The lines are associated with the 241-U-151 and 241-U-153 diversion boxes.

Code: 200-W-186-PL **Classification:** Accepted

Names: 200-W-186-PL; Lines 1006 and 1045; Transfer Lines from 240-S-152 Diversion Box to 204-S and 205-S **Reclassification:** None

Type: Encased Tank Farm Pipeline **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground concrete encasement that contains two 9 centimeter (3.5 inch) diameter stainless steel pipelines.

Location: The pipelines originate north of the REDOX, at the 240-S-152 Diversion Box. The extend eastward and connected to the 204-S and 205-S facilities.

Process Description: The pipeline transferred waste from the 240-S-152 Diversion Box to the 205-S process cell. Line 1045 was rerouted to connect directly to the 204-S facility.

Related Sites/ Structures: The pipelines are associated with 240-S-152 Diversion Box and the 204-S and 205-S facilities.

Code: 200-W-187-PL **Classification:** Accepted

Names: 200-W-187-PL; Lines V552, V553 and V555; **Reclassification:** None

Code: 200-W-192-PL **Classification:** Accepted

Names: 200-W-192-PL; Pipeline from 221-U, 222-U and 224-U to the 207-U Retention Basin; U Plant Process Sewer **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The majority of the waste site is an underground, 61 centimeter (24 inch) diameter, vitrified clay pipe that carried waste from U Plant operations to the 207-U Retention Basin. A 61 centimeter (24 inch) cast iron line from 221-U, two 25 centimeter (10 inch) cast iron lines and a 10 centimeter (4 inch) diameter steel line from 224-U feed the main VCP process sewer.

Location: The pipeline is located west of U Plant and north of 16th Street.

Process Description: The 207-U basin received process sewer waste from the 221-U Building and the 224-U Building through this pipeline.

Related Sites/ Structures: The pipeline is associated with the U Plant facilities and the 207-U Basin.

This Site has the Following SubSites:

Code: 200-W-192-PL:1

Names: 200-W-192-PL:1; 24-Inch VCP Process Sewer Pipeline

Code: 200-W-192-PL:2

Names: 200-W-192-PL:2; Two 10-Inch Cast Iron Lines from 224-U to the U Plant Process Sewer

Code: 200-W-192-PL:3

Names: 200-W-192-PL:3; 4-Inch Schedule 40 Steel Pipeline from 224-U to U Plant Process Sewer

Code: 200-W-192-PL:4

Names: 200-W-192-PL:4; 24-Inch Cast Iron Pipeline from 221-U to U Plant Process Sewer

Code: 200-W-192-PL:1 **Classification:** Accepted

Names: 200-W-192-PL:1; 24-Inch VCP Process Sewer Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-192-PL

Names: 200-W-192-PL; Pipeline from 221-U, 222-U and 224-U to the 207-U Retention Basin; U Plant Process Sewer

Code: 200-W-192-PL:2 **Classification:** Accepted

Names: 200-W-192-PL:2; Two 10-Inch Cast Iron Lines from 224-U to the U Plant Process Sewer **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-192-PL
Names: 200-W-192-PL; Pipeline from 221-U, 222-U and 224-U to the 207-U Retention Basin; U Plant Process Sewer

Code: 200-W-192-PL:3 **Classification:** Accepted
Names: 200-W-192-PL:3; 4-Inch Schedule 40 Steel Pipeline from 224-U to U Plant Process Sewer **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-192-PL
Names: 200-W-192-PL; Pipeline from 221-U, 222-U and 224-U to the 207-U Retention Basin; U Plant Process Sewer

Code: 200-W-192-PL:4 **Classification:** Accepted
Names: 200-W-192-PL:4; 24-Inch Cast Iron Pipeline from 221-U to U Plant Process Sewer **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: This pipeline extends along the back side to 221-U and is connected to the corresponding cells in the canyon building.

The SubSite is Part Of:

Code: 200-W-192-PL
Names: 200-W-192-PL; Pipeline from 221-U, 222-U and 224-U to the 207-U Retention Basin; U Plant Process Sewer

Code: 200-W-193-PL **Classification:** Accepted
Names: 200-W-193-PL; Pipeline from 224-U to 241-U-361 Settling Tank **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 9 centimeter (3.5 inch) diameter, stainless steel pipeline that fed the 241-U-361 Settling Tank.

Location: The majority of the pipeline is located southwest of the 221-U facility, north of 16th Street.

Related Sites/ Structures: The pipeline is associated with 221-U, 224-U, 241-U-361 and 216-U-1 and 2 cribs.

Code: 200-W-194-PL **Classification:** Accepted
Names: 200-W-194-PL; Pipeline from 241-U-361 Settling Tank to 216-U-1 and 216-U-2 Cribs **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: The waste site is an underground, 9 centimeter (3.5 inch) diameter, stainless steel pipeline from

Description: the 241-U-361 Settling Tank to the 216-U-1 and 216-U-2 cribs.

Location: The pipeline is located south west of 221-U and north of 16th Street.

Related Sites/ Structures: The site is associated with 224-U, 221-U and 241-U-361.

Code: 200-W-195-PL **Classification:** Accepted

Names: 200-W-195-PL; Pipeline from U Plant (224-U) to 216-U-17 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 10 centimeter (6 inch diameter), polyethylene pipeline that fed the 216-U-17 crib.

Location: The pipeline is located east of U Plant. Most of it is north of 16th Street. It crosses under Beloit Ave.

Related Sites/ Structures: The pipeline is associated with 224-U and the 216-U-17 crib.

Code: 200-W-196-PL **Classification:** Accepted

Names: 200-W-196-PL; Pipelines from Railcar Unloading Stations to 216-T-34 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two parallel underground pipelines that extend from railcar Unloading Stations 1 and 2 to the 216-T-34 crib. The two lines are buried in the same soil trench. One of the pipelines is constructed of 20 centimeter (8 inch) diameter vitrified clay. The other pipeline is constructed of 15 centimeter (6 inch) diameter polyvinyl chloride. The railcar unloading stations are WIDS sitecode 200-W-21.

Location: The pipelines are located west of T Plant, near the railroad tracks that led into the T Plant area. Railcar Unloading Stations 1 and 2 (see sitecode 200-W-21) were located on the railroad tracks. The pipelines extend from the unloading stations to the crib.

Process Description: The railcar unloading stations were used to unload 300 Area liquid laboratory waste sent in railroad tanker cars from the 340 Facility. The waste was pumped into the adjacent 216-T-34 and 216-T-35 Cribs.

Related Sites/ Structures: The pipelines are associated with sitecodes 200-W-21 and 216-T-34 and 216-T-35 cribs.

Code: 200-W-197-PL **Classification:** Accepted

Names: 200-W-197-PL; Pipelines from Railcar Unloading Stations to 216-T-35 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is two parallel underground polyvinyl chloride pipelines that extend from the

216-T-34 crib pipeline to the 216-T-35 crib. The two lines are buried in the same soil trench. One of the pipelines is constructed of 20 centimeter (8 inch) diameter polyvinyl chloride. The other pipeline is constructed of 15 centimeter (6 inch) diameter polyvinyl chloride.

Location: The pipelines are located west of T Plant, near the railroad tracks that led into the T Plant area. Railcar Unloading Stations 1 and 2 (see sitecode 200-W-21) were located on the railroad tracks. The pipelines extend west from the 216-T-34 crib feed lines (see 200-W-196-PL).

Process Description: The railcar unloading stations were used to unload 300 Area liquid laboratory waste sent in railroad tanker cars from the 340 Facility. The waste was pumped into the adjacent 216-T-34 and 216-T-35 Cribs.

Related Sites/ Structures: The pipelines are associated with the 216-T-34 crib pipeline (sitecode 200-W-196-PL) and the 216-T-35 crib.

Code: 200-W-198-PL **Classification:** Accepted

Names: 200-W-198-PL; Pipelines from Truck Unloading Station to 216-T-34 and 216-T-35 Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 15 centimeter (6 inch diameter), polyvinyl chloride pipeline from the truck unloading station to the lines that fed the 216-T-34 and 216-T-35 cribs.

Location: The pipeline is located near the northwest corner of the 216-T-34 crib.

Process Description: Tank trucks of waste emptied into the truck unloading station that fed the 216-T-34 and 216-T-35 cribs.

Related Sites/ Structures: The pipeline is associated with the Truck Unloading Station near 216-T-34 crib and the 200-W-197-PL pipeline.

Code: 200-W-199-PL **Classification:** Accepted

Names: 200-W-199-PL; Pipelines from Building 231-Z to 231-W-151 Vault **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is three underground, 7.6 centimeter (3 inch) diameter, stainless steel pipelines that fed the 231-W-151 vault. The three lines are direct buried in the same soil trench.

Location: The waste site is located east of the 231-Z building.

Related Sites/ Structures: The pipelines are associated with the 231-Z facility, the 231-W-151 vault and 200-W-200-PL.

Code: 200-W-200-PL **Classification:** Accepted

Names: 200-W-200-PL; 216-Z-16 Crib Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: 231-Z building to the 216-Z-16 crib. The majority of the pipeline is 10 centimeters (4 inches) in diameter. A short length of pipe is 7.6 centimeters (3 inches) in diameter.

Location: The pipeline extends north and west of the 231-Z building.

Related Sites/ Structures: The pipeline is associated with the 231-Z building, 200-W-199-PL and the 216-Z-16 crib.

Code: 200-W-201-PL **Classification:** Accepted

Names: 200-W-201-PL; 216-Z-17 Crib Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter carbon steel pipeline that fed the 216-Z-17 crib.

Location: The pipeline is located east of the 231-Z building.

Related Sites/ Structures: The pipeline is associated with the 231-Z building, pipeline 200-W-199-PL and 216-Z-17 crib.

Code: 200-W-202-PL **Classification:** Accepted

Names: 200-W-202-PL; Pipeline from 231-W-151 to 216-Z-5 Crib **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline from the 231-W-151 vault to the 216-Z-5 cribs. An extra overflow line was added that connected to the 216-Z-10 pipeline (200-W-204-PL) see subsites.

Location: The pipeline is located northeast of the 231-Z building.

Related Sites/ Structures: The pipeline is associated with the 231-W-151 vault, the 216-Z-5 crib and the pipeline to 216-Z-10 (sitecode 200-W-204-PL).

This Site has the Following SubSites:

Code: 200-W-202-PL:1

Names: 200-W-202-PL:1; Pipeline from 231-W-151 to 216-Z-5 Cribs

Code: 200-W-202-PL:2

Names: 200-W-202-PL:2; Overflow Piping That Connects to 216-Z-10 Pipeline

Code: 200-W-202-PL:1 **Classification:** Accepted

Names: 200-W-202-PL:1; Pipeline from 231-W-151 to 216-Z-5 Cribs **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-202-PL

Names: 200-W-202-PL; Pipeline from 231-W-151 to 216-Z-5 Crib

the double security fence.

Related Sites/ Structures: The pipeline is associated with the 241-Z-8 tank, the 216-Z-8 french drain and also 200-W-206-PL (the pipeline to 216-Z-9).

This Site has the Following SubSites:

Code: 200-W-205-PL:1

Names: 200-W-205-PL:1; Stainless Steel Pipeline from 234-5Z to the 241-Z-8 Silica Storage Tank

Code: 200-W-205-PL:2

Names: 200-W-205-PL:2; Carbon Steel Pipeline from 241-Z-8 Tank to 216-Z-8 French Drain

Code: 200-W-205-PL:1

Classification: Accepted

Names: 200-W-205-PL:1; Stainless Steel Pipeline from 234-5Z to the 241-Z-8 Silica Storage Tank

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-205-PL

Names: 200-W-205-PL; Pipelines from 235-5Z to 241-Z-8 Silica Storage Tank and 216-Z-8 French Drain

Code: 200-W-205-PL:2

Classification: Accepted

Names: 200-W-205-PL:2; Carbon Steel Pipeline from 241-Z-8 Tank to 216-Z-8 French Drain

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-205-PL

Names: 200-W-205-PL; Pipelines from 235-5Z to 241-Z-8 Silica Storage Tank and 216-Z-8 French Drain

Code: 200-W-206-PL

Classification: Accepted

Names: 200-W-206-PL; Pipelines from 234-5Z to 216-Z-9 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is two underground, 3.8 centimeter (1.5 inch) diameter stainless steel pipes that connected the 234-5Z building with the 216-Z-9 crib.

Location: The pipeline is located east of the Plutonium Finishing Plant main building. It extends beyond the double security fence.

Related Sites/ Structures: The waste site is associated with the 216-Z-9 crib and also the 200-W-205-PL pipeline (the pipeline to the 241-Z-8 tank).

Code: 200-W-207-PL

Classification: Not Accepted

Names: 200-W-207-PL; 216-Z-19 and 216-Z-20 Ditches; Z Plant Radioactive Process Sewer to 216-Z-11

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Not Specified

End Date:

Description: This pipeline has been split into two separate waste sites (200-W-207-PL-A - Inactive portion and 200-W-207-PL-B - Active portion). The original waste site was multiple branches of underground vitrified clay pipe that connected to manholes that originally discharged to the 216-Z-1, 216-Z-11 and 216-Z-19 ditches and the 216-Z-20 tile field.

Location: The process sewer lines extends south from the 234-5Z building and east to the 216-Z-1, 216-Z-11 and 216-Z-19 ditches. The pipeline was later diverted to the 216-Z-20 tile field.

Process Description: Many of the process sewer branches are active and were connected to the Treated Effluent Disposal Facility (TEDF) system in 1995. (see H-2-140332 and H-2-140336). Parts of the process sewer were lined before connecting to the TEDF system. Some branches of the sewer are not radiologically contaminated, but other portions are known to have carried radioactive waste.

Related Sites/ Structures: The process sewer lines are associated with the 216-Z-1, 216-Z-11 and 216-Z-19 ditches and the 216-Z-20 tile field.

This Site has the Following SubSites:

Code: 200-W-207-PL:1

Names: 200-W-207-PL:1; Process Sewer Main Pipeline

Code: 200-W-207-PL:2

Names: 200-W-207-PL:2; Process Sewer Branch from 236-Z to Manhole 7

Code: 200-W-207-PL:3

Names: 200-W-207-PL:3; Acid Waste Line to Manhole 3

Code: 200-W-207-PL:1

Classification: Not Accepted

Names: 200-W-207-PL:1; Process Sewer Main Pipeline

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Not Specified

End Date:

Description: This section of pipeline originally extended from the northwest corner of 2736-ZB to the "Z" ditches. It includes manholes Z1, Z2 and Z7.

This section of pipe is considered Active and now part of 200-W-207-PL-B.

The SubSite is Part Of:

Code: 200-W-207-PL

Names: 200-W-207-PL; 216-Z-19 and 216-Z-20 Ditches; Z Plant Radioactive Process Sewer to 216-Z-11

Code: 200-W-207-PL:2

Classification: Not Accepted

Names: 200-W-207-PL:2; Process Sewer Branch from 236-Z to Manhole 7

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Not Specified

End Date:

Description: This portion of pipe is considered Active and part of 200-W-207-PL-B.

The SubSite is Part Of:

Code: 200-W-208-PL:1
Names: 200-W-208-PL:1; 6-Inch Line from 200-W-58 Diversion Box to 200-W-59 Diversion Box

Code: 200-W-208-PL:2
Names: 200-W-208-PL:2; 12-Inch VCP Line from 200-W-59 Diversion Box to the 216-Z-12 Crib Structure

Code: 200-W-208-PL:3
Names: 200-W-208-PL:3; 6-Inch SST Bypass Pipeline from 200-W-59 Diversion Box to the Center of 216-Z-12 Crib

Code: 200-W-208-PL:4
Names: 200-W-208-PL:4; 12-Inch VCP Line from 200-W-59 Diversion Box to Small Drain Field

Code: 200-W-208-PL:5
Names: 200-W-208-PL:5; 12-Inch VCP Line from 200-W-58 Diversion Box to Small Drain Field

Code: 200-W-208-PL:1 **Classification:** Accepted
Names: 200-W-208-PL:1; 6-Inch Line from 200-W-58 Diversion Box to 200-W-59 Diversion Box **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The original 200-W-208-PL waste site was split into two waste sites - 200-W-208-PL-A and 200-W-208-PL-B. This pipe segment is approximately 180 meters (592 feet) long. It is a 6 inch diameter stainless steel pipe. It has become part of 200-W-208-PL-B.

The SubSite is Part Of:

Code: 200-W-208-PL
Names: 200-W-208-PL; Pipeline from Diversion Boxes 200-W-58 and 200-W-59 to 216-Z-12 Crib

Code: 200-W-208-PL:2 **Classification:** Accepted
Names: 200-W-208-PL:2; 12-Inch VCP Line from 200-W-59 Diversion Box to the 216-Z-12 Crib Structure **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The original 200-W-208-PL waste site was split into two waste sites - 200-W-208-PL-A and 200-W-208-PL-B. This pipe segment is a 22 meter (75 foot long), 12 inch diameter VCP pipe. It has become part of 200-W-208-PL-A.

The SubSite is Part Of:

Code: 200-W-208-PL
Names: 200-W-208-PL; Pipeline from Diversion Boxes 200-W-58 and 200-W-59 to 216-Z-12 Crib

Code: 200-W-208-PL:3 **Classification:** Accepted
Names: 200-W-208-PL:3; 6-Inch SST Bypass Pipeline from 200-W-59 Diversion Box to the Center of 216-Z-12 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

Description: This bypass pipeline was installed in 1968 to replace the original VCP crib line. It was installed west of the center of the 216-Z-12 crib. The original 200-W-208-PL waste site was split into two waste sites - 200-W-208-PL-A and 200-W-208-PL-B. The pipe segments equal approximately 76 meter (250 feet) in length. It is a six inch diameter stainless steel pipe. It has become part of 200-W-208-PL-A.

The SubSite is Part Of:

Code: 200-W-208-PL

Names: 200-W-208-PL; Pipeline from Diversion Boxes 200-W-58 and 200-W-59 to 216-Z-12 Crib

Code: 200-W-208-PL:4

Classification: Accepted

Names: 200-W-208-PL:4; 12-Inch VCP Line from 200-W-59 Diversion Box to Small Drain Field

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The original 200-W-208-PL waste site was split into two waste sites - 200-W-208-PL-A and 200-W-208-PL-B. This pipe segment is a 20 foot long, 12 inch diameter VCP pipe. It has become part of 200-W-208-PL-B.

The SubSite is Part Of:

Code: 200-W-208-PL

Names: 200-W-208-PL; Pipeline from Diversion Boxes 200-W-58 and 200-W-59 to 216-Z-12 Crib

Code: 200-W-208-PL:5

Classification: Accepted

Names: 200-W-208-PL:5; 12-Inch VCP Line from 200-W-58 Diversion Box to Small Drain Field

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The original 200-W-208-PL waste site was split into two waste sites - 200-W-208-PL-A and 200-W-208-PL-B. This pipe segment is a 20 foot long, 12 inch diameter VCP pipe. It has become part of 200-W-208-PL-B.

The SubSite is Part Of:

Code: 200-W-208-PL

Names: 200-W-208-PL; Pipeline from Diversion Boxes 200-W-58 and 200-W-59 to 216-Z-12 Crib

Code: 200-W-209-PL

Classification: Accepted

Names: 200-W-209-PL; 207-Z Pipelines

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is three underground pipelines associated with the 207-Z Retention Basin. One 20 centimeter (8 inch) diameter carbon steel pipe extends from 234-5Z to the Retention Basin. One 15 centimeter (6 inch) diameter carbon steel pipe extends from the retention basin to the 241-Z-361 settling tank. One 15 centimeter (6 inch) diameter pipe extends from the 207-Z retention basin to Manhole #7 and flows into the process sewer (200-W-207-PL).

Location: The 207-Z Retention Basin is located southeast of the 234-5Z building and east of the 241-Z facility.

Related Sites/ Structures: The pipelines are associated with 241-Z-361, 234-5Z building and 200-W-207-PL.

This Site has the Following SubSites:

Code: 200-W-209-PL:1
Names: 200-W-209-PL:1; 8-Inch Steel Line from 234-5Z to 207-Z

Code: 200-W-209-PL:2
Names: 200-W-209-PL:2; 6-Inch Steel Line from 207-Z to 241-Z-361

Code: 200-W-209-PL:3
Names: 200-W-209-PL:3; 6-Inch Line from 207-Z to Manhole #7

Code: 200-W-209-PL:1 **Classification:** Accepted
Names: 200-W-209-PL:1; 8-Inch Steel Line from 234-5Z to 207-Z **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-209-PL
Names: 200-W-209-PL; 207-Z Pipelines

Code: 200-W-209-PL:2 **Classification:** Accepted
Names: 200-W-209-PL:2; 6-Inch Steel Line from 207-Z to 241-Z-361 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-209-PL
Names: 200-W-209-PL; 207-Z Pipelines

Code: 200-W-209-PL:3 **Classification:** Accepted
Names: 200-W-209-PL:3; 6-Inch Line from 207-Z to Manhole #7 **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**

The SubSite is Part Of:

Code: 200-W-209-PL
Names: 200-W-209-PL; 207-Z Pipelines

Code: 200-W-210-PL **Classification:** Accepted
Names: 200-W-210-PL; Pipeline from 241-Z-361 Settling Tank to 216-Z-1, 216-Z-2 and 216-Z-3 Cribs and 216-Z-1A Tile Field **Reclassification:** None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 20 centimeter (8 inch) diameter stainless steel pipeline extending from the 241-Z-361 settling tank to the 216-Z-1, 216-Z-2 and 216-Z-1A. A 20 centimeter (8 inch) diameter vitrified clay pipe feed line branches off to the 216-Z-3 crib. Another 20 centimeter (8 inch) diameter vitrified clay pipe is a crib overflow line from 216-Z-3 crib to 216-Z-1A (see subsites).

Location: The pipelines are located south of the 234-5Z facility. The majority of the lines are located south of the PFP security fence.

Related Sites/Structures: The pipeline is associated with the 241-Z-361 settling tank, the 216-Z-1, 216-Z-2 and 216-Z-3 cribs and the 200-W-58 diversion box (diversion box #1). 200-W-174-PL tees off this pipeline.

