



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending March 25, 2011

Contract DE-AC06-05RL14655

Protecting the Columbia River

Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds (pending definitization of scope and contract modifications).

A. The Environmental Restoration Disposal Facility (ERDF)

ERDF is the hub of the WCH scope of work and supports a major portion of other Hanford contractor (OHC) waste disposal. Wastes collected from sites around the Hanford complex are brought to ERDF for treatment and disposal. WCH operates the ERDF and is currently using ARRA funds to upgrade and expand its capabilities to meet the needs of Hanford's accelerating mission.

B. The 618-10 Burial Grounds

The trenches at 618-10 have long been regarded as some of Hanford's worst waste sites. Using ARRA funds, WCH will characterize the site. Intrusive and non-intrusive techniques will be used, and the subsequent analysis of data will enable the project to pursue remediation of the site safely and effectively.

C. The 618-11 Burial Grounds

Along with 618-10, the 618-11 Burial Grounds are among the biggest challenges faced by WCH using ARRA funds. The 618-11 characterization work will require special care because of its proximity to the Energy Northwest Generating Facility, north of the 300 Area.

D. Waste Site Remediation

WCH is employing ARRA funds to clean up many failed waste sites not originally part of its contract. Sites in the 100-F and IU 2&6 segments 1&2 are proposed for waste site remediation in the two year period starting in October 2009.

E. Confirmatory Sampling of other new sites

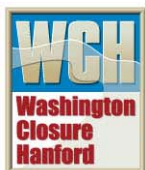
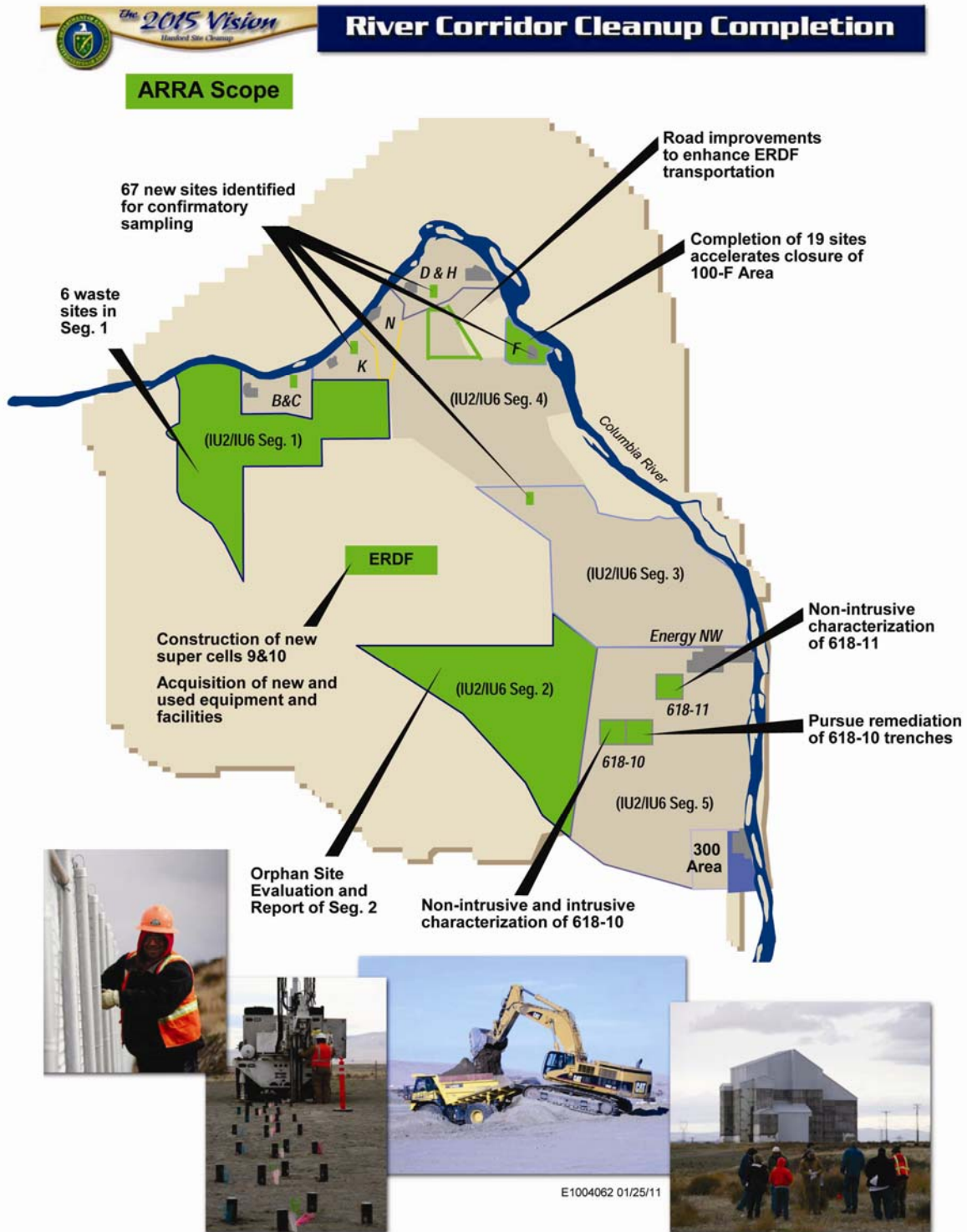
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