This Site has the Following SubSites:

Code: 200-W-210-PL:1

Names: 200-W-210-PL:1; 216-Z-2 and 216-Z-1A; Stainless Steel Pipeline from 241-Z-361 (Through 200-W-58 Diversion Box) to 216-Z-1

Code: 200-W-210-PL:2

Names: 200-W-210-PL:2; 8-Inch VCP Pipe to 216-Z-3 Crib

Code: 200-W-210-PL:3

Names: 200-W-210-PL:3; 8-Inch VCP Overflow Pipe (to 216-Z-1A)

Code: 200-W-210-PL:1

Classification: Accepted

Names: 200-W-210-PL:1; 216-Z-2 and 216-Z-1A; Stainless Steel Pipeline from 241-Z-361 (Through 200-W-58 Diversion Box) to 216-Z-1

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-210-PL

Names: 200-W-210-PL; Pipeline from 241-Z-361 Settling Tank to 216-Z-1, 216-Z-2 and 216-Z-3 Cribs and 216-Z-1A Tile Field

Code: 200-W-210-PL:2

Classification: Accepted

Names: 200-W-210-PL:2; 8-Inch VCP Pipe to 216-Z-3 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-210-PL

Names: 200-W-210-PL; Pipeline from 241-Z-361 Settling Tank to 216-Z-1, 216-Z-2 and 216-Z-3 Cribs and 216-Z-1A Tile Field

Code: 200-W-210-PL:3

Classification: Accepted

Names: 200-W-210-PL:3; 8-Inch VCP Overflow Pipe (to

Reclassification: None

216-Z-1A)

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-210-PL

Names: 200-W-210-PL; Pipeline from 241-Z-361 Settling Tank to 216-Z-1, 216-Z-2 and 216-Z-3 Cribs and 216-Z-1A Tile Field

Code: 200-W-212-PL

Classification: Accepted

Names: 200-W-212-PL; Encased Transfer Line from 240-S-151 Diversion Box to Pipeline 200-W-153-PL; Lines V550, V551, V544, V546, V548 and V549

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date:

Status: Inactive

End Date:

Description: The waste site is a six line, concrete encasement from the 240-S-151 Diversion Box. Three lines (V546, V549, V551) are stubbed off and were never used. The other three lines (V544, V548 and V550) connect to a reducer, where the three lines become one line. The three lines carried REDOX steam condensate waste. They exit the encasement and feed into 200-W-153-PL.

Location: The pipeline is located northwest of 202-S. It extends west from the 240-S-151 Diversion Box.

Process Description: Lines V546, V549 and V551 were stubbed off and never used. Lines V544, V548 and V550 transferred REDOX steam condensate waste. They tied into a 10 inch line that sent waste to 216-S-6 Crib.

Related Sites/ Structures: The pipeline is associated with the 240-S-151 Diversion Box, 2904-S-171, 216-S-6, 216-S-17 and pipeline 200-W-153-PL.

Code: 200-W-213-PL

Classification: Accepted

Names: 200-W-213-PL; Lines V795, V606 and V605; Pipelines from 241-TX-153 Diversion Box and 241-TX-302A to 216-T-19 Crib

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is two underground stainless steel pipelines inside a concrete encasement. The lines transferred waste from the 241-TX-153 Diversion Box and the 241-TX-302A Catch Tank to the 216-T-19 crib.

Location: The pipeline is located west of Camden Ave. It extends south from inside the 241-TX tank farm at the 241-TX-153 Diversion box to the 216-T-19 crib.

Related Sites/ Structures: The pipeline is associated with the 241-TX-153 Diversion Box, the 241-TX-302A catch tank and the 216-T-19 crib.

This Site has the Following SubSites:

Code: 200-W-213-PL:1

Names: 200-W-213-PL:1; Two 3.5-Inch Diameter Stainless Steel Lines Encased in Concrete from 241-TX-153 DB and 241-TX-302A to 216-T-19 Crib

Code: 200-W-213-PL:2
Names: 200-W-213-PL:2; 8-Inch Diameter Stainless Steel Bypass Line Around Original Crib Structure

Code: 200-W-213-PL:1
Classification: Discovery
Names: 200-W-213-PL:1; Two 3.5-Inch Diameter Stainless Steel Lines Encased in Concrete from 241-TX-153 DB and 241-TX-302A to 216-T-19 Crib
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:
Description: Line V795 extends from the 241-TX-153 Diversion Box to the 216-T-19 crib. Line V605 extends from the 241-TX-302A Catch Tank to the 216-T-19 crib. Both lines (V605 and V795) are inside the same concrete encasement.

The SubSite is Part Of:

Code: 200-W-213-PL
Names: 200-W-213-PL; Lines V795, V606 and V605; Pipelines from 241-TX-153 Diversion Box and 241-TX-302A to 216-T-19 Crib

Code: 200-W-213-PL:2
Classification: Discovery
Names: 200-W-213-PL:2; 8-Inch Diameter Stainless Steel Bypass Line Around Original Crib Structure
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Inactive
End Date:
Description: This portion of the pipeline is the bypass line around the original crib structure.

The SubSite is Part Of:

Code: 200-W-213-PL
Names: 200-W-213-PL; Lines V795, V606 and V605; Pipelines from 241-TX-153 Diversion Box and 241-TX-302A to 216-T-19 Crib

Code: 200-W-214-PL
Classification: Accepted
Names: 200-W-214-PL; Pipeline from 291-Z to 216-Z-13 French Drain
Reclassification: None
Type: Radioactive Process Sewer
Start Date:
Status: Active
End Date:
Description: The waste site is an underground, 10 centimeter (4 inch) diameter pipeline from the 291-Z building to the 216-Z-13 French Drain.
Location: The pipeline is located inside the PFP security fence. It is adjacent to the east side of the 291-Z building.
Related Sites/ Structures: The pipeline is associated with the 216-Z-13 French Drain.

Code: 200-W-215-PL
Classification: Accepted (Proposed)

Names: 200-W-215-PL; Pipeline from 291-Z to 216-Z-14 French Drain **Reclassification:** None

Type: Radioactive Process Sewer

Start Date:

Status: Active

End Date:

Description: The waste site is an underground, 10 centimeter (4 inch) diameter pipeline from the 291-Z building to the 216-Z-14 French Drain.

Location: The pipeline is located inside the PFP security fence. It is adjacent to the west side of the 291-Z building.

Process Description: The lower french drain receives steam condensate from the turbine of the ET-9 exhaust fan and 291-Z floor drainage.

Related Sites/ Structures: The pipeline is associated with the 216-Z-14 French Drain and the 291-Z building.

Code: 200-W-216-PL

Classification: Accepted

Names: 200-W-216-PL; Pipelines from 291-Z to 216-Z-15 French Drain

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 10 centimeter (4 inch) diameter pipeline from the 291-Z building to the 216-Z-15 French Drain.

Location: The pipeline is located inside the PFP security fence. It is adjacent to the north side of the 291-Z building.

Related Sites/ Structures: The pipeline is associated with the 216-Z-15 French Drain.

Code: 200-W-217-PL

Classification: Accepted (Proposed)

Names: 200-W-217-PL; Pipeline from the Counting Box to 216-U-7 French Drain

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter steel pipe that transferred waste from the Counting Box structure to the 216-U-7 French Drain.

Location: The pipeline is located on the southeast side of the 221-U Building near Section 6. It is northwest of the 241-UX-154 Diversion Box .

Related Sites/ Structures: The pipeline is associated with the 216-U-7 French Drain.

Code: 200-W-218-PL

Classification: Accepted

Names: 200-W-218-PL; Pipeline from 216-U-10 Pond to 216-U-9 Ditch

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive **End Date:**

Description: The waste site is an underground, 0.8 meter (30 inch) corrugated metal pipe that transferred waste from the 216-U-10 pond to the 216-U-9 ditch.

Location: The pipeline extends from the southwest corner of 216-U-10 pond. It crosses under 13th Street.

Related Sites/ Structures: The pipeline is associated with the 216-U-10 Pond and the 216-U-9 ditch.

Code: 200-W-219-PL **Classification:** Accepted

Names: 200-W-219-PL; 241-Z Primary Pipe Trench; Pipe Tunnel 3; Pipelines from 235-Z to the North Side of 241-Z **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is six underground stainless steel pipes inside a concrete encasement that transferred waste from 234-5Z to the 241-Z tanks. The pipe diameters range from 7.6 centimeters (3 inch) to 20 centimeters (8 inch).

Location: The pipelines inside an encasement, known as a pipe tunnel, that extends from the south wall of 234-5Z to the north side of 241-Z. They are located inside the PFP security fence.

Release Description: Between 11,400 liters (3,000 gallons) and 114,000 liters (30,000 gallons) of waste is estimated to have leaked into the concrete pipe trench and effected the soil below the trench. See sitecode 200-W-171.

Related Sites/ Structures: The pipeline is associated with the 241-Z tanks and Unplanned Release sitecode 200-W-171.

Code: 200-W-220-PL **Classification:** Accepted

Names: 200-W-220-PL; Pipeline from 241-Z to 241-Z-361 Settling Tank **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 15 centimeter (6 inch) diameter stainless steel pipe that transferred waste from the 241-Z tanks to the 241-Z-361 settling tank.

Location: The pipeline is located inside the PFP security fence. It extends from the south wall of the 241-Z tank pit to the 241-Z-361 Settling Tank.

Related Sites/ Structures: The pipeline is associated with the 241-Z Tank Pit and the 241-Z-361 settling tank.

Code: 200-W-221-PL **Classification:** Accepted

Names: 200-W-221-PL; Laundry Waste Crib (LWC) Pipeline **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 20 centimeter (8 inch) diameter vitrified clay pipe that fed the

Laundry Waste Crib (216-W-LWC). It also include the drain line from the Mask Cleaning Station (MO-412).

Location: The pipeline is located south of 20th Street and east of Beloit Ave.

Process Description: Pipeline 200-W-102-PL carried laundry waste to the 216-U-14 ditch. When the laundry effluent was diverted to the 216-W-LWC Crib in 1981, the 200-W-102-PL pipeline was plugged west of the manhole located north of the 2723-W building. The portion of the pipeline that was reused to transfer mask cleaning effluent from 2723-W and laundry waste from 2724-W to the 216-W-LWC (Laundry Waste Crib) became part of sitecode 200-W-221-PL.

Related Sites/ Structures: The pipeline is associated with 216-W-LWC (Laundry Waste Crib) and pipeline 200-W-102-PL.

Code: 200-W-222-PL **Classification:** Accepted

Names: 200-W-222-PL; 207-U Retention Basin Outlet Pipeline to the 216-U-14 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 0.61 meter (2 foot) diameter vitrified clay pipe. The pipe carried effluent out of the 207-U Retention Basin to the 216-U-14 Ditch.

Location: The pipeline is located north of 16th Street and east of Camden Ave.. It extends from the west side of the 207-U Retention Basin.

Related Sites/ Structures: The pipe is associated with 207-U and 216-U-14 ditch.

Code: 200-W-223-PL **Classification:** Accepted

Names: 200-W-223-PL; Pipeline from 242-S Evaporator to 216-U-14 Ditch **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an underground, 0.61 meter (2 foot) diameter corrugated metal pipe that transferred effluent from the 242-S Evaporator building to the 216-U-14 ditch.

Location: The pipeline is located on the west side of Cooper Ave. It extends north from the 242-S Evaporator to the 216-U-14 ditch. It crosses under Cooper Ave.

Related Sites/ Structures: The pipeline is associated with the 216-U-14 ditch.

Code: 200-W-224-PL **Classification:** Accepted

Names: 200-W-224-PL; Pipeline from 234-5Z and 236-Z to West Side of 241-Z **Reclassification:** None

Type: Radioactive Process Sewer **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is four underground, 5 centimeter diameter (2 inch) stainless steel pipelines buried in the same soil trench. Each stainless steel line is encased inside a 15 centimeter (6

inch) diameter polyurethane pipe casing.

Location: The pipeline is located inside the Plutonium Finishing Plant security fence. It extends south from 234-5Z and connects to the west side of 241-Z.

Related Sites/ Structures: The pipeline is associated with 234-5Z, 236-Z, and 241-Z.

This Site has the Following SubSites:

Code: 200-W-224-PL:1

Names: 200-W-224-PL:1; Pipeline from 234-5Z to West Side of 241-Z

Code: 200-W-224-PL:2

Names: 200-W-224-PL:2; Pipeline from 236-Z Connecting to Pipeline from 234-5Z to West Side of 241-Z

Code: 200-W-224-PL:1

Classification: Accepted

Names: 200-W-224-PL:1; Pipeline from 234-5Z to West Side of 241-Z

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-224-PL

Names: 200-W-224-PL; Pipeline from 234-5Z and 236-Z to West Side of 241-Z

Code: 200-W-224-PL:2

Classification: Accepted

Names: 200-W-224-PL:2; Pipeline from 236-Z Connecting to Pipeline from 234-5Z to West Side of 241-Z

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-224-PL

Names: 200-W-224-PL; Pipeline from 234-5Z and 236-Z to West Side of 241-Z

Code: 200-W-225-PL

Classification: Accepted

Names: 200-W-225-PL; PFP Six Inch Condensate Line Connecting to Process Sewer

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

Description: The waste site begins as an underground, 15 centimeter (6 inch diameter) carbon steel condensate pipeline that connected 234-5Z with the Z Plant Process Sewer (see sitecode 200-W-207-PL. Other portions of the pipe are constructed of transite and corrugated metal.

Location: The pipeline is located inside the Plutonium Finishing Plant security fence. It extends from the southwest corner of 234-5Z to southeast of 232-Z.

Process Description: A portion of this pipeline was removed during the construction of the 232-Z building (around 1960). The pipeline was redesigned to direct the flow around the 232-Z building.

Related Sites/ Structures: The pipeline is associated with 234-5Z and the 200-W-207-PL process sewer.

Code: 200-W-226-PL **Classification:** Accepted
Names: 200-W-226-PL; Lines V326, V671 and V706; Pipeline from 224-T (Plutonium Concentration Facility) to 241-T-361 Settling Tank and 216-T-3 Reverse Well **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline that carried waste from the 224-T Plutonium Concentration Facility to the 216-T-361 Settling Tank and the 216-T-3 Reverse Well.
Location: The pipeline is located north of 23rd Street. It extends from the east side of 224-T to the 216-T-3 Reverse Well.
Release Description: UPR-200-W-102 may be associated with this pipeline.
Related Sites/ Structures: The pipeline is associated with 216-T-3 reverse well and 241-T-361 settling tank.

Code: 200-W-227-PL **Classification:** Accepted
Names: 200-W-227-PL; Pipeline from 221-T Separations Facility to 216-T-6 Crib **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter stainless steel pipeline that fed the 216-T-6 cribs.
Location: The pipeline is located on the north side of 23rd Street. It extends from the east side of 221-T, turns south and then runs west to the 216-T-6 cribs.
Related Sites/ Structures: The pipeline is associated with the 216-T-6 cribs.

Code: 200-W-228-PL **Classification:** Accepted
Names: 200-W-228-PL; 3-Inch Contaminated Waste Line; Pipeline from 232-Z to 241-Z **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter pipeline from 232-Z to 241-Z. It is labeled on drawings as "contaminated waste line".
Location: The pipeline is located inside the Plutonium Finishing Plant security fence, south of 234-5Z. It extends from 232-Z to the west side of 241-Z.
Related Sites/ Structures: The pipeline is associated with 241-Z.

Code: 200-W-229-PL **Classification:** Accepted
Names: 200-W-229-PL; Pipeline from 2736-ZB to 241-Z **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground, 7.6 centimeter (3 inch) diameter carbon steel pipeline extending from the southeast corner of 2736-ZB to the west side of 241-Z.
Location: The pipeline is located inside the Plutonium Finishing Plant security fence, south of 234-5Z. It extends from 232-Z to the west side of 241-Z.
Related Sites/ Structures: The pipeline is associated with 241-Z.

Code: 200-W-230-PL **Classification:** Accepted
Names: 200-W-230-PL; Pipeline from Railroad Unloading Station to 276-S-141 and 276-S-142 Hexone Tanks **Reclassification:** None
Type: Radioactive Process Sewer **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is a series of underground carbon steel pipelines associated with the 276-S-141 and 276-S-142 hexone tanks. A 6 centimeter (2.5 inch) diameter carbon steel line extended from the railroad track to the tanks. A 6 centimeter (2.5 inch) diameter outlet line and a 5 centimeter (2 inch) diameter inlet line is associated with each tank.
Location: The pipeline is located northwest of the 202-S canyon building.
Process Description: The tanks stored various liquid mixed wastes until 1992, when most of the waste was transferred to tank cars for off-site incineration. From 1951 to 1967 the tank was used to store reagent-grade hexone for makeup as a solvent at REDOX. The hexone was delivered to REDOX in rail cars that were unloaded into the 276-S-141 and 241-S-142 tanks via underground lines at the railcar unloading station.
Related Sites/ Structures: The pipeline is associated with the 276-S-141 and 276-S-142 hexone tanks.

This Site has the Following SubSites:

Code: 200-W-230-PL:1
Names: 200-W-230-PL:1; 2.5-Inch Carbon Steel Line from Railroad Track "Car Spot" to the 276-S-141 and 276-S-142 Tanks
Code: 200-W-230-PL:2
Names: 200-W-230-PL:2; 2.5-Inch Outlet Line and 2-Inch Inlet Line Associated with 276-S-141
Code: 200-W-230-PL:3
Names: 200-W-230-PL:3; 2.5-Inch Outlet Line and 2-Inch Inlet Line Associated with 276-S-142

Code: 200-W-230-PL:1 **Classification:** Accepted
Names: 200-W-230-PL:1; 2.5-Inch Carbon Steel Line from Railroad Track "Car Spot" to the 276-S-141 **Reclassification:** None

and 276-S-142 Tanks

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-230-PL

Names: 200-W-230-PL; Pipeline from Railroad Unloading Station to 276-S-141 and 276-S-142 Hexone Tanks

Code: 200-W-230-PL:2

Classification: Accepted

Names: 200-W-230-PL:2; 2.5-Inch Outlet Line and 2-Inch Inlet Line Associated with 276-S-141

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-230-PL

Names: 200-W-230-PL; Pipeline from Railroad Unloading Station to 276-S-141 and 276-S-142 Hexone Tanks

Code: 200-W-230-PL:3

Classification: Accepted

Names: 200-W-230-PL:3; 2.5-Inch Outlet Line and 2-Inch Inlet Line Associated with 276-S-142

Reclassification: None

Type: Radioactive Process Sewer

Start Date:

Status: Inactive

End Date:

The SubSite is Part Of:

Code: 200-W-230-PL

Names: 200-W-230-PL; Pipeline from Railroad Unloading Station to 276-S-141 and 276-S-142 Hexone Tanks

Code: 200-W-231

Classification: Accepted

Names: 200-W-231; Temporary Facilities Construction Trailer Septic Tank and Tile Field

Reclassification: None

Type: Septic Tank

Start Date: 1/1/1951

Status: Inactive

End Date:

Description: The septic and tile field are not visible. They are not marked or posted. They were noticed on Hanford Site drawing H-2-2289. Exact coordinates are not available.

Location: The septic tank and tile field are located west of Camden Ave. and south of 23rd St. They are approximately 16.7 meters (55 feet) south of the 200-W-79-PL pipeline, the pipeline that feed the 216-T-36 crib.

Process Description: During the 1950's, many Temporary Construction buildings were set up to support construction activities. H-2-2289 was drawn in February 1951. It shows a septic tank and tile field that supported a Temporary Construction office and an X-ray laboratory. The Temporary construction facilities were supporting the construction of 241-TY Tank Farm.

Waste Type: Sanitary Sewage

Waste Description: H-2-2289 was drawn in February 1951. It shows a septic tank and tile field that supported a

Temporary Construction office and an X-ray laboratory. It is possible that x-ray development solutions were discharged to the septic system.

Code: 200-W-232 **Classification:** Accepted
Names: 200-W-232; 2607-WT Replacement Septic Tank and Dry Well **Reclassification:** None
Type: Septic Tank **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an underground septic tank.
Location: The septic tank and dry well are located east of the 241-TY Tank Farm, outside the tank farm fence.
Process Description: The 2607-WT septic system, located inside the tank farm fence, was abandoned. The new system was placed outside the tank farm fence. It consisted of a septic tank and a dry well. It serviced the 242-T Evaporator building.

Code: 200-W-234 **Classification:** Accepted (Proposed)
Names: 200-W-234; 291-U Sand Filter French Drain **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The french drain is a concrete pipe filled with gravel.
Location: The french drain is located adjacent to the southwest corner of the 291-U sand filter structure.
Process Description: The french drain received condensate drainage from the 291-U sand filter.
Related Sites/ Structures: This drain is associated with the 291-U Sand Filter (WIDS sitecode 200-W-44).

Code: 200-W-235-PL **Classification:** Accepted
Names: 200-W-235-PL; Pipeline from 241-SX-701 Building to S Pit; 200-W-162-PL Replacement Pipeline **Reclassification:** None
Type: Process Sewer **Start Date:** 1/1/1965
Status: Inactive **End Date:**
Description: There is no visual evidence of the pipeline on the surface. It is a 7.6 centimeter (3 inch) diameter, stainless steel pipe.
Location: The pipeline is located east of the 241-S Tank Farm perimeter fence.
Process Description: The pipeline carried effluent from the 241-SX-701 Compressor House to a pit located south of 241-S Tank Farm. The pit is WIDS sitecode 200-W-236.
Related Sites/ Structures: The pipeline is associated with the 241-SX-701 building, the 200-W-236 pit and the 200-W-162-PL pipeline.

Code: 200-W-236 **Classification:** Accepted
Names: 200-W-236; Pit South of 241-SX Tank Farm **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: The pit is a large, irregular shaped depression.
Location: The pit is located south of the 241-SX tank farm, east of Cooper Ave.
Process Description: Drawing H-2-33593 shows a 3 inch steel line extending from the 241-SX-701 Compressor House to the pit. A note on the drawing says "Discharge to existing pit". This pipeline replaced the pipeline that had sent compressor house effluent to the 241-SX-2 crib (see 200-W-162-PL).
Related Sites/ Structures: The pit is associated with the 200-W-235-PL pipeline.

Code: 200-W-237 **Classification:** Accepted
Names: 200-W-237; Effluent Pond South of T Plant **Reclassification:** None
Type: Pond **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is square, open excavation was visually apparent in January 2011. It is surrounded by several orange stakes. The top of the square excavation is estimated to be approximately 15 by 15 meters (50 by 50 feet) and 1.2 meters (four feet) deep. A grey polyvinyl chloride pipe is visible extending into the excavation in the northeast corner of the hole.
Location: The square excavation is located about 6 meters (20 feet) south of 23rd Street, near Beloit Ave. in 200 West Area.
Process Description: The excavation is labeled "Pond" on H-2-44511, sheet 132. However, the excavation was never assigned a Hanford liquid waste site number. Cribs, ponds and ditches in the 200 Areas were usually assigned a number that began with 216, indicating it was a liquid waste site in the 200 Area (116 indicates a liquid waste site in 100 Areas and 316 indicates a liquid waste site in 300 Area). Since it was not assigned a number, it is possible it was built but never put into service. H-2-44511, sheet 132 says the drain line has been plugged and abandoned.
Related Sites/ Structures: The excavation is fed by a 4 inch PVC pipeline that originates at the 224-T building.

Code: 200-W-238 **Classification:** Accepted
Names: 200-W-238; Large Diameter French Drain North of 241-U **Reclassification:** None
Type: French Drain **Start Date:**
Status: Inactive **End Date:**
Description: The french drain is surrounded with chain and a sign that reads "MISF Area, No Vehicles or Storage, Contact Shift Office prior to Entry". The blue building in the background (inside the tank farm fence) is the 241-U-271 Control House. MISF means Miscellaneous Isolated Storage Facility.