This weekly report will provide evidence of these activities as they occur in support of ARRA.

The following figure illustrates the overall scope of WCH's ARRA projects.



Overview (Continued)



Safety

Safety Accomplishments

As of February 20, 2011, WCH and its subcontractors have worked 392,017 hours of ARRA scope with no safety incidents.

Hazard Reductions

The River Corridor Closure Project provides a “Weekly Roundup” focusing on safety topics that affect Hanford Site workers. This week’s issue featured a Human Performance Improvement (HPI) subject titled “Event Analysis and Investigation.”

After an event, it is crucial to investigate the incident and find out exactly what happened. In causal analysis, it is important to collect facts and evidence. The HPI event investigation process is quite different from the standard way of investigating.

The HPI approach is to look at the system for error-likely situations and critical steps. Then look at what error prevention tools could have been used to prevent the event – not as “Fixes” but as improvement opportunities.

HPI focuses on reviewing the event from the perspective of the people involved in the incident. It is important to evaluate the organization as the event unfolds while evaluating the actions of the people involved from an error-precursor perspective. Below are some clues as how to investigate an event from an HPI point of view.

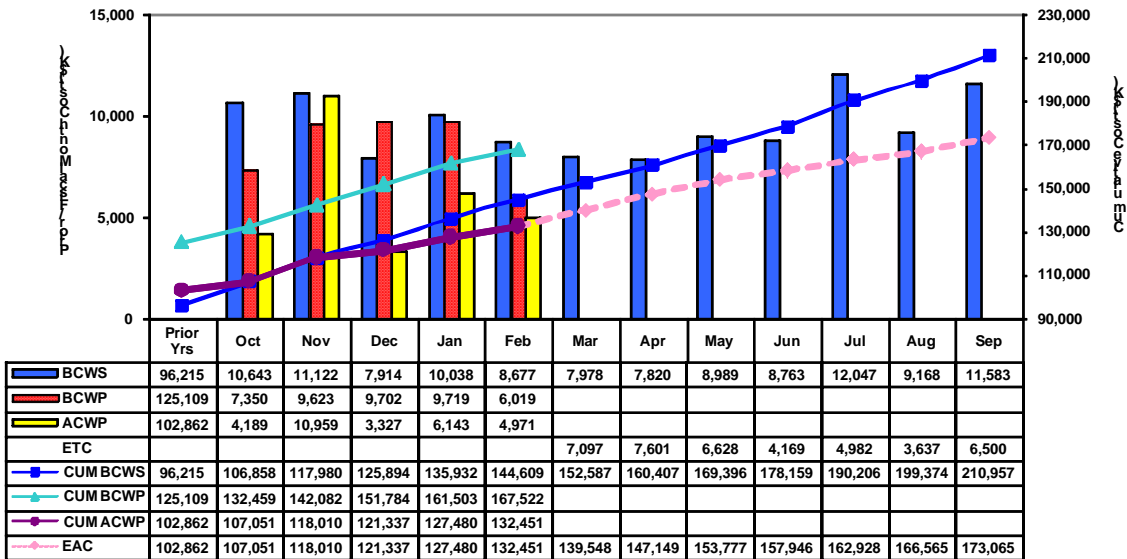
- Have participants tell their story in one-on-one interviews.
- Identify the key decision points in the sequence of events.
- Rebuild the world as it looked to the participants at each decision point.
- What did the participant observe?
- What knowledge was used to deal with the situation?
- What did the participants expect was going to happen?
- What options did the participants think they had?
- How did the situation influence their decision?
- What does the participant believe caused the error?
- Validate key decision points and separate fact from opinion.
- Reconstruct the sequence of events.
- Evaluate performance of the organization at key points of the sequence.