Location: The large diameter french drain is located in 200 West Area, on the west side of Cooper Ave.

Location: adjacent to the north side of the 241-U Tank Farm fence.

Process Description: Drawings H-2-40093 and H-2-40241 show this french drain is connected to the 241-U-271 Control House mechanical equipment room via a 15 centimeter (6 inch) diameter vitrified clay pipeline encased in concrete.

Code: 200-W-239 **Classification:** Accepted

Names: 200-W-239; 211-U, 211-UA Post Remediation Posted Underground Radioactive Material Area **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an irregularly shaped, posted Underground Radioactive Material Area (URMA). The area was defined after the 211-A and 211-UA tank farms were demolished in 2009.

Location: The area is located on the northwest side of 221-U. It is west of Beloit Ave. and north of 16th Street.

Related Sites/ Structures: The demolished tank farm and resulting URMA are associated with 221-U.

Code: 200-W-240 **Classification:** Accepted

Names: 200-W-240; Contaminated Rabbit Feces Area South and West of 272S **Reclassification:** None

Type: Contamination Migration **Start Date:**

Status: Not Specified **End Date:**

Description: The waste site is a large area posted with Contamination Area signs. Contaminated rabbit feces have been found in this area.

Location: The waste site is located on the south and west sides of the 272-S building, on the west side of Cooper Ave. in 200 West Area.

Code: 200-W-241 **Classification:** Accepted

Names: 200-W-241; Contaminated Tumbleweed Fragment Areas West of Cooper Ave. **Reclassification:** None

Type: Contamination Migration **Start Date:**

Status: Not Specified **End Date:**

Description: The waste site is multiple posted Contamination Areas. The areas contain contaminated tumbleweeds and contaminated tumbleweed fragments. One area surrounds several connex boxes and one is located on the north side of the MO-027 trailer. A large posted contamination area extends northward from the MO-633 trailer, into the vacant property. Tumbleweeds are visible beneath the MO-633 trailer.

Location: The areas are located on the west side of Cooper Ave., west of the 242-S Evaporator building.

Code: 200-W-242 **Classification:** Accepted

Names: 200-W-242; Area of Debris and Subsurface **Reclassification:** None

Anomalies on Unused Portion of 218-W-4C
Annex site

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The waste site is an area of partially buried and surface debris. A large lag bolt and a crushed 8 inch diameter pipe were identified.

Location: The debris area is located west of Dayton Ave and north of 16th Street. It is located in northern part of the unused portion of the 218-W-4C Burial ground, known as the 218-W-4C Annex.

Related Sites/ Structures: This area is associated with the unused portion of the 218-W-4C Burial ground, known as the 218-W-4C Annex.

Code: 200-W-243

Classification: Accepted

Names: 200-W-243; Lead Slag near 2727-WA Sodium Storage Building

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The waste site is scattered fragments of lead slag in gravel and soil. The area has been estimated to be 200 feet long by 100 feet wide.

Location: The lead slag area is along an unnamed gravel access road, north of 16th Street, north of the 2727-WA building. It is near a railroad track.

Process Description: The small pieces of lead may be "drips" of lead from old welding operations that were done many years ago, perhaps in the late 1940's or 1950's. A discarded welding rod was found in this area.

Code: 2607-W13

Classification: Discovery

Names: 2607-W13; Construction Trailers Septic; JA Jones/Kaiser Constriction Trailers Septic

Reclassification: None

Type: Septic Tank

Start Date:

Status: Inactive

End Date:

Location: The septic tank is supposed to be located north of 19th Street and west of Beloit Ave, in the Construction Trailer area.

Process Description: There is very little information documented for this septic system.

Code: 2607-W16

Classification: Accepted

Names: 2607-W16; Large Onsite Sewer System (LOSS); 200 West Area Regional Wastewater System

Reclassification: None

Type: Septic Tank

Start Date: 1/1/2003

Status: Active

End Date:

Description: The waste site is an active septic system. The septic tile field is marked and posted.

Location: The septic system is located east of Bridgeport Ave. and north of 20th Street. It is northwest of

the 284-W Powerhouse.

Process Description: The 2607-W16 sanitary septic system was installed to receive the waste volume that was overwhelming the 2607-W1 system. The entire Plutonium Finishing Plant (PFP) sanitary waste volume was redirected to the 2607-W16 sanitary system. An average flow of 6845 gallons per day is sent to the 2607-W16 septic system.

Related Sites/ Structures: This septic system is associated with 2607-Z1 and 2607-W1.

Waste Type: Sanitary Sewage

Waste Description: The entire Plutonium Finishing Plant (PFP) sanitary waste volume was redirected to the 2607-W16 sanitary system. An average flow of 6845 gallons per day is sent to the 2607-W16 septic system.

Code: 2607-WUT **Classification:** Accepted

Names: 2607-WUT; 2607-WUT Septic Tank and Tile Field **Reclassification:** None

Type: Septic Tank **Start Date:** 1/1/1951

Status: Inactive **End Date:**

Description: The 2607-WUT Septic Tank is constructed of steel and includes a drain field. It is surrounded with an "L" shaped chained area and signs that read Sanitary Tile Field. There is a depressed area on the east end, inside the chain, that indicates a cave-in has occurred over the tile field. There is also a corrugated metal caisson, posted with a Confined Space sign, in the northwest corner of the chained tile field.

Location: This unit is located north of the 241-U Tank Farm.

Process Description: The 2607-WUT Septic Tank and drain field were designed to accept sanitary sewer effluent from the associated structures. H-2-40241 states that it is fed by a 15.2 centimeter (6 inch) vitrified clay pipe that is encased in concrete.

Related Sites/ Structures: The 2607-WUT Septic Tank is associated with the 241-U-271 Control House.

Waste Type: Sanitary Sewage

Waste Description: The current flow rates for the 2607-WUT septic system are unknown. This system received sanitary sewer effluent at an estimated rate of 36 cubic feet (1.02 cubic meters) per day in 1987.

Code: 300-37 **Classification:** Accepted

Names: 300-37; PCB Leak to Soil Adjacent to 335A **Reclassification:** Closed Out (1/27/1999)

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The site was a polychlorinated biphenyl (PCB) leak that contaminated the soil. The leak originated from a rectifier located on a concrete pad outside of the 335-A Building. The rectifier was installed in the early 1970's, but was never activated. There are no signs marking the location of the rectifier. The site can only be determined by the use of detailed maps and archive photographs.

Location: The site is located in the 300 Area, in a gravel area on the north side of building 336. The site is

located inside a fenced area, with the gate open.

Release Description: The polychlorinated biphenyl (PCB) leakage was first identified in April 1993 by the Electrical Utilities personnel. The leakage was observed at two fittings, one being the lower drain valve located near the edge of the concrete pad. The leaks appeared to be small and old, presumably pre-1987. The leaking fittings were covered over with a dirty grease-like coating. There was no visual evidence of oil on the concrete pad or soil surrounding the pad. In addition, there was no distinctive PCB odor at the leak site. The site was immediately roped off and plans for removal of the PCBs were initiated.

Related Sites/ Structures: The site was associated with a rectifier, which has been removed.

Waste Type: Oil

Waste Description: The waste was soil contaminated with polychlorinated biphenyls.

Closure Info: The rectifier was drained on August 2 and 4, 1993. The fluid contained a PCB level of 680,000 parts per million. The amount of oil in the rectifier at delivery was indicated on the unit at 6,113 liters (1,615 gallons). The amount of fluid removed, approximately 5,867 liters (1,550 gallons), was consistent with the fill data provided on the unit. The 246 liter (65 gallon) differential is typical of the quantity of oil that can not be removed from the rectifier cooling coils. This fluid and the drained rectifier were shipped off site to a licensed PCB disposal facility. After removal of this material, the concrete pad was smeared and PCB contamination of 12,000 parts per million was found in the area below the suspect fittings.

On July 19, 1994 the concrete pad was removed, packaged into drums and shipped off site for disposal as PCB contaminated waste. Crews also removed soil, approximately 2.4 meters by 2.4 meters by 0.3 meters (8 feet by 8 feet by 1 foot) deep, and sampled this soil for PCBs.

The soil was also visually inspected during removal. There was no visual evidence of oil in the soil, nor was the distinctive PCB odor present.

The soil sample results were erroneously read as 140 and 190 parts per million but were actually reported parts per billion. Since these analyses are normally reported in parts per million, the results interpreted as parts per million values warranted more sampling. Another 0.3 meters (1 foot) of soil was removed and sampled. (See sample results section.)

The PCB Case Reviewer for the EPA (Environmental Protection Agency) agreed that appropriate action had taken place, and from a Toxic Substances Control Act (TSCA) standpoint, regulations were met as long as the soil was less than 10 parts per million PCBs at a depth of 25 centimeters (10 inches) below the surface.

Code: 300-231	Classification: Accepted
Names: 300-231; Substation C3-S15; Vitrification Test Site Transformer Pad	Reclassification: Closed Out (5/26/1999)
Type: Electrical Substation	Start Date: 1/1/1983
Status: Inactive	End Date: 1/1/1999

Description: The site was a transformer station connected to a 13.8 KVA overhead powerline. The transformers have been removed. The transformers were used to provide electricity for in-situ vitrification tests at the 300 Vitrification Test Site (300 VTS), a separate WIDS site. The transformers were located on a concrete pad and enclosed by a chain link fence. The transformers were numbered as follows: transformer #C4804P, serial #81439, property

#F176743; transformer #C4805P, serial #81441, property #176744; transformer #C4648P, serial #80097, property #176745. The transformers were single phase 200 KVA. The primary voltage for each of the transformers was 14400 and secondary voltage was 240/480. Each transformer weighed 544 kilograms (1200 pounds). Electric fluid capacity was 492.1 liters (130 gallons) and the fluid type was mineral oil.

Location: The transformer pad is located in the southeast corner of the 300 Vitrification Test Site, west of Route Four South, across from the 300 Area.

Release Description: The operating records for the transformers document releases of transformer oil to the exteriors of the units (see Site Comment). The records do not document any releases to the transformer pad or the surrounding soil

Process Description: In-situ vitrification (ISV) was a thermal treatment process that converted contaminated soils and sludges into a glass and crystalline product. An electrical current was passed among an array of four electrodes imbedded in the contaminated soil or sludge, melting and glassifying it.

Related Sites/Structures: The transformer pad was related to the 300 Vitrification Test Site (300 VTS) and the associated Thermal Treatment and Test Facilities (TTTF).

Waste Type: Transformer

Waste Description: The transformers have been removed (5/13/1999). The concrete pad and the surrounding soils are clean. The only remaining waste is the abandoned concrete pad and fence.

Historical data showed that all three transformers were sampled for polychlorinated biphenyls (PCBs) on 8/18/86. Analysis on C4804P indicated 98 parts per million of PCB. Analysis on C4805P indicated 90 parts per million of PCB. Analysis on C4648P indicated 92 parts per million of PCB.

Closure Info: As of 5/13/1999, the transformers had been disconnected and removed from the site. The enclosure associated with the transformers is empty, and the concrete pad is clean.

Code: 300-277	Classification: Accepted
Names: 300-277; 300 Area Queue Contamination	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:

Code: 300-279	Classification: Accepted
Names: 300-279; 3716 Automotive Repair Building Fuel Tanks	Reclassification: None
Type: Storage Tank	Start Date:
Status: Inactive	End Date:

Description: This feature consists of the historical location of underground diesel and gasoline storage tanks that were located to the north of the original 313 Bldg. (M-2885 sheet 1 rev 0), and east of the original 3716 Automotive Repair Bldg. location. The northern expansion of the 313 Bldg. was over this area where the tanks were located.

Location: This historical feature is located within WIDS site UPR-300-38 (Accepted), which is contaminated soil beneath the 313 Building, as well as the concrete foundation. The full extent of contamination of UPR-300-38 will not be determined until the 313 Building foundation has been removed and soil remediation occurs. The contamination resulted from multiple unplanned

release events. With the exception of the fuel tanks, the soil contamination is beneath the southern half of the 313 Building. The fuel contamination, if any, would lie in the northern expansion on the eastern side of the building; the 313 Building is located at the north end of the main 300 Area (within the security fence). It is located north of Ginko Street, east of the 303K, 305, and 314 Buildings, and west of the 3712 and 3720 Buildings.

Process Description: Concurrently with the construction of the 313 Building in the 1940's there was a fuel station built to the north of the 313 Building (M-2885 sheet 1 rev 0). The site was used to dispense both gasoline and diesel fuels to power the various pieces of machinery and vehicles used on site for construction (19450108 98026_ [N1619631] and 19450108 P8027_ [N1619634]). The fuel pumps were on a concrete island and were associated with two underground tanks. This fuel station was used until 1947. The following is from Volume 22 of HAN-27990 page 27: "Removed 1947, one gas pump now located at 301 Bldg., one underground tank located at 301 Bldg. Disposition of one gas pump and one underground tank not known." Based on this information, one pump and one tank were

removed and were relocated to the 301 Building. It is not certain if the second tank was removed or not, or if there were any spills or leaks at the site. This work was performed in 1947 prior to the 1950's when the 313 Building was expanded in the northward direction over the site of the two tanks.

WIDS site UPR-300-38 is at the former site of the 313 building. The site 300-279 concerns soil contamination still under the building foundation. The building was demolished in 2005 and the foundation slab was left in-place with a clean gravel layer over it (BHI-01781).

Related Sites/ Structures: 313 Building

Code: 300-280	Classification: Accepted
Names: 300-280; Construction Debris Disposal Pit West of George Washington Way Extension	Reclassification: None
Type: Dumping Area	Start Date:
Status: Inactive	End Date:

Description: The construction debris disposal pit was a rectangular 13 m by 38 m (42 ft by 124 ft) pit aligned northwest to southeast with a 6 m (20 ft) wide gravel road ramping into the northwest end of the pit (M-3904, sheet 16, rev 1).

Location: The disposal pit was located on the west side of the George Washington Extension about 55 m (180 ft) south of the intersection with Cypress Street. It is immediately east of the 300-217 laydown yard.

Process Description: The disposal pit appears to have been used for construction debris during the construction of the 309 Facility in the late 1950's (photo 16998-3).

An interpreted area of buried debris is supported by all the geophysical data sets. The area correlates well with a construction pit shown on Dwg. M-3904 Sht. 16 Rev 1. The trench strikes NW-SE and is about 18-m wide and 35-m long and is roughly centered at N115476/E594298. There is about 0.4-m of overburden above the debris. Several utilities were detected and noted on the interpretation map. Some of the linears/utilities closely border the trench boundaries and should be more thoroughly defined before excavating in this area.

Related Sites/ Structures: Construction debris was associated with the construction of the 309 Building.

Structures.

Code: 300-281 **Classification:** Accepted

Names: 300-281; Septic Tank Near 325 Building **Reclassification:** None

Type: Septic Tank **Start Date:**

Status: Inactive **End Date:**

Description: This is the suspected site of a septic tank that was shown on a drawing (H-3-45154). The drawing calls for removal of the septic tank. However, the entire drawing was placed on hold for future construction and it is unclear if the septic tank was ever removed. The drawing was for a facility that was never built.

Location: The septic is located about 72 meters (236 feet) north of the 3790 building between the north end of the parking lot and the security fence surrounding the 325 building.

Process Description: The source of sanitary waste going to the septic tank has not been determined. However, aerial photographs (16998-1 & 18601-3) taken during the construction of the 309 Facility show a temporary construction building located at the approximate location of the septic tank. This temporary building may have discharged sanitary water to the septic tank. The only drawing (H-3-45154) showing the tank has a sanitary sewer line running north about 8 meters where it tees and then runs east-west where the lines end at sewer clean-outs.

A geophysical investigation was performed in the area of the suspected septic tank. The results were inconclusive (CCN# 0596714). A field walkdown identified a pipe with a plug in it (see photograph DSC02267) as a suspected clean-out. A 1 meter (3 ft) capped vertical 2 inch diameter steel pipe, that was painted yellow, may be a location marker (see logbook EL-1616-02 and photograph number DSC02267).

Code: 300-284 **Classification:** Accepted

Names: 300-284; Sand Blasting Area Near 3221 Building **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This feature is the historical location of the sand blasting area associated with the former 3221 building location.

Location: The central point of the sand blasting site lies at approximately (E) 594109.22, (N) 116125.96, which is a fenced area on the south side of the 3221 building.

Process Description: The site and associated 3221 building was used for the sand blasting of various items preparatory to these items being painted (DOE/RL-2004-77 Rev.1, Draft A).

Code: 300-283 **Classification:** Accepted

Names: 300-283; Contaminated Light Water Disposal Site #2; Potential Trench Location #2 **Reclassification:** None

Type: Trench **Start Date:**

Status: Inactive **End Date:**

Description: The waste site is an intentional release to soil. The area is currently used as an entry road/parking lot for 300 Area D4 remediation activities

Location: This potential site location is approximately 155 meters (508 ft) southeast of the 309 building, 157 meters (515 ft) south of the 324 building and 47 meters (154 ft) north of Cypress Street.

Process Description: On September 29, 1965, a major contamination event occurred at the 309 building, Plutonium Recycle Test Reactor (PRTR). A fuel element was heated until molten and a process tube burst. The event grossly contaminated the PRTR's heavy water moderator with fission products and with light water from the coolant. Most of the primary coolant and make-up coolant water was disposed via the 340 Building.

Secondary coolant and other normally contamination-free streams were routed directly to the Columbia River. When contamination was detected in this stream, the water was pumped to the ground. About 189,250 liters (50,000 gallons) of liquid waste were disposed to the ground (WHC-MR-0388).

Related Sites/ Structures: This site is associated with 300-2, another potential location of the liquid disposal trench.

Code: 300-286	Classification: Accepted
Names: 300-286; Three 300 Area Potentially Contaminated French Drain/Drywells	Reclassification: None
Type: French Drain	Start Date:
Status: Inactive	End Date:

Description: This site consists of three discrete locations and the underlying soil of a potentially contaminated French drain and drywells and their associated below grade piping components. A drywell and a French drain were discovered during the Orphan Site Evaluation (OSE) historical review, and the remaining drywell was discovered during a field walkdown of the area under investigation. Each of the facilities that the French drains and drywells are associated with, were identified and process or function of the facilities determined. Details of inlet pipes, French drains, drywells and source facilities are provided when available.

Drain number 1 (FD-1) (Orphan site feature 300-FF2-019) is a 61 cm (24 in) diameter drywell constructed in accordance with Hanford standard AC-4-30 (H-3-14950 & H-3-14947). The drain received liquids from two 0.3 m x 0.3 m x 0.3 m (1 ft x 1 ft x 1ft) sumps located in the 309 Building exhaust filter pit. A 2.5 cm (1 in) schedule 40 steel drain line from each sump joined a (2 in) schedule 40 steel line that drained to the French drain. There is a locked metal cover over the drywell.

Drain number 2 (FD-28) is a stormwater catch basin and 4-inch slotted drain pipe (corrugated polyethylene with a smooth interior). It is not visible in the field.

Drain number 3 (FD-33) is a french drain with a 15.2-cm (6-inch) pipe that empties into it. The pipe was traced 11 meters due west using geophysics. The traced end of the pipe is 3 meters (10 feet) east of FD-21 (NFE), which was associated with the 3701-N guardhouse.

Location: Drain number 1 is located about 3.6 meters (12 feet) east of the 309 Building exhaust filter pit.

Drain number 2 is located on the east side of the 3790 Badge House.

Drain number 3 is located about 11 meters east-northeast of the 3701-N Guardhouse.

Process Description: There is a slight potential for contamination being present in drain number 1, as the 309 Building exhaust filter pit is associated the 309 building exhaust stack.

Drain number 2 received stormwater on the east side of the 3790 Badgehouse.

The source for water to drain number 3 is unknown, but thought to be from the 3701-N Guardhouse.

Code: 300-287 **Classification:** Accepted
Names: 300-287; Transite Debris west of Route 4 South **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: This feature consists of broken corrugated transite in a pile approximately 0.5 meters by 1.5 meters.
Location: This feature is located approximately 28 m west of Route 4 South.
Process Description: This feature was discovered during the Orphan Site Evaluation field walkdowns of the 300-FF-2 area on June 24, 2009.

Code: 300-288 **Classification:** Accepted
Names: 300-288; Piles of Garnet Sand/Soil Mixture within Gravel Pit 6 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: This feature consists of two piles of garnet sand within a 5 m (16.4 ft) diameter area. The total volume is approximately 15 cubic meters (20 cubic yards), and each pile is estimated to be 5% garnet sand and 95% soil.
Location: This feature is located within WIDS 600-249.
Process Description: Garnet grit was commonly used in grit-blasting operations to clean rust, paint, or contamination from the surface of metal components. The garnet material is not a hazardous substance, but there is potential for contamination from the surface material that was removed by grit blasting.

Related Sites/ Structures: Site is located within 600-249 (gravel pit 6).

Code: 300-289 **Classification:** Accepted
Names: 300-289; Stained Soil Area North of 300 Area **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: This feature consists of bare ground, with crusting and two drum bung plugs.
Location: This feature is located 15 m west of a maintained power line road.
Process Description: There is no process history associated with this waste site.

Code: 300-290 **Classification:** Accepted
Names: 300-290; Radiological Debris Area East of Horn Rapids Disposal Landfill **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The site is a posted RMA (Radiological Materials Area) approximately 64 square meters. The material in the RMA consisted mostly of rusted metal automotive parts, scraps of crumpled sheet metal, electrical wire debris and engine gaskets.

Location: This feature is located approximately 32 m NNE of the NE boundary of WIDS HRD (Horn Rapids Disposal).

Process Description: The debris in this feature is consistent with the debris that was deposited in the Horn Rapids Landfill, which operated as an uncontrolled landfill from the late 1940's to the 1970's. The landfill is currently inactive, and was remediated in accordance with EPA/ROD/R10-93/063, Hanford 1100-Area (USDOE). The landfill has been taken off the National Priorities List, and it was capped and put under institutional controls (DOE/RL-2008-68).

Related Sites/ Structures: WIDS- HRD (Horn Rapids Disposal).

Code: 300-291 **Classification:** Accepted
Names: 300-291; Garnet Sand West of 350-A Paint Shop **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: This feature consists of garnet sand on a gravel road bed.

Location: This feature is located 60 m west of the 350A paint shop.

Related Sites/ Structures: This area likely supported the 350A paint shop.

Code: 300-292 **Classification:** Accepted
Names: 300-292; 315 Water Filter Plant Waste Pipeline Segments **Reclassification:** None
Type: Product Piping **Start Date:**
Status: Inactive **End Date:**

Description: This site includes ten (10) abandoned nonhazardous waste pipeline segments associated with the process sewers from the 315 Water Filter Plant (filter backwash) in the 300 Area (Other 04102010). The site includes pipeline segments identified during the 300-FF-1 Orphan Site Evaluation for disposition with the 300-FF-2 Operable Unit evaluations (038509) and additional undocumented pipeline segments, manholes, sumps and diversion boxes discovered during the 300-FF-2 Orphan Site Evaluation (OSE). The OSE reference number for these segments is 300FF2-266.