Cost/Contract Status

| Contract Mod # | Date | Scope | Obligated (\$M) (Inception to Date) | Not to Exceed (\$M) (Inception to Date) |
|----------------|----------|--|--|--|
| 099 | 4/9/09 | ERDF Cell Expansion & Upgrades; 618-10 NIC | \$203.0 | \$28.0 |
| 105 | 4/30/09 | ERDF Cell Expansion & Upgrades; 618-10 NIC | \$203.0 | \$44.5 |
| 126 | 7/23/09 | H.37 Clause - Reporting Requirements | N/A | N/A |
| 139 | 9/3/09 | ERDF Cell Expansion & Upgrades; 618-10 NIC | \$253.6 | \$44.5 |
| 142 | 9/30/09 | ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope | \$253.6 | \$123.8 |
| 174 | 2/22/10 | ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope | \$248.2 | \$123.8 |
| 182 | 3/25/10 | ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope | \$248.2 | \$155.8 |
| 185 | 4/19/10 | Phase 1 and Phase 2 Scope | \$248.2 | \$178.0 |
| 192 | 4/27/10 | Phase 1 and Phase 2 Scope | \$253.6 | \$178.0 |
| 205 | 5/26/10 | Reallocate Funds for Equipment and GPPs | \$253.6 | \$178.0 |
| 210 | 6/23/10 | Funding deobligation | \$229.3 | \$178.0 |
| 217 | 8/4/10 | Funding re-obligation | \$233.6 | \$178.0 |
| 230 | 9/24/10 | Phase 3 Definitization | \$233.6 | \$178.0 |
| 241 | 11/22/10 | Reallocate Funds for Equipment | \$233.6 | \$178.0 |
| 242 | 12/1/10 | Increase the Cost Authority on RL-0041.R2 | \$233.6 | \$196.6 |
| 247 | 12/16/10 | Reallocate Funds for Capital Expenditures | \$233.6 | \$196.6 |
| 253 | 1/18/11 | Increase 41.R1 Cost Authority and reallocate funds for capital | \$233.6 | \$214.4 |
| 266 | 2/17/10 | Reallocate Funds for Capital Expenditures | \$233.6 | \$214.4 |

RCC Project - ARRA
Current Performance Measurement Baseline (PMB)
Prior Years / FY11 Fiscal Month



ARRA Proposals 1, 2 and 3 Actuals (\$K)

| Apportionment Number | Apportionment Title | | February 2011 | Inception To Date | Cost Authority |
|----------------------|--|------------|---------------|-------------------|----------------|
| RL-0041.R1 | ERDF Cell Expansion | PMB | 3,125 | 93,732 | 156,847 |
| RL-0041.R2 | River Corridor Soil & Groundwater (618-10) | PMB | 1,847 | 38,719 | 57,566 |
| Sub Total | | PMB | 4,972 | 132,451 | 214,413 |
| Fee | | | 580 | 13,355 | |
| Total | | | 5,552 | 145,806 | |

* PMB = Performance Measurement Baseline.



ERDF

Super Cells 9 and 10 Construction

WCH is incorporating comments from the U.S. Environmental Protection Agency (EPA) on the final *Construction Quality Assurance (CQA) Report for Super Cell 10*. WCH soon will submit the report to the U.S. Department of Energy (DOE), Richland Operations Office and the EPA.

WCH is modifying the leachate piping system and raising the manholes associated with the facility's two new leachate storage tanks (LST 3 and LST 4). LST 4 was placed into service earlier this month, and LST 3 is expected to be authorized for use next month. The new tanks measure 100 feet in diameter with a 425,000-gallon capacity.

Facility and Equipment Upgrades

Significant progress is being made with the construction of ERDF's new maintenance facilities. The project team poured the stem walls for the west addition to the transportation maintenance facility and began erecting structural steel for the east addition. Roofing and siding installation was completed at the equipment maintenance facility/operations center, and interior painting is under way at the container maintenance facility.

The container maintenance facility will include a large container repair line, a maintenance shop, and a weld area. The equipment maintenance facility will include two service lines, an operational storage facility, a large concrete pad, and an exterior awning over a smaller concrete pad. The new operations center will help alleviate severe overcrowding of personnel and also accommodate new employees hired to handle the increasing waste volumes.

The expanded transportation maintenance facility will include two additional truck bays, a large concrete pad, an exterior awning that will cover two smaller concrete pads, and a conference room. The project began pouring the concrete footers on the east side of the building.



ERDF (Continued)



An employee with Washington Closure Hanford subcontractor ELRFowler prepares to stand a piece of structural steel at the east addition of ERDF's transportation maintenance facility. (Photo 1)

ERDF (Continued)



ELRFowler erects structural steel for the east addition of the transportation maintenance facility at ERDF. (Photo 2)

ERDF (Continued)



Two new truck bays are being added to ERDF's transportation maintenance facility. The new facility will help ERDF personnel safely and efficiently handle increased waste volumes. (Photo 3)

ERDF (Continued)



ELRFowler completed installation of the siding and roofing at ERDF's equipment maintenance facility/operations center. (Photo 4)

ERDF (Continued)

Pacific Northwest National Laboratory (PNNL) continues to produce radio-frequency identification tags for a new waste container tracking system at ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports.

WCH subcontractor DelHur Industries is expected to install the conveyer and hopper for ERDF's new batch plant. WCH is scheduled to begin batch plant operations next month. The batch plant will produce "flow fill" concrete used to mix with debris, ensuring no void space during disposal operations. In support of the batch plant, WCH purchased two concrete mixer trucks and a pump truck from Peters and Keatts Equipment Inc. Peters and Keatts is based in Lewiston, Idaho.

The final report for ERDF's new septic system has been submitted to the Washington State Department of Health. It is expected to be in service by early April. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

TradeWind Services continues to construct weather enclosures for the crest pads associated with cells 1 and 2. The enclosures were designed by Vista Engineering, a local company.



Work is under way to construct the steel structures for crest pad buildings for cells 1 and 2. (Photo 5)

ERDF (Continued)

Upcoming Activities

- Continue construction of the container maintenance facility.
- Continue construction of the equipment maintenance facility/operations center.
- Continue construction of the transportation maintenance facility.



618-10 Burial Ground

Trench Remediation Project

WCH began excavating surge trenches at the 618-10 Burial Ground. Surge trenches are excavated in clean soil adjacent to the burial ground trench areas, providing a below-ground area to hold material excavated during the remediation process. Trench remediation is expected to begin in April.



Washington Closure Hanford begins excavating surge trenches at the 618-10 Burial Ground. (Photo 6)

618-10 Burial Ground (Continued)



A front-end loader moves soil during surge trench excavation activities at the 618-10 Burial Ground. (Photo 7)

The project team continued with training and mockup exercises, and is working to install wells and water tanks for fire control and dust suppression. It also continues to mobilize for remediation. Work to install roads, office trailers, and waste container transfer areas is complete.