The site consists of abandoned pipeline segments and associated features (manholes, junction boxes, sumps, etc.) that transported filter backwash waste solutions from the 315 Water Filter Plant. These waste solutions were routed to Filter Backwash Ponds (e.g. 300 RFBP, 300 FBP:1,

300 FBP:2).

The original 315 Water Filter Plant process sewer ran east from the 315 Building process sewer sump (315-22) to an outfall into the Columbia River. In 1975, the 315 process sewer pipeline to the river outfall was isolated and sealed at a diversion box (315-23) installed to redirect the 315 Building process sewer flow north to discharge into on-site sedimentation ponds (see attached map and tables). The east branch of the 315 Water Filter Plant process sewer from the diversion box (315-23) was accepted as WIDS Waste Site 300-261; it was later closed out ("rejected") with Waste Site Reclassification Form 99-044.

The most recent waste site associated with these pipeline segments was the lined 300 FBP:2 Filter Backwash Pond (aka 315-C Sedimentation Pond) that was shutdown in 1998 (2000-116). During the last period of operation, any filter backwash waste solutions were to be settled in the pond and the pond overflow was to drain into a lift station for discharge to the 300 Area Process Sewer (300-15).

Location: These 315 Water Filter Plant filter backwash waste lines within the 300 Area were mapped in the WCH Geographic Information System (GIS) database.

Process Description: The process waste solutions for this site included nonhazardous solids suspended in water filter backwash waste solutions from the 315 Water Filter Plant that were routed north to the 315-C Sedimentation Pond (300 FBP:2) where the filter backwash sediments settled.

Coal ash and filter backwash waste solutions were determined to be nonhazardous materials and the associated waste sites (pipelines, ditches, and ponds) were designated as either "No Action" or "Rejected" waste sites (DOE/RL-1994-49, DOE/RL-2004-74). These designations were confirmed during the Orphan Sites Evaluation for the 300-FF-1 Operable Unit completed in 2005 (120421).

Plans for the disposal of the settled filter backwash waste solutions in 300 FBP:2 progressed from 1990 to 1997 that involved: (1) a replacement river outfall pipeline (Segment 7) that was installed (1993) but not used, abandoned, and partially removed (1996), (2) a recycle line to the 315 Water Filter Plant for a 10% recycle process that was installed (1996) but not used and abandoned in place, and (3) pumps and piping installed in 1997 to transfer the waste water to the 300 Area process sewer (300-15) at a manhole (PS-47) near the 340 Facility west of the 315-C Sedimentation Pond. The latter included the reuse of some of the 300-295 pipeline segments.

Related Sites/ Structures: The pipelines included in this site are associated with the 315 Water Filter Plant, and the aqueous waste disposal facilities for these facilities including the 315-C Sedimentation Pond (aka 300 FBP:2), the 315-C Lift Station, the 315-D Lift Station, and associated manholes, sumps, valve pits, and diversion boxes. The site is associated with the 300 Area process sewer (300-15). The 315 Water Filter Plant backwash sewer pipelines were transitioned for disposition with the 300-FF-2 Operable Unit Orphan Site Evaluation (WCH CCN 120421).

Code: 300-293 **Classification:** Accepted

Names: 300-293; 300 Area Miscellaneous Pipelines **Reclassification:** None

Type: Product Piping **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of miscellaneous piping in the 300 Area. The site was identified in Section J, Attachment 1 of the River Corridor Closure Contract as Activity ID 0041.01035, Confirmatory Sampling Site - 300 Area Misc Piping (Other 09292004). The scope of the confirmatory sampling site was not defined in the contract. A comprehensive review of historical

construction drawings was performed as part of the 300 Area Orphan Sites Evaluation (OSR-2010-0002). The 300 Area Orphan Site Evaluation identified 278 unidentified underground utility lines (UGL) having a total length of 2755 meters (1.71 miles). Most of the lines have unknown terminal ends (starting and ending points of origin) which suggests that the estimated length is substantially underestimated. The unidentified UGLs may include many non-hazardous telecommunication, compressed gas and electrical related utilities.

The site was divided into two subsites:

- 300-293:1, 300 Area Miscellaneous Pipelines - less than 2.5 ft bgs
- 300-293:2, 300 Area Miscellaneous Pipelines - greater than or equal to 2.5 ft bgs

Location: The miscellaneous pipelines are located throughout the 300-FF-2 operable unit. The individual UGLs are mapped in the WCH Geographic Information System (GIS) database.

This Site has the Following SubSites:

Code: 300-293:1

Names: 300-293:1; 300 Area Miscellaneous Pipelines - Less Than 2.5 Feet Below Ground Surface

Code: 300-293:2

Names: 300-293:2; 300 Area Miscellaneous Pipelines - Greater Than or Equal to 2.5 Feet Below Ground Surface

Code: 300-293:1

Classification: Accepted

Names: 300-293:1; 300 Area Miscellaneous Pipelines - Less Than 2.5 Feet Below Ground Surface

Reclassification: No Action (6/22/2011)

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of 107 underground utility lines (UGL) in the 300 Area that have been identified as being between 1 and 2.5 feet below the ground surface (bgs). Table 1 of the Waste Site Reclassification form lists each of the segments.

Location: The miscellaneous pipelines are located throughout the 300-FF-2 operable unit. The individual UGLs are mapped in the WCH Geographic Information System (GIS) database. The subsite consists of 107 underground utility lines which are known to not be associated with hazardous waste because of their shallow depth. Pipelines with a depth of less than 0.762 m (2.5 ft) bgs are determined not to have been associated with liquid waste processes or facilities that may have contained hazardous materials.

Process Description: The underground lines in this subsite are expected to associated with telecommunications, electrical ductwork, and compressed gas.

The SubSite is Part Of:

Code: 300-293

Names: 300-293; 300 Area Miscellaneous Pipelines

Code: 300-293:2

Classification: Accepted

Names: 300-293:2; 300 Area Miscellaneous Pipelines - Greater Than or Equal to 2.5 Feet Below Ground Surface

Reclassification: None

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of underground utility lines (UGL) in the 300 Area that has been identified as being greater than 2.5 feet below the ground surface (bgs). The UGLs without an approximate depth were also assigned to this subsite.

Location: The miscellaneous pipelines are located throughout the 300-FF-2 operable unit. The individual UGLs are mapped in the WCH Geographic Information System (GIS) database.

The SubSite is Part Of:

Code: 300-293

Names: 300-293; 300 Area Miscellaneous Pipelines

Code: 300-294

Classification: Accepted

Names: 300-294; Garnet Sand East of 350 Building

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This feature consists of garnet sand on a gravel road bed.

Location: This feature is located approx. 5 m east of the 350 building.

Related Sites/ Structures: The 350 Complex served as the central craft shop for the 300 area, with offices for supervisory and support personnel. The main 350 building contained shop areas for plastics, carpentry, electrical/instrument, machine, welding, grinding, and pipefitting/millwright work. As of 1984, approximately 70 personnel worked either in or out of the facility providing service and craft functions. The 350-A building provided space for spray-painting and sandblasting. The 350-B building was used to store miscellaneous equipment and supplies. The 350-C building functioned as a storage building for lumber used by the various shops. The 350-D building served as a storage location for hazardous chemicals, primarily oil (350, RCC SIS Report).

Code: 300-295

Classification: Accepted

Names: 300-295; 384 Powerhouse Coal Ash Waste Pipeline Segments

Reclassification: None

Type: Product Piping

Start Date:

Status: Inactive

End Date:

Description: This site includes four (4) abandoned nonhazardous waste pipeline segments and associated features (diversion valve box, manholes, etc.) that serviced the 384 Power House coal ash waste disposal by sluicing to the 300 Ash Pits and/or to the 315-C Sedimentation Pond (Other11092009). The site includes pipeline segments identified during the 300-FF-1 Orphan Site Evaluation for disposition with the 300-FF-2 Operable Unit evaluations (038509) and additional undocumented pipeline segments discovered during the 300-FF-2 Orphan Site Evaluation (OSE).

The coal ash waste site (300 Ash Pit) associated with these pipeline segments was reclassified to a status of "No Action" (98-004, Control Number 115) based on the past practice knowledge (DOE/RL-94-49) that the waste streams were nonhazardous and based on post-remediation characterization results for the 300-FF-1 Operable Unit waste sites (CVP 2003-02, DOE/RL-2004-74).

The most recent waste site associated with these pipeline segments was the lined 300 FBP:2 Filter Backwash Pond (aka 315-C Sedimentation Pond) that was shutdown in 1998 (2000-116).

No coal ash slurries were routed to the 315 C Filter Backwash Sedimentation Pond (300 FPB:2) via Segment 14, the most recent coal ash sluicing pipeline (see Site Comments). This site is listed as 300FF2-269 in the Orphan Sites Evaluation Report (OSR-2010-0002).

Location: The 384 Power House coal ash waste lines within the 300 Area were mapped in the WCH Geographic Information System (GIS) database.

Process Description: Water was used to slurry coal ash from the 384 Power House coal ash (aka fly ash) filters to the 300 Ash Pits via a 10 cm (8 in) diameter pipeline to one of the two 300 Ash Pits. The initial coal ash sluicing pipeline (Segment 10) discharged into an open ditch (Segment 11) that drained into the 300 Ash Pits. The subsequent replacement coal ash pipelines (Segments 12 and 13) discharged alternately into one of the two 300 Ash Pits. The 300 Ash Pits were used alternately to allow the water to drain and the accumulations of coal ash to dry before being excavated and disposed as a solid waste. The coal ash slurries were routed to the 300 Ash Pits until about 1995. In 1995, the 384 coal ash sluicing pipeline was extended (segment 14 part of WIDS site 300-292) to the 315-C Sedimentation Pond (300 FPB:2) to support plans to discontinue use of the 300 Ash Pits (H-3-49874). However, before the extended coal ash sluicing line (H-3-49874) was put into service, the coal-fired boilers at the 384 Power House were shut down to reduce stack emissions. No coal ash slurries were routed to the 315-C Filter Backwash Sedimentation Pond (300 FPB:2). However, while Segment 14 was not used for coal ash sluicing, it was used to transfer filter backwash waste solution from the 315-C Sedimentation Pond to the 300 Area Process Sewer (see 315 Miscellaneous Waste Pipelines, 300-292).

Coal ash was determined to be a nonhazardous material and the associated waste sites (pipelines and ditch) were designated as "No Action" waste sites (DOE/RL-1994-49, DOE/RL-2004-74). This designation was confirmed during the Orphan Sites Evaluation for the 300-FF-1 Operable Unit completed in 2005 (120421).

Related Sites/Structures: The pipelines were identified in the WIDS as part of the 300 Area Process Sewer waste site, 300-15. They were associated with the 384 Power House, the 300 Ash Pits, and the 315 Sedimentation Pond; these pipelines were not connected to the 300-15 waste site piping.

Waste Type: Process Effluent

Waste Description: Coal ash waste solutions were determined to be nonhazardous materials and the associated waste sites (pipelines and ditch) were designated as "No Action" waste sites (DOE/RL-94-49, DOE/RL-2004-74). These designations were confirmed during the Orphan Sites Evaluation for the 300-FF-1 Operable Unit completed in 2005 (120421)

Code: 300-296

Classification: Accepted

Names: 300-296; Soil Contamination Under the 324 Building B-Cell

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of contaminated soil beneath the B-Cell of the 324 Building. The lateral and vertical extent of contamination is unknown. The B-Cell was 7.6 m (25 ft) x 6.7 m (22 ft) x 9.3 m (30.5 ft) high. The floor and walls (up to 8.2 m [27 ft] high) were lined with stainless steel (H-3-20195, H-3-20213, H-3-20214 and H-3-20273). The floor sloped to a trench that ran the length of the east side of the cell. The trench emptied into a sump located in the northeast corner of B-Cell (H-3-20195).

Location: The site is located beneath the B-Cell in the north central portion of the 324 Building.

Release Description: On 11/16/10, a cone penetrometer (an enclosed pipe pushed into the soil by a hydraulic ram) was used to identify the presence of radioactive material in the soil approximately 3.5 feet

beneath the 324 Building near the B-cell. A maximum radiation readings of 6,700 R/hr. was identified. The 324 Building is a Nuclear Category 2 facility, currently undergoing deactivation and decommissioning. The 324 Building was constructed in the 1960s to support materials and chemical process research and development activities, and ceased research operations in 1996. The primary operational system remaining in the building is ventilation. In preparation for removal of B-cell, historical research and on-site investigation identified evidence of a potentially breached liner in the sump floor. A leak may have occurred at some point in the operational past of the cell. The 300 Area is posted as an Underground Radioactive Material (URM) Area. This event is being reported as a Management Concern due to the unexpected very high levels of radiation.

Process Description: The 324 Building was constructed between 1964 and 1966 to demonstrate pilot scale processes for converting high level solvent extraction separations plant wastes to solids (HW-74703). The building was divided into five functional areas (BNWL-CC-2028): Radiochemical Engineering Cells (REC), Shielded Materials Facility, Sodium Studies Facility, Engineering Development Laboratory and the Engineering Development Laboratory.

The 300-296 waste site is related to the REC functional area. The REC area is located in the north portion of the 324 Building and consisted of four hot-cells (A, B, C, and D) located around a central airlock. The cells and airlock were joined forming a "T"-shaped structure. The airlock was used primarily as a transition zone for maintenance, decontamination, and transfer of material and equipment into and out of adjoining hot cells (PNL-10890).

The REC area was used for process and equipment development studies using materials with mega curie radioactive levels. All work was accomplished with remote manipulations from the service gallery (BNWL-CC-2028). Major research and development programs undertaken in the REC have included the Waste Solidification Engineering Prototypes (WSEP) Program, the Fabrication of Cesium and Strontium Heat and Radiation Sources Program (Federal Republic of Germany [FRG]), the Nuclear Waste Vitrification Program (NWVP), the Zeolite Vitrification Demonstration Program (ZVDP), and the Nuclear Waste Treatment Program's (NWTP) Pilot Scale Radioactive Liquid-Fed Ceramic Melter (RLFCM) Testing Task (PNL-10890). The REC operations were concluded in 1996.

Related Sites/ Structures: The site is associated with the Radiochemical Engineering Cells (REC) area located in the north portion of the 324 Building.

Waste Type: Soil

Waste Description: The soil is contaminated with radionuclides which are presumed to have originated from a release of concentrated strontium and cesium solution in about 1986. COPCs Cs-137 and Sr-90.

Code: 400-36	Classification: Accepted
Names: 400-36; 4843 Building Temporary Transfer Station; 4843 Waste Inspection Facility; Sanitary Waste Check Station	Reclassification: No Action (1/18/2005)
Type: Storage	Start Date: 1/1/1998
Status: Inactive	End Date: 1/1/2002

Description: The structure is a fully-insulated, bolted steel building on a concrete slab. Heat is provided by ceiling-suspended heaters. Two 3.7 meter (12 foot) roll-up doors are located on the structure's east and west sides and can be used for moving materials into and out of the building. A large fenced laydown area adjacent to the building could be accessed through the west door. The facility also has several other doors and windows. A 8 foot (2.4 meter) wide and 10 foot (3.0

meter) tall portion of the south wall has corroded and appears rust-colored. The bottom edges of the facility's outside walls have also corroded.

Location: The 4843 Building is located in the northwest corner of the 400 Area. A large laydown area is located adjacent to and west of the structure.

Process Description: The building was used as a transfer station to check Hanford garbage (sanitary waste) for radiological or hazardous contaminants prior to transporting the garbage to the Richland Landfill for final disposal.

Related Sites/ Structures: This building was previously known in WIDS as sitecode 4843; 4843 Building, 4843 Alkali Metal Storage Facility, a RCRA Treatment, Storage, and Disposal Facility. When this site was Closed Out under RCRA in 1997, WIDS site code 400-36 was created at the request of EPA to track the building's use as a waste transfer station.

Waste Type: Misc. Trash and Debris

Waste Description: The building was used as a transfer station to check Hanford garbage (sanitary waste) for radiological or hazardous contaminants prior to transporting the garbage to the Richland Landfill for final disposal.

Closure Info: The transfer station operations have ceased. The last load of garbage delivered to the building was on July 31, 2002. Subsequent to cessation of operations, the floor area was surveyed. Direct and removable contamination surveys verified no source term material is present above background levels.

Code: 400-41

Classification: Accepted

Names: 400-41; 4723 Flammable Liquid Storage Building Soil Stains; 400 Area Flammable Liquid Storage Area Soil Stains

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The 4723 Building has been demolished. Asphalt currently covers the area where the spills occurred. In April 2010, no visual evidence of the 4723 building or the storage areas could be found.

Location: The soil stains are located between the FMEF perimeter fence and the FFTF exclusion area fence.

Process Description: In 1979 and 1980, the 4723 building stored flammable liquids. Historical photographs show a bermed area outside the building and many containers being stored outside the building. The 4843 Alkali Metal Storage Facility was built and actively began to store dangerous and mixed alkali metal waste in 1986. This building replaced the 4723 building.

Code: 600-58

Classification: Accepted

Names: 600-58; BPA SWMU #13; H.J. Ashe Substation Oil/Water Separator & Drywells

Reclassification: None

Type: French Drain

Start Date: 1/1/1988

Status: Active

End Date:

Description: The oil/water separator is located south of the fuel island and south of the maintenance headquarters building. The oil/water separator receives drainage from eight floor drains in the

maintenance headquarters building shop and two drains located on either side of the fuel island. The oil/water separator is designed to remove petroleum, oil, and lubricants from incoming water. It has a 454 liter (120 gallon) capacity. Drainage from the separator as well as drainage from two catch basins south of the maintenance headquarters building, flow into the dry well south of the maintenance building. The oil-water separator is precast concrete with a bottom elevation of about 4.6 meters (15 feet) below the surface. A site visit on November 20, 1998 found the oil-water separator to be active. It contained water with a small amount of oil sheen floating on the surface.

Location: The Ashe Substation is located 0.5 miles northwest of and adjacent to the Energy Northwest property (formerly known as the Washington Public Power Supply System).

Process Description: This substation is part of the Bonneville Power Administration main transmission grid, that conducts electrical power from the Columbia and Snake Rivers dams to five states (Washington, Oregon, Idaho, western Montana, and northern California). The BPA transmission grid is divided into four subareas. The substations on the Hanford Site are within the Snake River subarea. The substations use petroleum oil, primarily mineral oil, as insulation in electrical equipment. This includes transformers, coupling and potential devices, capacitors, circuit breakers, reclosers, voltage regulators, switches, and cable. Insulating oil is a highly refined, 10-weight petroleum oil with approximately 0.1 percent 2,6-di-tertbutyl-paracresol (an antioxidant known as BHT that is also used as a food additive) and varying amounts of polychlorinated biphenyls (PCBs) to increase dielectric strength. All of the substations have above ground tanks of mineral oil, that is used as make-up oil for equipment maintenance of electrical equipment. Solvents are used for cleaning and degreasing operations. Once maintenance is completed, rags soaked in solvent and all personal protective clothing are to be placed in drums for transport to the generator storage area at the H. J. Ashe Substation. All equipment filled with mineral oil is regularly analyzed for PCB concentration. All untested and unmarked equipment is assumed to be PCB contaminated. Electrical equipment fluid is assumed to be PCB, if the manufacturer's manuals or nameplates do not identify the type of dielectric fluid in the equipment, or if the equipment is known to be PCB according to available information. Drainage from the oil-water separator located adjacent to the fuel island, and stormwater runoff intercepted by two catch basins located south of the maintenance building flow into a drywell located 76 meters (250 feet) south of the maintenance headquarters building. Two other drywells receive stormwater runoff from the blacktop paved areas of the Ashe Substation facility.

Related Sites/ Structures: The site is associated with the H.J. Ashe Substation (Sitecode 600-60).

Waste Type: Water

Waste Description: The drywells received drainage from the oil/water separator. It is likely that water contained some petroleum products.

Waste Type: Oil

Waste Description: The oil/water separator has received petroleum, oil and lubricants.

Description:

Code: 600-59

Classification: Accepted

Names: 600-59; BPA SWMU #12; Generator Storage Area Sump; H.J. Ashe Substation Storage Area

Reclassification: None

Type: Storage

Start Date: 1/1/1976

Status: Active

End Date:

Description: The storage facility is southwest of the maintenance headquarters building. The 6.1 meter (20

foot) by 4.6 meter (15 foot) generator storage area inside the Hazardous Waste Storage portion of the building has a double floor. The top flooring consists of a metal grate. The sub-floor is concrete with no outlet, that acts as a containment basin to catch any spill or release that might occur. The concrete sub-floor is sloped. The low end is considered to be a sump. The sump has no outlet. The building is actively being used by the Bonneville Power Administration (BPA) for storage of waste drums.

Location: The substation is located 0.5 miles northwest of and adjacent to the Energy Northwest property (formerly known as the Washington Public Power Supply System).

Process Description: If a spill occurred, it would collect in the low end of the sloped sub-floor. It would be soaked up and disposed of properly.

Related Sites/ Structures: The site is related to the H. J. Ashe Substation, maintenance headquarters, gas pumps, control house, and switch yards. (See WIDS Sites 600-60 and 600-58).

Waste Type: Chemicals

Waste Description: Annual hazardous waste reports indicate that the following wastes are generated at the Ashe Substation, 1,1,1-Trichloroethane mixture, 1,1,1-Trichloroethane-contaminated soils, acetone waste mixture, spent photographic fluids, fixer, and developer, battery acid and fluid mixture, ferric chloride etching solution waste, methanol waste mixture (Karl Fisher reagent), pentachlorophenol and sodium pentachlorophenol, solvent compound-thinner waste, toluene-isopropanol with potassium hydroxide (titrating solution).

All waste is taken to the generator storage area (SWMU #12). This unit is part of the Flammable, Herbicide, and Toxic Waste Storage Facility Building located southwest of the maintenance headquarters building. Hazardous wastes from maintenance activities at other substations are collected at this location.

Code: 600-60	Classification: Accepted
Names: 600-60; H.J. Ashe Substation Switchyard Facility	Reclassification: None
Type: Electrical Substation	Start Date: 1/1/1976
Status: Active	End Date:

Description: The H.J. Ashe Substation is an active, operating electrical switchyard facility. The H.J. Ashe Substation consists of two large structures, a control house and a maintenance building, and yard areas with smaller buildings used for dry chemical storage and a vehicle fuel station with two underground gasoline tanks. The substation was first energized on December 3, 1976. Structures and equipment include an oil-filled circuit breaker {28, 766 liters (7,600 gallons)}, two underground gasoline tanks {15,140 liters (4,000 gallons) each}, four mineral oil storage tanks {18,925 liters (5,000 gallons)}, hazardous waste, flammable materials, and herbicide storage building {455 kilograms (1,000 pounds)}.

Location: The substation is located 0.5 miles northwest of and adjacent to the Energy Northwest property (formerly known as the Washington Public Power Supply System).

Release Description: Six insulating oil leaks were identified in the switch yard at Reactor #1 on 9-13-90 (C-phase), at CT4885 on 9-13-90 (B-phase), at Reactor #1 on 10-2-90 (I-428), PCB 0-1026 on 4-26-91 and at Reactor #2 on 11-20-90 and 2-20-91 (I-429). There no further documentation on these releases. No cleanup actions were listed. Note that sampling was performed at these areas.

Process Description: The switching substation was built to supply electrical power produced by the Hanford Generating Plant to the Supply System's main electrical grid.

Related Sites/ Structures: There are two Solid Waste Management Units (SWMU) identified at the H. J. Ashe Substation. These are SWMU #12 (sitecode 600-59) - Hazardous and Flammable Storage Area, and SWMU #13 (Sitecode 600-58) Oil and Water Separator.

Waste Type: Chemicals

Waste Description: Annual hazardous waste reports indicate that the following wastes are generated at the Ashe Substation, 1,1,1-Trichloroethane mixture, 1,1,1-Trichloroethane-contaminated soils, acetone waste mixture, spent photographic fluids, fixer, and developer, battery acid and fluid mixture, ferric chloride etching solution waste, methanol waste mixture (Karl Fisher reagent), pentachlorophenol and sodium pentachlorophenol, solvent compound-thinner waste, toluene-isopropanol with potassium hydroxide (titrating solution). Polychlorinated biphenyls (PCBs) are also a potential contaminant of concern at this site because of the releases of insulating oil (See Releases Section).

Code: 600-117 **Classification:** Accepted

Names: 600-117; 300 Area Treated Effluent Disposal Facility (TEDF); 310 Building; 342 Sump **Reclassification:** None

Type: Process Unit/Plant **Start Date:** 1/1/1994

Status: Active **End Date:**

Description: The site includes the main treatment building (310 Building) which is about 27.4 meters (90 feet) wide, 45.7 meters (150 feet) long, 6.7 meters (22 feet) high, and metal in construction; three modular/mobile offices (MO443, MO744, MO745); two exterior Diversion Tanks (19 meters [62 feet] in diameter each); one exterior Equalization Tank (13.7 meters [45 feet] in diameter); two exterior Clarifier Tanks (9.1 meters [30 feet] in diameter each); two drum storage areas; one chemical storage area; all units are surrounded by a chain link fence.

Location: The site address is 780 Uranium St. It is located 1.1 kilometers (0.7 miles) north of 300 Area on the east side of Route 4S and about 0.5 kilometers (0.3 miles) west of the Columbia River.

Process Description: The site treats and disposes of process sewer effluent from the 300 Area. Treatment includes chemical precipitation, selective ion exchange, and UV/peroxide oxidation to destroy organics and cyanide. Pipeline 600-352-PL feeds effluent to the facility. After treatment, the effluent was disposed of at a submerged, single-port outfall in the Columbia River (Site sitecode 600-210). Later, the effluent was returned to the Combined Sewer System via pipeline 300-15. Chemicals used to treat this process sewer discharge include hydrogen peroxide, sodium hydroxide, sulfuric acid, ferric chloride, and ion exchange resins.

Related Sites/ Structures: Facilities associated with 310 Facility TEDF (600-117) operations include the 342 Sump Control Building, the 182-centimeter (72-inch) diversion manhole in the 300 Area, the transfer piping between the 342 sump and the TEDF (see sitecode 600-352-PL), generating facilities that are connected to the 300 Area process sewer, and the TEDF outfall and transfer pipeline (WIDS Site 600-210).

Waste Type: Process Effluent

Waste Description: The 300 Area process sewer discharges via the 342 TEDF Sump to the 310 facility (300 Area TEDF). The wastes discharged to the process sewer is composed of metals, organics, and cyanide. The maximum flow rate the facility is design to accommodate is 1,200 liters per minute (300 gallons per minute). The expected flow rate is approximately 600 liters per minute (150 gallons per minute).

This Site has the Following SubSites:

Code: 600-117:1

Names: 600-117:1; Waste Collection Sump 1; 300 TEDF Sump; 342 Sump

Code: 600-117:1 **Classification:** Accepted

Names: 600-117:1; Waste Collection Sump 1; 300 TEDF Sump; 342 Sump **Reclassification:** None

Type: Process Unit/Plant **Start Date:**

Status: Active **End Date:**

Description: Wastewater from the 300 Area process sewer is collected in a 182-centimeter (72-inch) diameter diversion manhole located just west of Waste Collection Sump 1 via a 41-centimeter (16-inch) ductile iron pipe. A basket strainer on the end of the pipe screens out large objects, protecting the three large pumps. These pumps transfer wastewater to the 310 Facility (300 TEDF) through a 25.4 centimeter (10-inch) high-density polyethylene pipeline. The transfer pipe terminates inside the (300 TEDF) 310 facility at the equalization pipe.

Location: The 600-117:1 sump is about 1.1 kilometers (0.7 miles) southeast of the TEDF facility, and about 115 meters (375 feet) northwest of the 316-1 South Process Pond.

Process Description: The sump contained pumps that transferred wastewater from the 300 Area process sewer to the 300 TEDF.

The SubSite is Part Of:

Code: 600-117

Names: 600-117; 300 Area Treated Effluent Disposal Facility (TEDF); 310 Building; 342 Sump

Code: 600-187 **Classification:** Accepted

Names: 600-187; West Lake Honey Dump Station **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site is located in a depression and appears to have been under water as part of West Lake when it was larger. Vegetation in the area is thick and short except for the lowest areas where the soil is very silty and shows desiccation cracks on the surface. There was no visual evidence of sewage waste in the area.

Location: The site is located south of the western portion of Gable Mountain, at the north end of West Lake (216-N-8). The site is 0.9 kilometers (0.6 miles) east of Route 4 North. A well traveled dirt road leads to West Lake from Route 4 North, about 0.8 kilometers (0.5 miles) past milepost 1.

Related Sites/Structures: The water level in West Lake was affected by the water level in Gable Mountain Pond.

Code: 600-235 **Classification:** Accepted

Names: 600-235; Buried Lead Sheathed Telephone Cables **Reclassification:** No Action (3/9/2005)

Type: Dumping Area **Start Date:** 1/1/1943

Status: Inactive **End Date:**

Description: This site includes buried inactive lead-sheathed telephone cable that was abandoned in place as part of the Integrated Voice Data Telephone System (IVDTS), which was installed in 1988 by U. S. West. This system installed new telephone equipment in most buildings and installed new telephone switching facilities. In some cases the IVDTS reused portions of the old cables.

Location:

Process Description: Beginning in the 1940's, the US Army began installing communication systems across the Hanford project property. The switching centers were originally tied together with lead sheathed cables. As communication systems have evolved over the years, many of the old switching centers were removed. In some cases, the old lines were reused, but in many cases the lead sheathed cables were abandoned in place. Lead-sheathed aerial cable lines ran from the 702-Central Telephone Exchange Building at Richland to switchboards housed in the 1720 Patrol Headquarters in the 100 B, D and F Areas and to the 704 Supervisor's Office Buildings in the 200 East and West Areas, and Building 3706 in the 300 Area, with interconnecting trunk lines between the 100 and 200 Process Areas. Details of the cable sizes have been documented in previous reports. No information has been located indicating underground telephone cables on the North Slope.

Waste Type: Equipment

Waste Description: The lead in the cable is considered hazardous but not the cable itself.

Closure Info: Approximately 204 kilometers (127 miles) of buried, lead-sheathed telecommunications cable has been left in place at the Hanford Site. Of concern is the disposition of this cable (Waste Information Data System [WIDS] site 600-235, Lead Sheathed Telephone Cables), and in particular, whether the lead present in the buried cable poses a risk to human health or the environment if left in place.

On September 15, 2003, representatives of the U.S. Department of Energy, Richland Operations Office (RL), the U.S. Environmental Protection Agency (EPA), and the Environmental Restoration Contractor (ERC) performed a field inspection at several buried lead-sheathed cable locations. Six candidate sites representing a variety of environmental conditions were selected for sampling to determine if releases of lead to the soil surrounding the lead-sheathed cable have occurred at levels that pose a risk to human health or the environment.

The results from field inspections and process knowledge identified the following constituents as contaminants of concern (COCs) and potential contaminants of concern (COPCs): lead-sheathed cable - COC is elemental lead, asphalt insulating material - COPCs include asbestos, PCBs, metals, and polycyclic aromatic hydrocarbons (PAHs) associated with the asphalt, paper insulation on copper wires - COPCs include asbestos and PCBs.

To evaluate the soil surrounding the lead cable (BHI-01714), samples were collected and analyzed for the established contaminants of concern. The HEIS samples were collected on 9/8/04 through 9/29/04. The results from the sampling event were reported as HEIS sample numbers J01MH4 through J01MH9, J01T71 through J01T76 and J01T80 through J01T84. The sampling results were used to support a decision regarding reclassifying the site in accordance with the waste site reclassification guideline TPA-MP-14 process (RL-TPA-90-0001). The sampling results show that the buried lead-sheathed cable does not present a risk to human health or the environment and that current site conditions are consistent with remedial action objectives and the corresponding remedial action goals (RAGs) for remedial action occurring in the Remedial Design Report/Remedial Action Work Plan for the 100 Areas (DOE/RL-96-17, Rev. 5). The concentrations of metals detected in the soil associated with the lead-sheathed cable are also below or consistent with Hanford Site background and upstream Columbia River levels.

Code: 600-257

Classification: Accepted

Names: 600-257; 213-J Magazine Waste Storage Cavern; 213-J Vault; 213-J&K Storage Facility

Reclassification: Interim Closed Out (7/19/2011)

Names: 600-261; 601 Structures; Standard Gauge Railroad Track	Reclassification: None
Type: Foundation	Start Date: 1/1/1943
Status: Inactive	End Date: 1/1/1998
Description: The site consists of the railroad track system on the Hanford site (beginning at Horn Rapids road and proceeding North). The section from Horn Rapids Road to Energy Northwest is still active. The rest is inactive. This site does not include any radioactive unplanned releases that may have effected portions of the track during Hanford operations. The documented radioactive releases are separate WIDS entries.	
Location: The Hanford railroad track system extends from the north side of the Horn Rapids road right-of-way to each operating area of the site, and includes railroad spurs, sidings and junctions.	
Process Description: The railroad was used to move supplies, equipment and reactor fuel around the Hanford site. Coal was delivered to the coal fired steam generating plants by rail car. Large pieces of equipment (pumps and centrifuges) needed to operate the canyon separations facilities and tank farm activities were transported on rail cars. Large burial containers of contaminated waste were removed from the canyon buildings, placed on flat bed rail cars and transported to specific burial trenches with railroad access. Oversight of the railroad between Horn Rapids Road and the Energy Northwest switch (except for the 300 lead) is the responsibility of the Port of Benton (POB), under DOE-RL ownership. Fluor Hanford retains oversight of the other sections of the railroad not included as part of facilities (Tank Farms, PUREX, PFP, N Reactor, etc.). This includes all mainline, spurs, and track within the 200 Areas and the 300 Area that are outside plant or project boundaries.	
Related Sites/ Structures: Movement of contaminated material into and out of the canyon facilities in 200 East and 200 West areas on rail cars resulted in several documented Unplanned Releases located on various rail spurs. The documented UPRs associated with railroad tracks include: 300-8, 200-W-21, 200-W-87, 200-E-44, UPR-200-E-10, UPR-200-E-11, UPR-200-E-12, UPR-200-E-101, UPR-200-E-20, UPR-200-E-20, UPR-200-E-33, UPR-200-E-61, UPR-200-E-69, UPR-200-E-88, UPR-200-E-112, UPR-200-W-3, UPR-200-W-4, UPR-200-W-41, UPR-200-W-44, UPR-200-W-46, UPR-200-W-48, UPR-200-W-58, UPR-200-W-60, UPR-200-W-65, UPR-200-W-69, UPR-200-W-73, and UPR-200-W-117.	

Code: 600-270	Classification: Accepted
Names: 600-270; Horseshoe Landfill; Nike Missile Base	Reclassification: Interim Closed Out (5/20/2011)
Type: Dumping Area	Start Date: 1/1/1950
Status: Inactive	End Date: 1/1/1970
Description: The site is a former historical landfill. The site was part of a former Nike missile base consisting of structures which supported missile launch, control, and maintenance functions, living quarters for base personnel, and storage buildings for hazardous substances use in the maintenance of the facilities and missile operations.	
Location: The site was located on the Fitzner-Eberhardt Arid Lands Ecology Reserve, a.k.a., Arid Lands Ecology (ALE) Reserve. Further the site was located on the northeastern slope of Rattlesnake Mountain about 8 kilometers (5.0 miles) west of the intersection of Highways 240 and 225.	
Process Description: During the base's operation, missile maintenance included the use of solvents, fuels, acids, hydraulic fluid, and paints. All wastes generated during operations were disposed of in onsite landfills, or dumped nearby offsite.	

Related Sites/ WIDS Sites 600-116, 600-270, and 600-271 are all related to Nike missile base operations on

Related Sites/

Structures: the Fitzner-Eberhardt Arid Lands Ecology Reserve.

Waste Type: Demolition and Inert Waste

Waste Description: The majority of the waste consisted of non-hazardous construction and demolition waste, scrap metal and lumber, empty bottles, cans and drums. A summary of the waste found in each of the 6 anomalous areas is described below.

Horseshoe Landfill/A-1 - boulders were encountered at 1.2 meters (4 feet) below ground surface, otherwise there was no evidence of any buried wastes or disturbed soil.

Horseshoe Landfill/A-2 - no evidence of any buried waste or disturbed soil was found.

Horseshoe Landfill/A-3 - abundant surface metal debris, barb wire, miscellaneous scrap metal, miscellaneous building materials; no evidence of any buried wastes or disturbed soil.

Horseshoe Landfill/A-4 - bottles, rusted metal debris, car parts, car chassis, car engine with oil pan missing, 7-208 liter (7-55 gallon) drums ripped open and partially collapsed (empty) were found.

Horseshoe Landfill/A-5 - bottles, pieces of rusted metal, a few animal bones were found.

Horseshoe Landfill/A-6 - no evidence of buried wastes or disturbed soil in three excavations on the west side of A-6 except for copper grounding wire found about 15 centimeters (6 inches) below ground surface. Sheet metal scrap, fence post, wood debris, 0.61 meter (2 foot) diameter washing machine washtub, abundant 2.54 centimeter (1 inch) diameter cable, cement blocks, bottles, metal scrap, 3 ripped and partially collapsed 208 liter (55 gallon) drums, car engine with oil pan missing, wire, some plastic/metal parts, 4-25.4 centimeter (4 10 inch) battery-type containers with screens.

Waste Type: Chemicals

Waste Description: Suspected wastes included solvents, fuels, acids, hydraulic fluid, and paints. Contaminants sampled for were barium, chromium, lead, acetone, bis (2-ethylhexyl) phthalate, butylbenzylphthalate, diethylphthalate, di-n-butylphthalate, phenol, chlordane, DDT, DDE, DDD, Endosulfan B, Endrin, Methyloxychlor, gasoline, diesel, heavy oils, diesel. Based on the results from soil excavated at A-6, the original 16 contaminants (draft ROD) were expanded to include DDT, DDE, and DDD.

Closure Info: Based on findings from similar landfills on the North Slope of the Hanford Site, EPA and Ecology required that limited characterization of the Horseshoe Landfill be carried out. Between July 5 and 12, 1994, Golder Associates (under contract to the USACE) conducted electromagnetic (EM) profiling, magnetics (MAG), and ground-penetrating radar (GPR) surveys at the Horseshoe Landfill. The survey covered an area approximately 152 meters (500 feet) by 183 meters (600 feet). Anomalous EM zones were categorized as low to high depending on the deviation from background levels. Anomalous zones were identified as A-1 through A-6. Full excavation of each anomaly was only required when field screening indicated the possible presence of contaminants.

The ROD (EPA 1993) presented the cleanup goals for 16 contaminants identified as potentially occurring at the IU-1 sites. Though DDT was not one of potential contaminants, Washington State has established a 1 mg/kg criterion for DDT. The cleanup levels for the 16 contaminants of concern were based on the Washington State Model Toxics Control Act (MTCA) Methods A, B, C.

In order to excavate for the presence or absence of hazardous material, each geophysical anomaly was excavated in longitudinal trenches, 1.5 to 3 meters (5 to 10 feet) wide and 1 to 2 meters (3 to 7 feet) deep. Trenching activities for each disposal cell consisted of excavating, inventorying, and segregating any potentially hazardous materials.

Excavated materials were screened visually and by field instruments. Field test kits were onsite and used for field screening when the presence of contaminated materials was suspected. Depending on the suspected presence of contaminated materials, soil samples were collected for

offsite analysis. Contaminated materials found during the excavation and/or by screening methods were inventoried and segregated (by shovel or trackhoe). Large volumes of contaminated materials encountered during excavation were stockpiled near the excavation site on 6-mil visqueen and covered with hay-bale tarps.

Information regarding each excavation was recorded including site activities, excavation dimensions, samples collected, results of onsite field screening, date excavated, location and number of offsite soil samples collected.

Seventeen subsurface soil/debris samples, a background sample, a backfill soil sample, and three duplicate samples were collected as part of the investigation at the Horseshoe Landfill. See field work section related to analytical sampling.

At the Horseshoe Landfill, approximately 1911.5 cubic meters (2,500 cubic yards) of soil contaminated with the pesticide DDT and its breakdown products were discovered. These soils were shipped to the Chemical Waste Management hazardous waste landfill in Arlington, Oregon. No other contaminants were detected above regulatory cleanup levels.

Following cleanup actions, excavations were backfilled, compacted using nonhazardous materials and clean fill, and graded to original conditions.

Code:	600-271	Classification:	Accepted
Names:	600-271; Nike Missile Base Landfill	Reclassification:	Deleted From NPL (9/30/1996)
Type:	Dumping Area	Start Date:	1/1/1950
Status:	Inactive	End Date:	1/1/1970
Description:	The site is a former historical landfill. The site was part of a former Nike missile base consisting of structures which supported missile launch, control, and maintenance functions, living quarters for base personnel, and storage buildings for hazardous substances use in the maintenance of the facilities and missile operations.		
Location:	The site was located on the Fitzner-Eberhardt Arid Lands Ecology Reserve, a.k.a., Arid Lands Ecology (ALE) Reserve. Further the site was located on the northeastern slope of Rattlesnake Mountain about 8 kilometers (5.0 miles) west of the intersection of Highways 240 and 225. This site is about 305 meters (1,000 feet) south of the Horseshoe Landfill Site (600-270).		
Process Description:	During the base's operation, missile maintenance included the use of solvents, fuels, acids, hydraulic fluid, and paints. All wastes generated during operations were disposed of in onsite landfills, or dumped nearby offsite.		
Related Sites/ Structures:	The site is related to other structures that were a part of the Nike Missile Base. See WIDS site 600-116 for an overall description of other structures.		
Waste Type:	Demolition and Inert Waste		
Waste Description:	The majority of the waste consisted of non-hazardous construction and demolition waste, scrap metal, lumber, empty bottles, and cans.		
	Nike Missile Base Landfill/A1 - concrete blocks, bottles, wood, and metal debris. Nike Missile Base Landfill/A2 - surface debris; long metal U-bolts, sheet metal scrap, miscellaneous scrap metal. There was no evidence of any buried waste or disturbed soil. Nike Missile Base Landfill/A3 - There was no evidence of any buried waste or disturbed soil.		
Closure Info:	Based on findings from similar landfills on the North Slope of the Hanford Site, EPA and Ecology required that limited characterization of the Nike Missile Base be carried out. Between		

July 5 and 12, 1994, Golder Associates (under contract to the USACE) conducted electromagnetic (EM) profiling, magnetics (MAG), and ground-penetrating radar (GPR) surveys at the Nike Missile Base Landfill. Over an area of approximately 152 meters (500 feet) by 137 meters (450 feet), 9 separate Electromagnetic anomalies (EM) areas were identified.

Anomalous EM zones were categorized as low to high. A total of three anomalies were excavated (8/17/1994 - 8/18/1994) at the Nike Missile Base Landfill. Anomalies that were excavated consisted of the two high EM anomalies and one moderate EM anomaly located just to the northeast of the northerly EM high. Anomalous zones were identified as A-1 through A-3. Full excavation of each anomaly was only required when field screening indicated the possible presence of contaminants.

The ROD (EPA 1993) presented the cleanup goals for 16 contaminants identified as potentially occurring at the IU-1 sites. Though DDT was not one of potential contaminants, Washington State has established a 1 mg/kg criterion for DDT. The cleanup levels for the 16 contaminants of concern were based on the Washington State Model Toxics Control Act (MTCA) Methods A, B, C.

In order to excavate for the presence or absence of hazardous material, each geophysical anomaly was excavated in longitudinal trenches, 1.5 to 3 meters (5 to 10 feet) wide and 1 to 2 meters (3 to 7 feet) deep. Trenching activities for each disposal cell consisted of excavating, inventorying, and segregating any potentially hazardous materials.

Excavated materials were screened visually and by field instruments. Field test kits were onsite and used for field screening when the presence of contaminated materials was suspected. Depending on the suspected presence of contaminated materials, soil samples were collected for offsite analysis. Contaminated materials found during the excavation and/or by screening methods were inventoried and segregated (by shovel or trackhoe). Contaminated materials encountered during excavation were stockpiled near the excavation site on 6-mil plastic and covered with hay-bale tarps.

Information regarding each excavation was recorded including site activities, excavation dimensions, samples collected, results of onsite field screening, date excavated, location and number of offsite soil samples collected.

A single composite sample was collected from A-1, A-2, and A-3. An aliquot was taken from each anomaly with the exception of the VOC sample, which was taken from A-1. See field work section for sample results. Two soil screening samples from A-1 and A-2 to analyze for hydrocarbons in the soil. No hydrocarbons were detected in either sample.

Following cleanup actions, excavations were backfilled, compacted using nonhazardous materials and clean fill, and graded to original conditions.

Code: 600-272	Classification: Accepted
Names: 600-272; Petroleum-Contaminated Borehole; Well 699-43-2	Reclassification: None
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: The site is hydrocarbon contamination in well 699-43-2. Well 699-43-2 is a 16.8-centimeter (6-5/8-inch) diameter well with a 10-centimeter (4-inch) PVC liner. Limited information is available about well construction. This well is believed to have been drilled to a depth of 120 meters (390 feet) in 1980 to support geologic studies for reactor citing. The well is currently	

103.4 meters (339 feet) deep. The depth to water is 9 meters (26 feet) below land surface. It is believed that the well is not screened to groundwater and is open at the bottom.

Location: The well is located in a remote part of the 600 area, approximately 1.5 miles south of the former Hanford townsite, and approximately 300 meters (1000 feet) from the nearest vehicle access. Well 699-43-2 is approximately 600 meters (2000 feet) from the Columbia River.