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-level radioactive waste from 300 Area laboratories and fuel development facilities. Low-activity wastes were primarily disposed in 12 trenches, while the moderate- and high-activity wastes were disposed in 94 vertical pipe units (VPUs). The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

618-10 Burial Ground (Continued)

In early September, WCH completed intrusive characterization field operations at the burial ground. Test pits were dug through a subset of disposal trenches and unearthing a limited number of drums to verify the condition and types of wastes that were disposed.

Several drums containing radioactive waste, a shipping cask, and miscellaneous waste were discovered during the intrusive trench characterization activities. The drums contained depleted uranium and uranium oxide. In addition, “concreted” 55-gallon drums also were discovered.

Based on the records research and the finds during intrusive characterization, the number of drums the burial ground may contain is estimated to be as many as 4,000. That includes an estimated 800 concreted drums that were used to dispose of highly radioactive waste nested inside a pipe surrounded by concrete. The pipe contains the waste and the concrete provides radiation shielding for its contents. Workers also found a cask with unknown contents, bollards, bottles, metal pieces, and other miscellaneous debris.

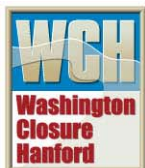
Nonintrusive characterization field activities were completed in May. The scope of activities carried out as part of nonintrusive characterization included geophysical delineation, in situ characterization using a multi-detector probe, and soil sampling from below a selection of 10 VPUs. During in situ characterization, measurements were collected for 100 cone penetrometers in the trench area and 375 cone penetrometers in the VPU area.

Upcoming Activities

- Continue excavation of surge trenches.
- Continue with construction of site upgrades.
- Continue with training and mockups, and conduct drills.

Video

[Click here to view the video showing preparation for trench remediation at the 618-10 Burial Ground.](#)



618-11 Burial Ground

WCH continued nonintrusive characterization field activities at the 618-11 Burial Ground. The purpose of nonintrusive characterization is to characterize the burial ground's contents without opening or exposing them to workers or the surface environment. The data collected will be used to help plan remediation strategies.

The project team is performing geophysical delineation to help locate each of the burial ground's VPUs and caissons. The delineation is determined using reconnaissance-level magnetic field survey, detailed level magnetic and time domain electromagnetic induction (TDEM) survey, and ground-penetrating radar (GPR) survey.

Beginning next month, the project team will use data gathered during geophysical delineation to install cone penetrometers (narrow steel tubes) about 6 to 8 inches around each VPU and to an approximate depth of 6 feet below the VPU. A gamma logging probe will then be inserted into the cone penetrometers to identify the location of radioactive materials within the VPUs.



Workers from Washington Closure Hanford subcontractor Sage Earth Science of Idaho Falls, Idaho, prepare for geophysical delineation at the 618-11 Burial Ground. (Photo 8)

618-11 Burial Ground (Continued)



A worker from Sage Earth Science performs geophysical delineation at the 618-11 Burial Ground. Washington Closure Hanford soon will begin in situ radiological characterization of the burial ground's vertical pipe units. (Photo 9)

618-11 Burial Ground (Continued)

The 618-11 Burial Ground operated from March 1962 to December 1967 and contains three slope-sided trenches, five large caissons, and 50 VPUs. It received low- to high-activity waste from 300 Area laboratories and fuel development facilities.

Similar to the 618-10 Burial Ground, 618-11 is one of WCH's most hazardous and complex cleanup projects. The site is located in the 300 Area, adjacent to Energy Northwest's commercial nuclear power plant (Columbia Generating Station) and near the Columbia River.

The VPUs at the 618-11 Burial Ground are similar to those at 618-10. They typically were constructed by welding five, 55-gallon bottomless drums end to end. The caissons were constructed of corrugated metal pipe (8-foot diameter, 10-foot long), with the top of the caisson 15 feet below grade and connected to the surface by an offset pipe (3-foot diameter) with a dome-type cap. The trenches are 900 feet long by 500 feet wide and 25 feet deep.