Release Description: While the source of hydrocarbons in well 699-43-2 is unknown, the lack of vehicle tracks adjacent to the well, and the determination that the hydrocarbons were diesel fuel or kerosene derived suggests that contamination may have occurred during drilling.

Waste Type: Oil

Waste Description: The waste is an oil/water matrix. A sample of the water in the well showed 4.5 milligrams/liter (mg/L) of total petroleum hydrocarbons, 12.3 mg/L of oil and grease, and about 360 mg/L (36,000 micrograms per liter) of unknown alkanes. The likely source is diesel fuels or kerosene type materials. The liquid waste matrix will designate as D001 due to its low flash point.

Code: 600-273

Classification: Not Accepted (Proposed)

Names: 600-273; Pile of Red Material at Riverland

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site is a pile of red material about 1.4 meters (4.5 feet) high, 9 meters (30 feet) long, and 5 meters (15 feet) wide. The volume calculated by GPS is 113 cubic meters. The site is near the end of a long berm headed west from the old railroad maintenance yard at Riverlands. Patches of similar colored soil can be seen throughout the area. No vegetation is growing in the upper half of the pile, but cheatgrass and other weeds have established at the bottom, presumably where their roots can reach soil. A magnet will pick up some of the fine particles in the pile, suggesting that the material is a crushed iron ore.

Location: The site is at the far west end of the railroad maintenance facility, about 1.6 kilometers (1 mile) from Highway 24, and 150 meters (500 feet) north of the road to the Midway Substation. It is visible from the Midway Substation road.

Related Sites/Structures: This site is at the far west end of 600-101, the Riverland Rail Yard Maintenance Facility.

Waste Type: Soil

Waste Description: The pile appears to be a pile of iron ore dumped from a hopper car so the car could be worked on at the maintenance facility. Iron ore was used in making the concrete for reactors since it provided additional shielding. A similar mound of material was found at the 100 B/C Area. Samples were taken of that mound. The material at 100 B/C contained 48% iron, 1.5% chromium, and 0.2% aluminum.

Code: 600-278

Classification: Accepted

Names: 600-278; Bioremediation Pad Within Gravel Pit 9; Oil Contaminated Soil

Reclassification: Closed Out (5/4/2004)

Type: Surface Impoundment

Start Date: 1/1/1999

Status: Inactive

End Date:

Description: The bioremediation area is located in the eastern section of Gravel Pit #9.

Location: Pit #9 is located approximately 1.2 kilometers (2 miles) north of 300 Area, east of Route 4S.

Process: The soil was removed from around the 284 fuel oil day tanks and spread onto the ground inside

Process Description: Pit 9 in 1999 to facilitate bioremediation of petroleum contained in the soil. In 2000, the bioremediation area had been posted as an Underground Radioactive Material Area and later a Soil Contamination Area. The posting was the result of the fact that the 300 Area is posted as an Underground Radioactive Material Area, so the removed soil was potentially contaminated. In June 2003, it was determined the radiological postings were not appropriate and were removed.

Related Sites/ Structures: The site is associated with the 384 Day Tanks (300-223) and Gravel Pit #9 (600-246).

Waste Type: Oil

Waste Description: The soil on the bio remediation pad was originally contaminated with petroleum (fuel oil #6 and diesel oil #2) from the excavation of the 384 Day Tanks (sitecode 300-223).

Closure Info: Soil samples were collected in September 2003 and analyzed for petroleum hydrocarbons to check the progress of the bioremediation. Results indicated the levels were below chapter 173-340 of the Washington Administrative Code (WAC) limits. The results were sent to Ecology by RL in a letter entitled "Completion of corrective action for petroleum contaminated soil associated with the 384 powerhouse day tanks," dated March 1, 2004. Once Ecology confirms that the soil meets cleanup standards, it will be used for cover at the inert waste landfill located at Pit 9.

Code: 600-284-PL

Classification: Accepted

Names: 600-284-PL; Cross Site Transfer Pipeline; Lines V360, V361, V362, V363, V364 and V366; Old Cross Site Transfer Line; Original Cross Site Transfer Pipeline; Piping Associated with UPR-600-20, Cross Site Transfer Line

Reclassification: None

Type: Encased Tank Farm Pipeline

Start Date: 1/1/1952

Status: Inactive

End Date: 1/1/1995

Description: The waste site is the underground pipeline that is located beneath the surface stabilized UPR-600-20 soil contamination site. It is posted with Underground Radioactive Material signs.

Location: The encased pipeline runs from 241-UX-154 Diversion Box, adjacent to 221-U inside 200 West Area, to the 241-ER-151 Diversion Box inside 200 East Area.

Release Description: The surface of the buried waste transfer line became contaminated through biological transport of radioactive materials that leaked in the pipeline encasement and windblown particulates from the vent station. In March 1988, while conducting a radiological survey of the 241-EW-151 Vent Station (located approximately mid way between 200 East and 200 West Areas on the transfer line) contamination was identified approximately 100 meters (300 feet) outside the established radiation zone boundaries of the vent station, above the transfer line. The Mobile Surface Contamination Monitor (MSCM) tractor was used to survey the entire surface of the pipeline. Numerous spots of contamination were identified at various locations along the entire length of the transfer line. Contamination levels ranged from a few hundred counts per minute to 750 millirem per hour. To characterize the integrity of the pipeline, eight boreholes were drilled with an auger at four locations along the transfer line. Although no contamination was found to have leaked below the pipeline encasement, contamination was found in sagebrush growing next to the encasement. This indicated that the roots of the sagebrush had penetrated the encasement. The contamination was given an Unplanned Release number UPR-600-20 in 1989.

Process Description: The cross site transfer line was originally constructed in 1952 to support the Uranium Metal Recovery operations. Various process and tank farm waste has been transported between 200

East and 200 West areas through this underground concrete encased group of pipelines. The cross site transfer line consists of six stainless steel pipelines (V360, V361, V362, V363, V364, V366) inside a concrete encasement. The encasement type is known as 6-59, indicating there are six lines inside a 59 inch wide encasement. The concrete encased stainless steel pipelines are buried at depths that range from 1.5 to 4.5 meters (5 to 15 feet). There are 58 encasement test risers (swab risers) spaced regularly along the pipeline that provided access to the encasement void space. This cross site line was replaced with a new pipeline in 1995 (see 600-269).

Related Sites/ Structures: The pipeline is associated with the 241-UX-154 Diversion Box, the 241-ER-151 Diversion Box, 241-EW-151 Vent Station and UPR-600-20.

Code: 600-288 **Classification:** Accepted
Names: 600-288; Soil Corrosion Test Site **Reclassification:** None
Type: Experiment/Test Site **Start Date:** 1/1/1993
Status: Inactive **End Date:**
Description: The waste site is approximately a 4.5 meter (15 foot) diameter circle. The area contains five, 15 centimeter (6 inch) diameter, polyvinyl chloride shafts, one 7.6 centimeter (3 inch) diameter PVC soil moisture access port and one 5 centimeter (2 inch) diameter PVC instrument access shaft. The shafts are set in the ground to a depth of approximately 9 meters (30 feet). Only a few inches of each PVC pipe casing is visible above the ground surface.
Location: The test site is located east of Route 3, northeast of 200 West Area. It is north of the Meteorology Station (622-R) and the south of an abandoned airstrip.
Process Description: The site was used to test the pieces of painted low carbon steel and galvanized drums to assess the effect of corrosion when the material was buried in Hanford soil.

Code: 600-289 **Classification:** Discovery
Names: 600-289; Dumping Area Near Shooting Range **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of scattered empty containers for hazardous materials.
Location: The site is located north of the Patrol Training Academy buildings MO222, MO302, and 661A, just west of 663.

Code: 600-338 **Classification:** Discovery
Names: 600-338; Diesel Spill near 623A Bldg on Rattlesnake Mountain **Reclassification:** None
Type: Unplanned Release **Start Date:** 1/1/2008
Status: Inactive **End Date:** 1/1/2008
Description: The site consisted of a diesel fuel leak near the northwest corner of Building 623A, located on Rattlesnake Mountain. The leak was a result of a leaky fitting on a diesel fuel return line from an emergency power generator. It was repaired September 12, 2008. The leak resulted in an affected surface area of approximately 0.61 meters to 0.91 meters (2-3 feet) wide by 1.52

meters to 1.83 meters (5-6 feet) long. Soil remediation began on September 18, 2008. The area is not marked or posted in the field.

Location: The release was located between a diesel tank and the building, near the northwest corner of Building 623A (Plant Radio Relay Bldg on top of Rattlesnake Mountain).

Process Description: During a routine visit of the 623A building on September 11, 2009, an area of discolored soil was discovered on the west side of the building. Further investigation noted that fittings from the emergency back-up generator near the building had leaked approximately 20 gallons of fuel onto the ground. The leak was in a previously disturbed area. Proper notifications were made and the leaking fittings were repaired on September 12, 2008. Soil excavation was conducted between September 18, 2008 and October 28, 2008. Samples were collected on October 8, October 28, 2008 and November 25, 2008.

Related Sites/ Structures: The spill was associated with the 623A building.

Waste Type: Oil
Waste Description: Diesel fuel oil (number 2) released to the ground via a leaking pipe fitting.

Code: 600-349 **Classification:** Accepted

Names: 600-349; Unexploded Ordnance (UXO) outside of 600-149 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of potential Unexploded Ordnance (UXO) in an area bounded by the entire perimeter of the 600-149, Small Arms Range, Rifle and Pistol Range, 661 Complex, 600-54 (See Subsites) waste site extending from the perimeter as far as a fired rifle grenade could travel. The area with the highest potential to contain munitions and explosives of concern includes a portion of Gable Mountain south of Prid Canal.

Related Sites/ Structures: 600-149, Small Arms Range, Rifle and Pistol Range, 661 Complex, 600-54 (See Subsites)

Code: 600-350 **Classification:** Accepted

Names: 600-350; PNL Water Catchment Experiment **Reclassification:** Interim Closed Out (9/14/2011)

Type: Experiment/Test Site **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of two separate fenced areas containing linear soil mounds.

Location: This feature is located approximately 700 meters northwest of the Hanford town site's former high school and 122 meters east of route 2N.

Process Description: The Pacific Northwest Laboratory (PNL) constructed this site to perform rain harvesting experiments. The experiments were done to study the use of water harvesting (the collection and use of rainfall runoff) to restore the vegetative productivity of strip mined lands in arid regions. The study tested the technical and economic feasibility of using partially leveled spoil banks at strip mines as catchment areas to collect and direct runoff to the top soiled valley floor where crops were cultivated. The study was performed from 1976 through 1981 (PNL-4538). The site was modified with a small drag line to resemble the smoothed spoil banks of a coal

mine; cobble alluvium of the Columbia River served as spoil. Seven areas were prepared, three with valleys that ran north to south, and three with valleys that ran east to west; one area was prepared without adjacent slopes to simulate leveled spoil banks. The north-south valleys were protected from the strongest winds in the region, while the east-west valleys were parallel with the strongest winds. The valleys were each 90 m (300 ft) long by 18 m (60 ft) wide at the top of the catchment areas ("spoil banks") and 4 m (13 ft) wide at the surface of the topsoil, with a 33° angle of repose for each slope. The runoff efficiency of the surface was evaluated by applying a pore filling or waterproofing substance to the surface of the spoil banks. Three materials (rubber sheeting, paraffin and asphalt-rubber) were used for slope treatments. The rubber sheeting was 1.59 mm (1/16 in.) thick EPDM (butyl rubber) installed in September 1976 in one NS valley. Paraffin (approximate melting point 53°C) was melted and sprayed at the rate of approximately 1 kg/m² on the cobbled catchment area of a NS valley in May of 1977 and on the smooth catchment area in an EW valley in September 1977. Asphalt-rubber, a mixture of ground rubber and asphalt, is used as a crack sealer on roadways and as a liner for reservoirs. This treatment was applied to catchment areas of an EW valley in September of 1977 at the rate of 4 to 8 l/m². Catchment (slope) treatments at Hanford included: Flat Control - NS oriented area with no adjacent slopes or catchment areas Rubber sheeting - NS valley with rubber sheeting on catchment area Asphalt-rubber - EW valley with asphalt-rubber on catchment area Paraffin NS - NS valley with paraffin on catchment area Paraffin EW - EW valley with paraffin on catchment area Bare surface NS - NS valley with no treatment on catchment area Bare surface EW - EW valley with no treatment on catchment area

Closure Info: Remedial action at the 600-350 waste site took place from March 14 to April 4, 2011, and consisted of removing the asphalt coating from the "V"-shaped area between and on the sides of the mounds. The asphalt debris was directly loaded into containers for disposal at the Environmental Restoration Disposal Facility.

Based on observations during a March 2010 walkdown to support remedial action, it was determined that the asphalt material should be removed and the mounds flattened for aesthetic purposes.

Code: 600-351	Classification: Accepted
Names: 600-351; Stained areas outside of 100-F Area	Reclassification: Interim Closed Out
Type: Unplanned Release	Start Date:
Status: Inactive	End Date:
Description: This site has been remediated. The site contained two stained soil areas. The northern area consisted of stained, crusted soil and no vegetation, measuring 4 meters (13.2 feet) in diameter. The southern area consisted petroleum based material released to the ground. The soil was crusted with no vegetation. It measuring 2 meters (6.6 feet) in diameter. Empty oil cans were scattered around the area	
Location: The areas were located approximately 76 meters (250 feet) south of F Ave. (north). The northern area was located at Easting: 579790.07 Northing: 146715.53. The southern area was located at Easting: 579789.44 Northing: 146706.44.	

Code: 600-352-PL	Classification: Accepted (Proposed)
Names: 600-352-PL; Pipeline from 342 Sump to 310 Facility (300 Area TEDF); 300 Area Retention/Transfer System (RTS) Pipeline	Reclassification: None
Type: Process Sewer	Start Date: 1/1/1994

Status: Active

End Date:

Description: The underground pipeline is constructed of 25 centimeter (10 inch) diameter high density polyethylene pipe.

Location: The majority of the pipeline is located north of the 300 Area. It begins at the 342 waste collection sump and extends northward to the 310 Retention Storage facility. It follows the abandoned rail spur and then parallels Stevens Drive.

Process Description: The 300 Area Retention/Transfer System is a batch release operation. 300 Area effluent is pumped into the 300 Area Retention/Transfer System (RTS) via this pipeline and the 342 waste collection sump. The pipeline terminates at the 310 valve vault. The water is temporarily stored in one of three retention tanks located in the 310 facility complex. After being analyzed, the effluent below regulatory limits is returned to the 300 Area Process Sewer pipeline (see sitecode 300-15).

Related Sites/ Structures: The pipeline is associated with the 342 waste Collection Sump and the 310 Facility (see sitecode 600-117).

Code: 600-353

Classification: Accepted

Names: 600-353; Non-Operational Property Evaluation Zone 1, Areas of Distressed Vegetation and Oil Filter Debris

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: During a Non-Operational Property Evaluation walkdown, an area of concern was located south of Route 11A. One location containing deteriorating crushed oil filters was identified. Another location, west of the oil filters was found to be devoid of vegetation. Each location measured approximately 25 square feet.

Location: The area of concern is located northwest of 200 West Area, south of Route 11A. It is east of the intersection of Route 11A and Route 6.

Code: 600-354

Classification: Accepted

Names: 600-354; Non-Operational Property Evaluation Zone 1, Debris Field West of Army Loop Road

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The 600-354 debris field, located west of Army Loop Road, includes multiple miscellaneous debris items scattered across an area roughly 800 meters long and 500 meters wide. Items identified during Non-Operational Property Evaluation walkdowns include rusty cans, buckets, metal debris, tar, transite and areas of disturbed vegetation. Several large mounds of dirt were noted, but their function is unclear. There is evidence of a trench containing visible surface debris with the potential of containing subsurface debris. A previously identified concrete bottom pit is include in this waste site.

Location: The items associated with 600-354 are located south of the intersection of Route 11A and Route 6, on the west side of Army Loop Road. The area is northwest of 200 West Area.

Code: 600-355

Classification: Accepted

Names: 600-355; Non-Operational Property Evaluation Zone 1, Ridgeline West of Army Loop Road **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The elevated area is known as a mound or a ridgeline. Miscellaneous debris is visible at several locations along the ridgeline. Visible debris includes paint cans, tar, transite and hydraulic fuel cans.

Location: The waste site is located south of Route 11A and west of Army Loop Road.

Code: 600-356 **Classification:** Accepted (Proposed)

Names: 600-356; Tar Deposit West of Susie Junction **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The waste site contains two areas if pebbles and rocks with visible concentrations of dark, tar material. One area is a large tar deposit. It measures approximately 18 meters by 11 meters. A smaller area of tar, measuring approximately 0.3 meters by 1 meter, is located southeast of the large area.

Location: The areas are located west of the railroad junction known as Susie Junction. The center point coordinates of the large area are N140640.7; E566609.9.

Code: 600-357 **Classification:** Not Accepted

Names: 600-357; Geophysical Testing Pit #2 near 618-10 **Reclassification:** None

Type: Experiment/Test Site **Start Date:**

Status: Inactive **End Date:**

Description: PNNL constructed a geophysical test bed near 618-10 in 1981. The test bed was constructed by excavating the ground to form a depression approximately 61 m (200 ft) long by 15 m (50 ft) wide. The depression was filled to grade with the excavated soils after the targets were buried in the test bed. The surface remained indistinguishable from the surrounding terrain except for the lack of vegetation.

Location: The test bed is approximately 200 meters northeast of the 618-10 burial ground.

Process Description: Forty-four targets were buried at the PNNL Test Bed. They included steel and plastic pipes (with varying diameters and wall thicknesses), empty 55 gallon drums, finned objects, projectiles of various dimensions, aluminum boxes, aluminum cylinders, spheres (Styrofoam and aluminum), a wood box, a steel box, a brass rod and a conductivity probe. Geophysical testing using various instrumentation was performed at the test bed between 1981 and 1984.

Code: 600-358 **Classification:** Accepted

Names: 600-358; Scattered Waste Areas in the Vicinity of the Gable Mountain Firing Range **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site consists of scattered CERCLA regulated debris identified during the unexploded

ordinance (UXO) characterization and clearance of the 600-149:1 waste site. The debris included a lead battery, a lead chunk, a burn area, a suspect drum or pipe and a 380 meter long asbestos pipe with staging piles of the asbestos pipe previously removed. In October 2011, the asbestos pipeline and staging areas were determined to be Miscellaneous Restoration items.

Location: The site is located north of the east end of Gable Mountain near the Rifle and Pistol Range.

Related Sites/ 661 Rifle and Pistol Range

Structures:

Code: 600-359 **Classification:** Accepted

Names: 600-359; Non-Operational Property Evaluation Zone 2, Location 1 Debris and Distressed Vegetation **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: During a Non-operation Property Evaluation walkdown, several rubber shoe covers were identified laying on the ground surface, adjacent to a railroad track. Some evidence of mechanical disturbance was also noted near the shoe covers. A devegetated area, measuring approximately 200 feet by 100 feet, was found. Stained soil, measuring approximately 10 feet by 10 feet, was identified near the railroad switch box.

Location: The area is located approximately 700 meters north of Route 11A and approximately 3000 meters west of Route 4N.

Process Rubber shoe covers have a potential of being contaminated.

Description:

Code: 600-360 **Classification:** Accepted

Names: 600-360; Non-Operational Property Evaluation Zone 2, Location 2 Debris Sites **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: During field walkdowns several areas of debris were identified. Debris included cans, drums, wood and a 35 gallon cylinder tank. Some areas of devegetation were also noted.

Location: The area is approximately 1000 meters west of the intersection of Route 11A and Route 4 North. The majority of the area is on the north side of Route 11A, but a portion extends to the south side of Route 11A.

Code: 600-361 **Classification:** Accepted

Names: 600-361; Non-Operational Property Evaluation Zone 2, Location 3 Debris **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: During a site walkdown, a considerable amount of debris was identified. The debris included rubber shoe covers, wood, metal cans, drums aerosol cans, oil filters and electrical parts. A mound of asphalt, measuring approximately 300 feet by 150 feet was also noted. A 30 foot diameter area contained stained soil and stressed vegetation.

Location: The area is located about 500 meters north of the intersection of Route 11A and Route 4N. The majority of the area is located on the west side of Route 4N, but a portion is located on the east side of Route 4N.

Code: 600-362 **Classification:** Accepted

Names: 600-362; Non-Operational Property Evaluation Zone 2, Location 4 Debris and Anomalies **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: Nine items were identified on the east side of Route 4N, near waste site 600-282. A tar area was estimated to cover approximately 0.01 acres of ground. An irregularly shaped area of distressed vegetation and the remains of a wooden building covered an area measuring approximately 0.06 acres. A small area of stressed vegetation and two oil filters were noted. A depression resembling a trench was identified. The vegetation within the trench was different than the surrounding vegetation. The trench measures approximately 0.04 acres. An area of stressed vegetation, measuring approximately 10 by 10 feet, was noted. An area encompassing approximately 1.5 acres was identified that appeared to have been mechanically disturbed. It contained mounds of soil, distressed vegetation and a pit containing a trash can and tumbleweeds. Another mechanically disturbed area was identified near waste site 600-40. It includes a mound that resembles a loading ramp. A pit was found southwest of the 600-40 site. The pit measured approximately 16.8 meters (55 feet) by 12.2 meters (40 feet). The pit contains aged lumber and a tar-like substance.

Location: The majority of the area is located on the east side of Route 4N. A portion of the area is located on the west side of Route 4N. It is approximately 2500 meters north of the intersection of Route 4 N and Route 11A.

Code: 600-363 **Classification:** Accepted

Names: 600-363; Non-Operational Property Evaluation Zone 2, Location 5 Debris; Walkdown Area 7 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: An area measuring approximately 30 by 30 feet was identified that contains a significant amount of surface debris. The debris includes lumber, roofing material transite, solidified tar and asphalt.

Location: The area is located approximately 1400 meters north of Route 11A and 2000 meters west of Route 2N.

Code: 600-364 **Classification:** Accepted

Names: 600-364; Non-Operational Property Evaluation Zone 2, Location 6, Electrical Parts Debris, Area 24 **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: The site encompasses approximately 15 acres. The majority of the debris is related to discarded electrical parts, such as fuses, light bulb tips and foam insulation.

Location: The site is located approximately 1.8 miles east of the intersection of Route 2N and Route 11A

and approximately 800 meters south of Route 11A.

Code: 600-365 **Classification:** Accepted
Names: 600-365; Debris Landfill adjacent to 600-228, H-40 Anti-Aircraft Gun Site debris **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The waste site appears to be a small landfill or dumping area. Old glass bottles and cans were visible.
Location: This site is located southeast of the 200 East Area, on the south side of Route 4 South. The dumping area is located southeast of the H-40 Anti-Aircraft Gun Site.
Related Sites/ Structures: The debris is associated with the H-40 Anti-Aircraft Gun Site.

Code: 600-366 **Classification:** Not Accepted
Names: 600-366; PNNL Geophysical Test Site West of 300 Area **Reclassification:** None
Type: Experiment/Test Site **Start Date:**
Status: Inactive **End Date:**
Description: This feature consists of a subsurface feature containing nine buried inert objects ranging from near surface to 4.2 meters below ground surface and two acoustic boreholes.

Code: 600-367 **Classification:** Accepted
Names: 600-367; Burial Pit near Little Egypt **Reclassification:** None
Type: Burial Ground **Start Date:**
Status: Inactive **End Date:**
Description: The site is a ditch where a trailer and some equipment that burned during a wildfire was buried.
Location: The pit is located approximately 100 meters (328 feet) north of the Hanford Geotechnical Engineering and Development Cold Test Facility (aka Little Egypt), near the test facility access road.

Code: 600-368 **Classification:** Accepted
Names: 600-368; Segment 4 Stained Soil #1 **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a 15 square meter (157 square feet) area covered with green granules. The feature is approximately 130 m (427 ft) west of the Leazer Spur.
Location: The site is located 20 m (66 ft) north of Route 1 and 440 m (1,444 ft) west of Route 2 North. E579763.92, N145328.32
Process Description: In 1944 temporary construction buildings were housed there including various warehouses, the crane operators' loft, riggers' loft and an ice storage pit (C-3316, HAN-10970 Volume 2, pp.

347, 492 and 520). The Leazer Spur was also known as the Pierce Siding (H-7-618). The Salvage/Scrap Yard (also described as being at Leazer Spur) was a kilometer south of the warehouses and operated as late as December 1948 (HW-12086, p. 192). It is not known what if any relationship existed between the two complexes.

Code: 600-369 **Classification:** Accepted

Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This site consists of eight areas that are devoid of vegetation near the Leazer Spur. The site has been divided into eight subsites as follows:
 600-369:1, Segment 4 Bare Ground and Crusted Soil Area 1
 600-369:2, Segment 4 Bare Ground and Crusted Soil Area 2
 600-369:3, Segment 4 Bare Ground and Crusted Soil Area 3
 600-369:4, Segment 4 Bare Ground and Crusted Soil Area 4
 600-369:5, Segment 4 Bare Ground and Crusted Soil Area 5
 600-369:6, Segment 4 Bare Ground and Crusted Soil Area 6
 600-369:7, Segment 4 Bare Ground and Crusted Soil Area 7
 600-369:8, Segment 4 Bare Ground and Crusted Soil Area 8

Location: The site is located on either side of Route 1 to the west of Route 2 North.

600-369:1, Segment 4 Bare Ground and Crusted Soil Area 1; E579937.3 , N145487.63
 600-369:2, Segment 4 Bare Ground and Crusted Soil Area 2; E579803.50 , N145380.74
 600-369:3, Segment 4 Bare Ground and Crusted Soil Area 3; E579812.38 ,N145204.89
 600-369:4, Segment 4 Bare Ground and Crusted Soil Area 4; E579736.30 ,N145178.74
 600-369:5, Segment 4 Bare Ground and Crusted Soil Area 5; E579952.40 ,N145351.86
 600-369:6, Segment 4 Bare Ground and Crusted Soil Area 6; E579633.55 ,N145336.17
 600-369:7, Segment 4 Bare Ground and Crusted Soil Area 7; E579895.23 ,N145368.72
 600-369:8, Segment 4 Bare Ground and Crusted Soil Area 8; E579698.99, N145413.13

Process Description: In 1944 temporary construction buildings were housed there including various warehouses, the crane operators' loft, riggers' loft and an ice storage pit (C-3316, HAN-10970 Volume 2, pp. 347, 492 and 520). The Leazer Spur was also known as the Pierce Siding (H-7-618). The Salvage/Scrap Yard (also described as being at Leazer Spur) was a kilometer south of the warehouses and operated as late as December 1948 (HW-12086, p. 192). It is not known what if any relationship existed between the two complexes.

This Site has the Following SubSites:

Code: 600-369:1

Names: 600-369:1; Segment 4 Bare Ground and Crusted Soil Area 1

Code: 600-369:2

Names: 600-369:2; Segment 4 Bare Ground and Crusted Soil Area 2

Code: 600-369:3

Names: 600-369:3; Segment 4 Bare Ground and Crusted Soil Area 3

Code: 600-369:4

Names: 600-369:4; Segment 4 Bare Ground and Crusted Soil Area 4

Code: 600-369:5
Names: 600-369:5; Segment 4 Bare Ground and Crusted Soil Area 5
Code: 600-369:6
Names: 600-369:6; Segment 4 Bare Ground and Crusted Soil Area 6
Code: 600-369:7
Names: 600-369:7; Segment 4 Bare Ground and Crusted Soil Area 7
Code: 600-369:8
Names: 600-369:8; Segment 4 Bare Ground and Crusted Soil Area 8

Code: 600-369:1 **Classification:** Accepted
Names: 600-369:1; Segment 4 Bare Ground and Crusted Soil Area 1 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a 6 m (20 ft) diameter area burn pit.
Location: The site is located 190 m (623 ft) north of Route 1 and 147 m (482 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:2 **Classification:** Accepted
Names: 600-369:2; Segment 4 Bare Ground and Crusted Soil Area 2 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a 3 m (10 ft) diameter area devoid of vegetation.
Location: The site is located 87 m (285 ft) north of Route 1 and 360 m (1181 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:3 **Classification:** Accepted
Names: 600-369:3; Segment 4 Bare Ground and Crusted Soil Area 3 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a large area with multiple spots of stressed vegetation and bare earth.
Location: The site is located 89 m (292 ft) south of Route 1 and 505 m (1657 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:4 **Classification:** Accepted
Names: 600-369:4; Segment 4 Bare Ground and Crusted Soil Area 4 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of a 14 m (46 ft) area with multiple spots of bare ground.

Location: The site is located 107 m (351 ft) south of Route 1 and 607 m (1992 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:5 **Classification:** Accepted
Names: 600-369:5; Segment 4 Bare Ground and Crusted Soil Area 5 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of a 50 m (164 ft) diameter area with multiple spots of bare ground.

Location: The site is located 52 m (171 ft) north of Route 1 and 241 m (791 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:6 **Classification:** Accepted
Names: 600-369:6; Segment 4 Bare Ground and Crusted Soil Area 6 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: The subsite consists of a 11 m (36 ft) area of crusted soil with no vegetation visible.

Location: The site is located 44 m (144 ft) north of Route 1 and 567 m (1860 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369
Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:7 **Classification:** Accepted
Names: 600-369:7; Segment 4 Bare Ground and Crusted Soil Area 7 **Reclassification:** None
Type: Dumping Area **Start Date:**

Status: Inactive

End Date:

Description: The subsite consists of a 2 m (7 ft) diameter area of red crusted soil devoid of vegetation.

Location: The site is located 73 m (240 ft) north of Route 1 and 277 m (909 ft) west of Route 2 North.

The SubSite is Part Of:

Code: 600-369

Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-369:8

Classification: Accepted

Names: 600-369:8; Segment 4 Bare Ground and Crusted
Soil Area 8

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of a 10 m (33 ft) diameter area of stressed vegetation and 6 drum lids.

Location: The site is located 118 m (387 ft) north of Route 1 and 440 m (1444 ft) west of Route 2 North.

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-369

Names: 600-369; Segment 4 Bare Ground and Crusted Soil Areas

Code: 600-370

Classification: Accepted

Names: 600-370; Segment 4 Debris Area #1

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site consists of a large disturbed area with surface debris consisting of multiple burn sites with burn remnants, transite, insulators, wood and concrete.

Location: The site is located 237 m (778 ft) south of Route 1 and 2.7 Km (1.7 miles) west of Route 2 North, at E577743.13, N145009.07

Code: 600-371

Classification: Accepted

Names: 600-371; Segment 4 Chalky Material Area

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site consists of multiple locations having a white chalky substance that resembles either grout or bentonite.

Location: The site is located 1.4 Km (0.9 miles) east of H Avenue and 240 m (787 feet) west of the Columbia River, at E579060.73, N150280.

Process There is no process history associated with the 600-371 waste site.

Description:

Code: 600-372 **Classification:** Accepted
Names: 600-372; Segment 4 Oil Stains and Filter Areas **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The 600-372 waste site consists of two areas that have a discarded oil filter and are devoid of vegetation. The site has been divided into two subsites as follows:

600-372:1, Segment 4 Oil Stain and Filter Area #1a,E578666.74, N150323.91
600-372:2, Segment 4 Oil Stain and Filter Area #1b,E578082.80, N578082.80

Location: The site is located northeast of the interstecation of Route 2N and H Avenue.
600-372:1,E578666.74, N150323.91
600-372:2,E578082.80, N578082.80

Process There is no process history associated with the 600-372 waste site.
Description:

This Site has the Following SubSites:

Code: 600-372:1
Names: 600-372:1; Segment 4 Oil Stain and Filter Area #1a
Code: 600-372:2
Names: 600-372:2; Segment 4 Oil Stain and Filter Area #1b

Code: 600-372:1 **Classification:** Accepted
Names: 600-372:1; Segment 4 Oil Stain and Filter Area #1a **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a 3 sq. m. (4 sq. yd) area that has a discarded oil filter and is devoid of vegetation.
Location: The site is located 3 Km (1.8 miles) north of Route 2N and 1 Km (0.6 miles) east of H Avenue, E578666.74, N150323.91

Process There is no process history associated with this subsite.
Description:

The SubSite is Part Of:

Code: 600-372
Names: 600-372; Segment 4 Oil Stains and Filter Areas

Code: 600-372:2 **Classification:** Accepted
Names: 600-372:2; Segment 4 Oil Stain and Filter Area #1b **Reclassification:** None
Type: Unplanned Release **Start Date:**
Status: Inactive **End Date:**
Description: The subsite consists of a 13 sq. m. (15 sq. yd) area that has a discarded oil filter and is devoid of vegetation.

Location: The site is located 2.2 Km (1.4 miles) north of Route 2N and 0.4 Km (0.26 miles) east of H Avenue, E578082.80, N578082.80

Process There is no process history associated with this subsite
Description:

The SubSite is Part Of:

Code: 600-372

Names: 600-372; Segment 4 Oil Stains and Filter Areas

Code: 600-373

Classification: Accepted

Names: 600-373; Segment 4 Bare Ground and White Stain Area

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site consists of a 28 square meter (303 square feet) area devoid of vegetation and covered by a white stain and crusted soil/glass debris.

Location: The site is located 2.8 Km (1.7 miles) north of Route 2 N and 0.76 Km (0.47 miles) east of H Avenue, at E578471.14, N150388.87

Process There is no process history associated with the 600-373 waste site.

Description:

Code: 600-374

Classification: Accepted

Names: 600-374; Segment 4 Drum Remnant Area

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This site consists of an empty 55 gallon drum (crushed) surrounded by a small area devoid of vegetation.

Location: The site is located approximately 1.6 Km (1 mile) northwest of the intersection of Route 2 North and H Avenue. The drum is located at E576207.11, N150290.57.

Process There is no process history associated with the 600-374 waste site.

Description:

Code: 600-375

Classification: Accepted

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The 600-375 waste site consists of five locations that have dry cell battery debris and stained soil. The site has been divided into five subsites as follows:

600-375:1, Segment 4 Dry Cell Battery Debris Area #1a
600-375:2, Segment 4 Dry Cell Battery Debris Area #1b
600-375:3, Segment 4 Dry Cell Battery Debris Area #1c

600-375:4, Segment 4 Dry Cell Battery Debris Area #1d

600-375:5, Segment 4 Dry Cell Battery Debris Area #1e

Location: The sites are located in Segment 4 west and north of the Central Shops Area (White Bluffs Community).

600-375:1, Segment 4 Dry Cell Battery Debris Area #1aE577208.71, N150162.85

600-375:2, Segment 4 Dry Cell Battery Debris Area #1bE576718.36, N148913.05

600-375:3, Segment 4 Dry Cell Battery Debris Area #1cE576955.64, N147365.45

600-375:4, Segment 4 Dry Cell Battery Debris Area #1dE576263.76, N147106.86

600-375:5, Segment 4 Dry Cell Battery Debris Area #1eE576156.50, N148489.60

Process There is no process history associated with the 600-375 waste site.

Description:

This Site has the Following SubSites:

Code: 600-375:1

Names: 600-375:1; Segment 4 Dry Cell Battery Debris Area #1a

Code: 600-375:2

Names: 600-375:2; Segment 4 Dry Cell Battery Debris Area #1b

Code: 600-375:3

Names: 600-375:3; Segment 4 Dry Cell Battery Debris Area #1c

Code: 600-375:4

Names: 600-375:4; Segment 4 Dry Cell Battery Debris Area #1d

Code: 600-375:5

Names: 600-375:5; Segment 4 Dry Cell Battery Debris Area #1e

Code: 600-375:1

Classification: Accepted

Names: 600-375:1; Segment 4 Dry Cell Battery Debris Area #1a

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of debris from four dry cell batteries in a 3 square meter (33 square feet) area.

Location: The site is located 1.4 Km (0.85 miles) north of Route 2 North and 460 m (0.3 miles) west of H Avenue, E577208.71, N150162.85

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-375

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Code: 600-375:2

Classification: Accepted

Names: 600-375:2; Segment 4 Dry Cell Battery Debris Area #1b

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 1 meter (3 foot) diameter stained area from dry cell batteries.

Location: The site is located 119 m (390 feet) south of Route 2 North and 1.3 Km (0.8 miles) west of H Avenue, E576718.36, N148913.05

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-375

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Code: 600-375:3

Classification: Accepted

Names: 600-375:3; Segment 4 Dry Cell Battery Debris Area #1c

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 390 square meter (0.1 acre) area that has scattered battery debris and stained soils within a pre-Hanford homestead.

Location: The site is located 2.1 Km (1.3 miles) north of Route 1 and 1.8 Km (1.1 miles) west of Route 2 North, E576955.64, N147365.45

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-375

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Code: 600-375:4

Classification: Accepted

Names: 600-375:4; Segment 4 Dry Cell Battery Debris Area #1d

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of debris from dry cell batteries in two locations with stained soils.

Location: The site is located 1.9 Km (1.2 miles) north of Route 1 and 2.7 Km (1.7 miles) west of Route 2 North, E576263.76, N147106.86

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-375

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Code: 600-375:5

Classification: Accepted

Names: 600-375:5; Segment 4 Dry Cell Battery Debris Area #1e

Reclassification: None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of small area with battery debris and stained soil.

Location: The site is located 3.2 Km (2.0 miles) north of Route 1 and 1.3 Km (0.8 miles) west of Route 2 North, E576156.50, N148489.60

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-375

Names: 600-375; Segment 4 Dry Cell Battery Debris Area #1

Code: 600-376 **Classification:** Accepted

Names: 600-376; Segment 4 Stained Soil Area #2 **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The waste site consists of two stained soil areas and two patches of bare ground with a black material covering the ground, glass jar (probable food container) with unknown material, and dried yellow material. The site has been divided into two subsites as follows:

600-376:1, Segment 4 Stained Soil Area #2a

600-376:2, Segment 4 Stained Soil Area #2b

Location: The subsites are located NNW of the intersection of Route 2N and H Avenue.

600-376:1, E575916.56, N150178.99

600-376:2, E576272.73, N149545.31

Process There is no process history associated with the 600-376 waste site.

Description:

This Site has the Following SubSites:

Code: 600-376:1

Names: 600-376:1; Segment 4 Stained Soil Area #2a

Code: 600-376:2

Names: 600-376:2; Segment 4 Stained Soil Area #2b

Code: 600-376:1 **Classification:** Accepted

Names: 600-376:1; Segment 4 Stained Soil Area #2a **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: The subsite consists of two stained soil areas adjacent to the railroad tracks leading to the 100-H Area.

Location: The site is located 200 m (653 ft) north of Route 2 North and 1.75 Km (1.1 miles) west of H Avenue, E575916.56, N150178.99

Process There is no process history associated with this subsite.

Description:

Description:

The SubSite is Part Of:

Code: 600-376

Names: 600-376; Segment 4 Stained Soil Area #2

Code: 600-376:2

Classification: Accepted

Names: 600-376:2; Segment 4 Stained Soil Area #2b

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The subsite consists of two patches of bare ground covered with debris including black material, a glass jar (probable food container) with unknown material, and dried yellow material.

Location: The site is located 4.3 Km (2.7 miles) north of Route 1 and 122 m (400 feet) west of Route 2 North, E576272.73, N149545.31

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-376

Names: 600-376; Segment 4 Stained Soil Area #2

Code: 600-377

Classification: Accepted

Names: 600-377; Segment 4 Oil Stain and Filter Area #2

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The site consists of a 3 square meter (32 square feet) area devoid of vegetation and containing multiple filters.

Location: The site is located 3 Km (1.9 miles) south of Route 1 and 97 m (318 ft) west of Route 4 North. The area is located between Route 4N and the west end of Gable Mountain.

Process There is no process history associated with the 600-368 waste site.

Description:

Code: 600-378

Classification: Accepted

Names: 600-378; 506 Telephone Exchange Emergency Generator Building Underground Fuel Storage Tank

Reclassification: None

Type: Storage Tank

Start Date:

Status: Inactive

End Date:

Description: This site is the historical location of a 379 L (100 gal) underground storage tank used to store fuel for the 506 telephone exchange emergency generator building (508 bldg).

Location: The 506 Building was located on the south side of the Hanford - Cold Creek Road (Route 11A). The fuel tank is located at E581237.93, N138768.82.

Process The 506 B-Y Telephone Exchange constructed in 1945 handled essentially all of the switching between the inner and outer areas. It also housed the 50 line Hanford exchange and served as

the primary base of operations for telephone maintenance personnel in support of the 100 and 200 Areas (GEH-26434-400). The 508 Building provided emergency power to support the 506 B-Y Telephone Exchange Building in the event of a power outage. An adjacent structure (507 Building) provided storage space and was used for minor repair and maintenance tasks.

Code: 600-379 **Classification:** Accepted
Names: 600-379; Segment 4 Burn Area #1 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of a burn area with visible remnants.
Location: The site is located 1.2 Km (0.75 miles) south of Route 1 and 5.7 Km (3.5 miles) west of Route 2 North,north of Route 11A.It is also located 648 m (2,126 ft) southwest of the 213-J&K Storage Facility.
Process Description: There is no process history associated with the 600-379 waste site.

Code: 600-380 **Classification:** Accepted
Names: 600-380; Segment 4 Unknown Cylinder **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The site consists of an unknown cylinder located 20 m (64 ft) from a maintained gravel road.
Location: This site is located approximately 0.96 Km (0.60 miles) west of the intersection of H Avenue and the 100H perimeter road.
E576701.265, N151747.148
Process Description: There is no process history associated with the 600-380 waste site.

Code: 600-381 **Classification:** Accepted
Names: 600-381; Segment 4 Underground Structure with **Reclassification:** None
Wooden Air Vents Feature
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: This site consists of two wooden air vents covered with screening protruding from the ground.This feature is a discovery site because of the possibility of a void under ground space of unknown size.
Location: The site is located 0.8 Km (0.5 miles) south of the Columbia River and 1.3 Km (0.8 miles) west of Hadley Loop (H-Area perimeter road).E575918.008, N153563.985
Process Description: There is no process history associated with the 600-381 waste site.

Code: 600-382 **Classification:** Accepted

Names: 600-382; Segment 4 Oil Stains and Filter Area #3 **Reclassification:** None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The 600-382 waste site consists of five locations that have discarded oil filters and ground staining devoid of vegetation. The site has been divided into five subsites as follows:
 600-382:1, Segment 4 Oil Stain and Filter Area #3aE576315.892 N150679.753;
 600-382:2, Segment 4 Oil Stain and Filter Area #3bE576286.206 N150613.712;
 600-382:3, Segment 4 Oil Stain and Filter Area #3cE575923.366 N150876.064;
 600-382:4, Segment 4 Oil Stain and Filter Area #3dE576231.571 N151788.478;
 600-382:5, Segment 4 Oil Stain and Filter Area #3eE574850.417 N150781.277

Location: The subsites are located between the 100-D Area and the railroad tracks that lead to the 100-H Area.

600-382:1,E576315.892 N150679.753;
 600-382:2,E576286.206 N150613.712;
 600-382:3,E575923.366 N150876.064;
 600-382:4,E576231.571 N151788.478;
 600-382:5,E574850.417 N150781.277

Process There is no process history associated with the 600-382 waste site.

Description:

This Site has the Following SubSites:

Code: 600-382:1

Names: 600-382:1; Segment 4 Oil Stain and Filter Area #3a

Code: 600-382:2

Names: 600-382:2; Segment 4 Oil Stain and Filter Area #3b

Code: 600-382:3

Names: 600-382:3; Segment 4 Oil Stain and Filter Area #3c

Code: 600-382:4

Names: 600-382:4; Segment 4 Oil Stain and Filter Area #3d

Code: 600-382:5

Names: 600-382:5; Segment 4 Oil Stain and Filter Area #3e

Code: 600-382:1

Classification: Accepted

Names: 600-382:1; Segment 4 Oil Stain and Filter Area #3a

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of two oil filters surrounded by soil devoid of vegetation.

Location: The site is located 1.0 Km (0.6 miles) north of Route 2 North and 1.4 Km (0.8 miles) west of H Avenue.E576315.892 N150679.753

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-382
Names: 600-382; Segment 4 Oil Stains and Filter Area #3

Code: 600-382:2 **Classification:** Accepted

Names: 600-382:2; Segment 4 Oil Stain and Filter Area #3b **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of three oil filters and a small area of soil devoid of vegetation.

Location: The site is located 960 m (0.6 miles) north of Route 2 North and 1.4 Km (0.8 miles) west of H Avenue.E576286.206 N150613.712

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-382

Names: 600-382; Segment 4 Oil Stains and Filter Area #3

Code: 600-382:3 **Classification:** Accepted

Names: 600-382:3; Segment 4 Oil Stain and Filter Area #3c **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of an oil filter surrounded by soil devoid of vegetation.

Location: The site is located 890 m (0.6 miles) north of Route 2 North and 1.7 Km (1 mile) west of H Avenue.E575923.366 N150876.064

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-382

Names: 600-382; Segment 4 Oil Stains and Filter Area #3

Code: 600-382:4 **Classification:** Accepted

Names: 600-382:4; Segment 4 Oil Stain and Filter Area #3d **Reclassification:** None

Type: Unplanned Release **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of a 3 square meter (37 square feet) area devoid of vegetation containing discarded oil filters.

Location: The site is located 2.1 Km (1.3 miles) north of Route 2 North and 1.4 Km (0.8 miles) west of H-area perimeter road.E576231.571 N151788.478

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-382

Names: 600-382; Segment 4 Oil Stains and Filter Area #3

Code: 600-382:5

Classification: Accepted

Names: 600-382:5; Segment 4 Oil Stain and Filter Area #3e

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of three oil filters surrounded by soil devoid of vegetation.