Low- to moderate-activity waste typically was disposed in the trenches, and moderate- to-high activity waste was disposed in the VPUs and caissons. Some high-activity waste was placed inside concreted-sealed drums and disposed in the trenches.

Upcoming Activities

- Complete surface geophysics field activities.
- Continue mobilization activities.
- Continue characterization project startup review activities.



100-F Area

WCH and subcontractor Ojeda Business Ventures continued to make significant progress with the remediation of 19 waste sites at 100-F Area. Field work began in September and will conclude this spring.

The project team began filling previously excavated potholes with clean soil in preparation for breaking the 100-F-57 concrete pad. Once the pad is broken it will be excavated and loaded into containers for transport to ERDF.

Loadout also was completed at 100-F-45. The site is located on the bank of the Columbia River and contains dislodged and re-buried sections of river outfall pipelines.

The project team is awaiting sample results from 100-F-26:7. Before removing the pipelines, the approximately 200 gallons of sodium dichromate from pipelines was safely and efficiently secured, preventing potential leaking and groundwater contamination. Waste profiles are being developed.

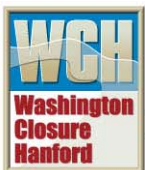
The project team also is awaiting sample results from 100-F-49 (old maintenance garage lube pit foundation, pipelines, and drywells).

The following sites have had the soil excavated and loaded out:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (river bank pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-61 (stained soil site)
- 100-F-8 (drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines).

F Reactor operated from 1945 to 1965 as one of Hanford's nine surplus plutonium production reactors for the nation's nuclear weapons program. The reactor was cocooned in 2003. During reactor construction and operations, waste was disposed in unlined pits and trenches throughout the site.

The 100-F Area also was the home of the experimental animal farm (EAF), which from 1945 to 1976 operated adjacent to the reactor site. The EAF used animals for studying the potential effects of ionizing radiation exposure to humans in the occupational setting. Reactor and EAF sites in the 100-F Area contributed to the discharge of contaminated cooling water, other liquids, and solid wastes.

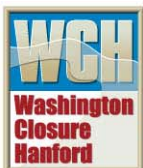


100-F Area (Continued)

WCH completed cleanup of 53 waste sites at F Area in 2008, loading out more than 408,000 tons of waste. However, during the course of cleanup, the 19 additional waste sites were discovered.

Upcoming Activities

- Begin breaking concrete and loading soil at 100-F-57.
- Begin plume removal at 100-F-61.
- Absorb sludge in tank at 100-F-49.
- Continue anomaly sampling campaign.



IU 2 & 6 Segment 1

WCH completed revegetation of the five IU 2&6 waste sites on November 30. Segment 1 encompasses about 23 square miles of the northwestern portion of the Hanford Site, away from the nine surplus plutonium production reactor areas. The waste sites were unique because they were primarily used for housing and support areas.

The remediation sites were:

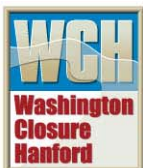
- 600-341 (four areas that contained dry cell battery remnants and/or battery debris)
- 600-343 (residual ash from burned material and dumped asphalt in excavation trench)
- 600-344 (stained area)
- 600-345 (stained area with oil filters)
- 600-346 (four small fly-ash dump areas with metal debris).

Earlier this year a global positioning environmental radiological survey indicated that an additional site, 600-342, did not require additional remediation.



Confirmatory Sampling

WCH completed sampling of ARRA confirmatory sites. Sampling was performed at 41 sites in accordance with the regulator approved work instructions that were completed earlier this year. Based on the sampling results, documentation is being prepared to recommend whether the sites require remediation. This documentation is then submitted to the DOE and the regulatory agencies for review and approval. The recommendations have been approved for more than 75% of the sites, and the remaining documents are in the review and approval process.



General

Media, Visits, Press Releases

- A group of students and faculty from the University of Oregon and Oregon State University visited ERDF as part of a Hanford Site tour. The group was briefed on facility operations and procedures and interacted with three Washington Closure Hanford employees who are recent college graduates.

Contracting Actions

No significant contracting actions this week.