Location: The site is located 376 m (0.2 miles) north of Route 2 North and 2.8 Km (1.7 miles) west of H Avenue.E574850.417 N150781.277

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-382

Names: 600-382; Segment 4 Oil Stains and Filter Area #3

Code: 600-383

Classification: Accepted

Names: 600-383; Segment 4 Battery Remnant Areas #2

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The 600-383 waste site consists of ten locations that contain remnants of batteries. The site has been divided into ten subsites as follows:

600-383:1, Segment 4 Battery Remnant Area #2a
600-383:2, Segment 4 Battery Remnant Area #2b
600-383:3, Segment 4 Battery Remnant Area #2c
600-383:4, Segment 4 Battery Remnant Area #2d
600-383:5, Segment 4 Battery Remnant Area #2e
600-383:6, Segment 4 Battery Remnant Area #2f
600-383:7, Segment 4 Battery Remnant Area #2g
600-383:8, Segment 4 Battery Remnant Area #2h
600-383:9, Segment 4 Battery Remnant Area #2i
600-383:10, Segment 4 Battery Remnant Area #2j

Location: The subsites are located between the 100-D Area and the railroad tracks leading to the 100-H Area.

The coordinates are:

600-383:1,E576455.35 N151417.875
600-383:2,E575303.197 N151382.354
600-383:3,E576163.427 N150781.104
600-383:4,E576116.577 N150791.637
600-383:5,E575068.449 N152464.615
600-383:6,E575298.778 N152062.235
600-383:7,E575619.302 N152555.295

600-383:8,E576348.312 N153213.341
600-383:9,E575624.336 N153303.821
600-383:10,E575222.383 N152913.096

Process There is no process history associated with the 600-383 waste site.

Description:

This Site has the Following SubSites:

Code: 600-383:1
Names: 600-383:1; Segment 4 Battery Remnant Area #2a
Code: 600-383:2
Names: 600-383:2; Segment 4 Battery Remnant Area #2b
Code: 600-383:3
Names: 600-383:3; Segment 4 Battery Remnant Area #2c
Code: 600-383:4
Names: 600-383:4; Segment 4 Battery Remnant Area #2d
Code: 600-383:5
Names: 600-383:5; Segment 4 Battery Remnant Area #2e
Code: 600-383:6
Names: 600-383:6; Segment 4 Battery Remnant Area #2f
Code: 600-383:7
Names: 600-383:7; Segment 4 Battery Remnant Area #2g
Code: 600-383:8
Names: 600-383:8; Segment 4 Battery Remnant Area #2h
Code: 600-383:9
Names: 600-383:9; Segment 4 Battery Remnant Area #2i
Code: 600-383:10
Names: 600-383:10; Segment 4 Battery Remnant Area #2j

Code: 600-383:1 **Classification:** Accepted
Names: 600-383:1; Segment 4 Battery Remnant Area #2a **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**

Description: This subsite consists of a 4 m (13 feet) diameter area of discarded batteries.

Location: The site is located 1.9 Km (1.2 miles) north of Route 2 North and 1.2 Km (0.75 miles) west of H Avenue.E576455.35 N151417.875

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383
Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:2 **Classification:** Accepted

Names: 600-383:2; Segment 4 Battery Remnant Area #2b **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of twelve discarded dry cell batteries.

Location: The site is located 1.2 Km (0.75 miles) north of Route 2 North and 2.4 Km (1.5 miles) west of H Avenue.E575303.197 N151382.354

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:3 **Classification:** Accepted

Names: 600-383:3; Segment 4 Battery Remnant Area #2c **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of a twenty-two discarded dry cell batteries.

Location: The site is located 1.0 Km (0.6 miles) north of Route 2 North and 1.5 Km (0.9 miles) west of H Avenue.E576163.427 N150781.104

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:4 **Classification:** Accepted

Names: 600-383:4; Segment 4 Battery Remnant Area #2d **Reclassification:** None

Type: Dumping Area **Start Date:**

Status: Inactive **End Date:**

Description: This subsite consists of a dry cell battery pack.

Location: The site is located 1.0 Km (0.6 miles) north of Route 2 North and 1.6 Km (1.0 miles) west of H Avenue.E576116.577 N150791.637

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:5 **Classification:** Accepted

Names: 600-383:5; Segment 4 Battery Remnant Area #2e **Reclassification:** None

Status: Inactive

End Date:

Description: This subsite consists of six dry cell batteries.

Location: The site is located 1.0 Km (0.6 miles) south of the Columbia River and 0.9 Km (0.5 miles) west of the H-Area perimeter road.E576348.312 N153213.341

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:9

Classification: Accepted

Names: 600-383:9; Segment 4 Battery Remnant Area #2i **Reclassification:** None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 5 m (16 feet) diameter area of discarded dry cell batteries.

Location: The site is located 1.1 Km (0.7 miles) south of the Columbia River and 1.6 Km (1.0 miles) west of the H-Area perimeter road.E575624.336 N153303.821

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-383:10

Classification: Accepted

Names: 600-383:10; Segment 4 Battery Remnant Area #2j **Reclassification:** None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 2 m (7 feet) diameter area of discarded batteries.

Location: The site is located 1.5 Km (0.9 miles) south of the Columbia River 2.0 Km (1.2 miles) west of H Avenue.E575222.383 N152913.096

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-383

Names: 600-383; Segment 4 Battery Remnant Areas #2

Code: 600-384

Classification: Accepted

Names: 600-384; Segment 4 Stained Soil Area #3 **Reclassification:** None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: soils. The site has been divided into five subsites as follows:

600-384:1, Segment 4 Stained Soil Area #3a
 600-384:2, Segment 4 Stained Soil Area #3b
 600-384:3, Segment 4 Stained Soil Area #3c
 600-384:4, Segment 4 Stained Soil Area #3d
 600-384:5, Segment 4 Stained Soil Area #3e

Location: The sites are located in Segment 4 between the 100-D/DR and 100-H Areas.

600-384:1,E575505.736 N151010.616
 600-384:2,E575481.948 N151135.371
 600-384:3,E575312.274 N152256.576
 600-384:4,E575508.771 N152209.015
 600-384:5,E575684.069 N151248.983

Process There is no process history associated with the 600-384 waste site.

Description:

This Site has the Following SubSites:

Code: 600-384:1

Names: 600-384:1; Segment 4 Stained Soil Area #3a

Code: 600-384:2

Names: 600-384:2; Segment 4 Stained Soil Area #3b

Code: 600-384:3

Names: 600-384:3; Segment 4 Stained Soil Area #3c

Code: 600-384:4

Names: 600-384:4; Segment 4 Stained Soil Area #3d

Code: 600-384:5

Names: 600-384:5; Segment 4 Stained Soil Area #3e

Code: 600-384:1

Classification: Accepted

Names: 600-384:1; Segment 4 Stained Soil Area #3a

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 4 m (13 ft) diameter area of yellow and white powder.

Location: The site is located 0.86 Km (0.5 miles) north of Route 2 N and 2.2 Km (1.4 miles) west of H Avenue.E575505.736 N151010.616

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-384

Names: 600-384; Segment 4 Stained Soil Area #3

Code: 600-384:2

Classification: Accepted

Names: 600-384:2; Segment 4 Stained Soil Area #3b

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 15 m (49 ft) diameter area of yellow and white powder.

Location: The site is located 1.0 Km (0.6 miles) north of Route 2 N and 2.2 Km (1.4 miles) west of H Avenue.E575481.948 N151135.371

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-384

Names: 600-384; Segment 4 Stained Soil Area #3

Code: 600-384:3

Classification: Accepted

Names: 600-384:3; Segment 4 Stained Soil Area #3c

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of two locations that have stained soil.

Location: The site is located 2.0 Km (1.2 miles) north of Route 2 N and 1.9 Km (1.2 miles) west of H Avenue.E575312.274 N152256.576

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-384

Names: 600-384; Segment 4 Stained Soil Area #3

Code: 600-384:4

Classification: Accepted

Names: 600-384:4; Segment 4 Stained Soil Area #3d

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 4 m (13 ft) diameter area of stained soil.

Location: The site is located 2.1 Km (1.3 miles) north of Route 2 N and 1.7 Km (1.1 miles) west of the H-Area perimeter road.E575508.771 N152209.015

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-384

Names: 600-384; Segment 4 Stained Soil Area #3

Code: 600-384:5

Classification: Accepted

Names: 600-384:5; Segment 4 Stained Soil Area #3e

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: This subsite consists of a 1.5 m (5 ft) diameter area of stained soil.

Location: The site is located 1.1 Km (0.7 miles) north of Route 2 N and 2 Km (1.2 miles) west of H Avenue.E575684.069 N151248.983

Process There is no process history associated with this subsite.

Description:

The SubSite is Part Of:

Code: 600-384

Names: 600-384; Segment 4 Stained Soil Area #3

Code: 600-385

Classification: Accepted

Names: 600-385; Segment 4 Transite, Concrete, and Metal Debris Area

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: The site consists of a 5334 square m (1.3 acres) area with scattered transite, concrete, and metal debris.

Location: This site is located approximately 1.2 Km northwest of the northwest corner 100H perimeter road along the Columbia River.E576211.402 N154182.005

Process There is no process history associated with the 600-385 waste site.

Description:

Code: 600-386

Classification: Accepted

Names: 600-386; Segment 5 Battery Remnant Area #1

Reclassification: None

Type: Dumping Area

Start Date:

Status: Inactive

End Date:

Description: This feature consists of wet cell battery remnants partially buried and some potential related staining visible located approximately 835 meters NNW of the intersection of the 310 building (TEDF) and 13 meters west of Route 4S.

Location: The coordinates for the battery site areE593533.2002, N118226.1146.

Code: 600-387

Classification: Accepted

Names: 600-387; 212-R Railspur Legacy Contamination

Reclassification: None

Type: Unplanned Release

Start Date:

Status: Inactive

End Date:

Description: The waste site is two areas of superficial and subsurface radiological contaminated areas identified following the removal of 16 Railcars located at 200 North Area. Contamination was found on the gravel bed under the railroad ties and was unrelated to the actual D4 Project Activities of the removal of the 16 railcars.

Location: One radiologically contaminated area is on the north side of Deer St. and the other is on the south side of Deer St (aka Railroad Street).

Code: 600-388 **Classification:** Accepted
Names: 600-388; Debris Field South of Army Loop Road **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is surface debris found during the Zone 4 Non Operational Area walkdowns. There is evidence of mechanical ground disturbance, stressed vegetation and indications of potentially buried material.
Location: The area is located south of Army Loop Road, near Beloit Ave. and the Rattlesnake Gate.

Code: 600-389 **Classification:** Accepted
Names: 600-389; Surface Debris near 600-49 **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: The waste site is an area of surface debris identified during the Zone 4 Non-Operational Area walkdowns. The debris includes batteries, paint, metal objects and an oil filter.
Location: The waste site is located south of Army Loop road near waste site 600-49.

Code: 600-390 **Classification:** Accepted
Names: 600-390; Area of Dried Surface Material **Reclassification:** None
Type: Depression/Pit (nonspecific) **Start Date:**
Status: Inactive **End Date:**
Description: During the Non-Operational Area site walkdown of Zone 3, a surface deposit of dried material was identified. The deposit resembles dried resin.
Location: The area is located on the north side of Route 4 South, west of Route 2 South. It is north of the Old Central Landfill waste site.

Code: 600-391 **Classification:** Accepted
Names: 600-391; Dumping Area Southeast of H-40 Gun Site **Reclassification:** None
Type: Dumping Area **Start Date:**
Status: Inactive **End Date:**
Description: During the Zone 8 ground-truth interpretation of LIDAR data, an area of potential contamination was identified. The Non-Operational Property Evaluation walkdown found a significant mechanically disturbed area containing partially buried debris.
Location: The area is located south east of the H-40 Gun Site, south of Route 4 South.
Related Sites/ Structures: The debris area is associated with WIDS site 600-228.

Code: 600-392 **Classification:** Discovery
Names: 600-392; Debris and Radiological Signs West of **Reclassification:** None

212-N

Type: Dumping Area**Start Date:****Status:** Inactive**End Date:****Description:** The waste site is a group of discarded rusty cans, barrels and old metal signs. Some of the signs have words that indicate they were related to safety and radiological control.**Location:** The dumping area is located west of the demolished 212-N facility. The center point coordinates are N140230, E569763.**Code:** 1100-19**Classification:** Accepted**Names:** 1100-19; Tar Flow and Stained Sands Areas**Reclassification:** Deleted From NPL (9/30/1996)**Type:** Unplanned Release**Start Date:****Status:** Inactive**End Date:** 1/1/1995**Description:** This site has been remediated based on the 100 Area Record of Decision. Prior to remediation, the Tar Flow site contained soft, tar like material on the surface. The material appeared to have flowed approximately 45.75 meters (150 feet) to the northeast into a drainage ditch. The Stained Sand Area was located on the east slope of a sand dune. The area had vegetation and the sand appeared to be stained. After remediation, both sites were regraded to a smooth, uniform surface.**Location:** The Tar Flow and Stained Sand sites were located northwest of the 1171 building. The Tar Flow area was located 320 meters (1,050 feet) north of the northwest corner of the 1171 building. The Stained Sand site was located approximately 271 meters (888 feet) north of the northwest corner of the 1171 building.**Waste Type:** Soil**Waste Description:** The waste consisted of petroleum contaminated soil.**Closure Info:** The contaminated soil was removed by the US Army Corp of Engineers on June 26, 1995. 1,600 cubic yards of contaminated soil was excavated and stockpiled. Confirmatory samples indicated the remediation had met the clean-up levels established in the Record of Decision. The contaminated soil was disposed of at the Columbia Ridge Disposal Facility in September 1995.**Code:** UPR-200-E-18**Classification:** Accepted**Names:** UPR-200-E-18; Contamination Release at the 216-A-8 Sampler Pit; UN-200-E-18**Reclassification:** None**Type:** Unplanned Release**Start Date:** 1/1/1959**Status:** Inactive**End Date:****Description:** The sampler pit is a concrete structure with three valves, two vent stacks and one curved bonnet extending from the structure. The structure is surrounded with post and chain with Underground Radioactive Material and Contamination Area signs. The area around the structure is gravel and asphalt.**Location:** The release site is approximately 30 meters (100 feet) east of the 241-A-271 Building, at the 216-A-8 proportional sample pit. It is east of 241-A Tank Farm and west of Canton Ave.**Release Description:** Contaminated moisture dripping from a vent pipe bonnet at the 216-A-8 Proportional Sample Pit contaminated the ground around the cement pad.

Related Sites/ Structures: The release is associated with the 216-A-8 Proportional Sampler Pit (sitecode 200-E-285).

Waste Type: Process Effluent

Waste Description: Low-level fission products dripped onto the ground from the vent pipe bonnet.

Code: UPR-200-E-79 **Classification:** Accepted

Names: UPR-200-E-79; 200-E-264-PL Line Break; 242-B to 207-B Line Break; UN-200-E-79; UN-216-E-7 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:**

Description: The area where the release occurred is delineated by light duty posts and chain measuring approximately 7.6 meters (25 feet) wide and 61 meters (200 feet) long. It is posted with Underground Radioactive Material signs.

Location: The site is located between the 242-B Evaporator and the 207-B Retention Basin, south of 241-B Tank Farm.

Release Description: In June 1953, five leaks were discovered in the waste line that runs from 242-B to 207-B. Contamination levels up to 2,500 counts per minute were measured at the points of emission of water from the ground.

Process Description: The release consisted of a 10 centimeter (4 inch) diameter, cast iron underground pipeline that was found to be leaking in 1953.

Related Sites/ Structures: The site is associated with the 242-B Evaporator and the 207-B basin. The release occurred in the pipeline assigned sitecode 200-E-264-PL.

Waste Type: Process Effluent

Waste Description: The release consisted of approximately of 10 curies Mixed Fission Products (MFP) from the pipeline.

Code: UPR-200-E-99 **Classification:** Accepted

Names: UPR-200-E-99; Contamination Adjacent to 244-CR Vault; UN-200-E-99; UN-216-E-27 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:** 1/1/1980

Description: The previously posted Surface Contamination Area was released from radiation zone status in March 1981. A WIDS single sign had been placed at the approximate center location of the release. This sign was removed in 2010 when support trailers were placed in the area. Other areas with radiological postings are currently visible in this area.

Location: The release was a posted Surface Contamination Area located south of 7th Street, directly south of the 244-CR Vault.

Release Description: The ground surface surrounding the 244-CR Vault became contaminated during the numerous piping changes and activities associated with the vault.

Process: The area south of 7th Street and west of Buffalo Ave. has had numerous areas of radiological

Process
Description: postings over the years due to contamination migration from the 241-C Tank Farm and the 244-A Lift Station.

Related Sites/ Structures: UPR-200-E-99 is associated with the 244-CR Vault and the 241-C Tank Farm.

Waste Type: Soil
Waste Description: The release was associated with the migration of contaminated particulates from the 244-CR Vault onto the surrounding ground surface. The 244-CR Vault was used in the transfer of process waste between facilities.

Code: UPR-200-E-100 **Classification:** Accepted

Names: UPR-200-E-100; Radioactive Contamination Near 244-A Lift Station; UN-200-E-100; UN-216-E-100; UN-216-E-29 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1985

Status: Inactive **End Date:**

Description: Various radiological postings exist in this vicinity that are associated with the 244-A Lift Station and 241-C Tank Farm contamination migration. A WIDS sign has been placed at the approximate location of the release. Routine radiological surveys of the 244-A Lift Station Area have changed the size and the shape of the posted areas as new contamination specks are identified and remediation attempts occur.

Location: UPR-200-E-100 consisted of radioactive rodent feces and contamination specks located south Seventh Street and west of Buffalo Street, adjacent to the 244-A Lift Station. Due to rodent movement and some contamination migration from wind, the size and the shape of the contaminated area was redefined several times.

Release Description: The release area was determined to be due to windblown particulates and biological transport (rodent feces) from the tank farms and the 244-A Lift Station. Another source of the contamination may be an underground pipeline leak near the 244-A lift station. A waste site number (UN-216-E-29) was assigned to this area on August 18, 1985.

Related Sites/ Structures: UPR-200-E-100 is associated with the 244-A Lift Station, the 241-C Tank Farm, UPR-200-E-143, UPR-200-E-56 and the 216-A-40 Retention Basin.

Waste Type: Animal Waste
Waste Description: The contamination was due to windblown particulates and biological transport (rodent feces) from the 200 East Area tank farms and the 244-A Lift Station.

Code: UPR-200-W-20 **Classification:** Accepted

Names: UPR-200-W-20; Spread of Contamination from a Diversion Box; UN-200-W-20 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1953

Status: Inactive **End Date:**

Description: A WIDS sign has been placed at the approximate location of the release.

Location: Due to discrepancies in reference documentation, it is not possible to be certain where this release occurred.

Release In January and February 1953 work being done inside a diversion box resulted in extensive

Description: spread of contamination to the ground. An area of about 93 square meters (1000 square feet) around the diversion box was covered with six inches of clean gravel. This area was roped off and posted with radiation zone signs in 1953.

Process Description: The 241-S-151 Diversion Box was used to redirect waste solutions from processing and decontamination operations. Waste quantities were variable depending on the specific plant operations. Leak detection and air monitoring are performed continuously with the 241-S Tank Farm. The unit interconnects the 240-S-151, 241-SX-151, and the 241-S Tank Farm.

Related Sites/ Structures: May be a Duplicate entry - see UPR-200-W-82.

Waste Type: Process Effluent

Waste Description: Specks from the open diversion box caused an area around the diversion box to be contaminated.

Code: UPR-200-W-76 **Classification:** Accepted

Names: UPR-200-W-76; Contamination Found at 241-TX-155; UN-200-W-76 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1977

Status: Inactive **End Date:**

Description: In 2008, the area surrounding 241-TX-152 Diversion Box, 241-TX-155 Diversion Box and 241-TX-302B catch tank has been covered with a layer of clean gravel. It is posted with Bio-Barrier and Underground Radioactive Material signs. A single white sign with black letters reading "WIDS UPR-200-W-76" is hanging on the chain on the near the south side of the 241-TX-152 Diversion Box.

Location: The site is located east of Camden Ave.. The radiologically posted area surrounds the 241-TX-152 Diversion Box, 241-TX-155 Diversion Box and 241-TX-302B catch tank.

Release Description: On August 24, 1977, contaminated rabbit fecal pellets were found around the 241-TX-155 Diversion Box. A more extensive survey revealed contaminated pellets with readings as high as 100 millirads/hour scattered in an area of about 50 yards (45.72 meters) by 100 yards (91.44 meters) around the diversion box. Two pellets were analyzed for radiological contaminants and found to contain mostly cesium-137. Subsequent surveys found additional spotty contamination extending in a 152 meter (500 foot) radius around the 241-TX-155 diversion box. The source of the contamination was traced to leaks from the 241-TX-155 Diversion Box. The east side of the diversion box had been partially excavated in 1976. The excavation was left open for more than a year, allowing access for animal intrusion.

Process Description: The original Occurrence Report (77-180) described the release as contaminated rabbit feces extending 100 yards (91.44 meters) by 50 yards (45.72 meters) around the 241-TX-155 Diversion Box and additional specks of contamination extending to a 152 meter (500 foot) radius around the 241-TX-155 diversion box.

Related Sites/ Structures: The site is associated with the 241-TX-155 and 241-TX-152 Diversion Boxes.

Waste Type: Animal Waste

Waste Description: Radioisotopic analyses on two individual rabbit pellets revealed: 18.6 microCuries cesium-137 per gram of sample, 0.044 microCuries cesium-134 per gram of sample, 0.093 microCuries

europium-155 per gram of sample, 0.026 microCuries europium-154 per gram of sample, and 2.63 microCuries strontium-90 per gram of sample. Beta-gamma readings up to 100 millirads/hour were found.

Code: UPR-200-W-82 **Classification:** Accepted

Names: UPR-200-W-82; Contamination Spread at 240-S-151; UN-200-W-82 **Reclassification:** None

Type: Unplanned Release **Start Date:** 1/1/1980

Status: Inactive **End Date:** 1/1/1980

Description: The 240-S-151 Diversion Box is posted with radiological warning signs. The contamination spread occurred in the soil adjacent to the diversion box. A WIDS sign has been placed at the approximate location of the release.

Location: The contamination spread occurred on the north and east side of the 240-S-151 Diversion Box and the 240-S-302 Catch Tank, on the north side of the REDOX facility (202-S).

Release Description: A piece of equipment moved in for the 240-S-151 Diversion Box installation, was caught under the late snow cover. Moisture from the melting snow and rain penetrated the plastic wrap, and ran off toward the catch tank area spreading contamination over the areas of run-off. Traffic from daily routine surveillance of the catch tank liquid levels apparently tracked some contamination to the chain boundary and step-off area.

Related Sites/Structures: UPR-200-W-82 was associated with the 240-S-151 Diversion Box and the 240-S-302 Catch Tank. May be a Duplicate entry - see UPR-200-W-20.

Waste Type: Process Effluent

Waste Description: The release consisted of beta/gamma particulates that spread from a contaminated piece of equipment, with readings up to 80,000 counts per minute found outside the radiation zone.