



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending August 1, 2010

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

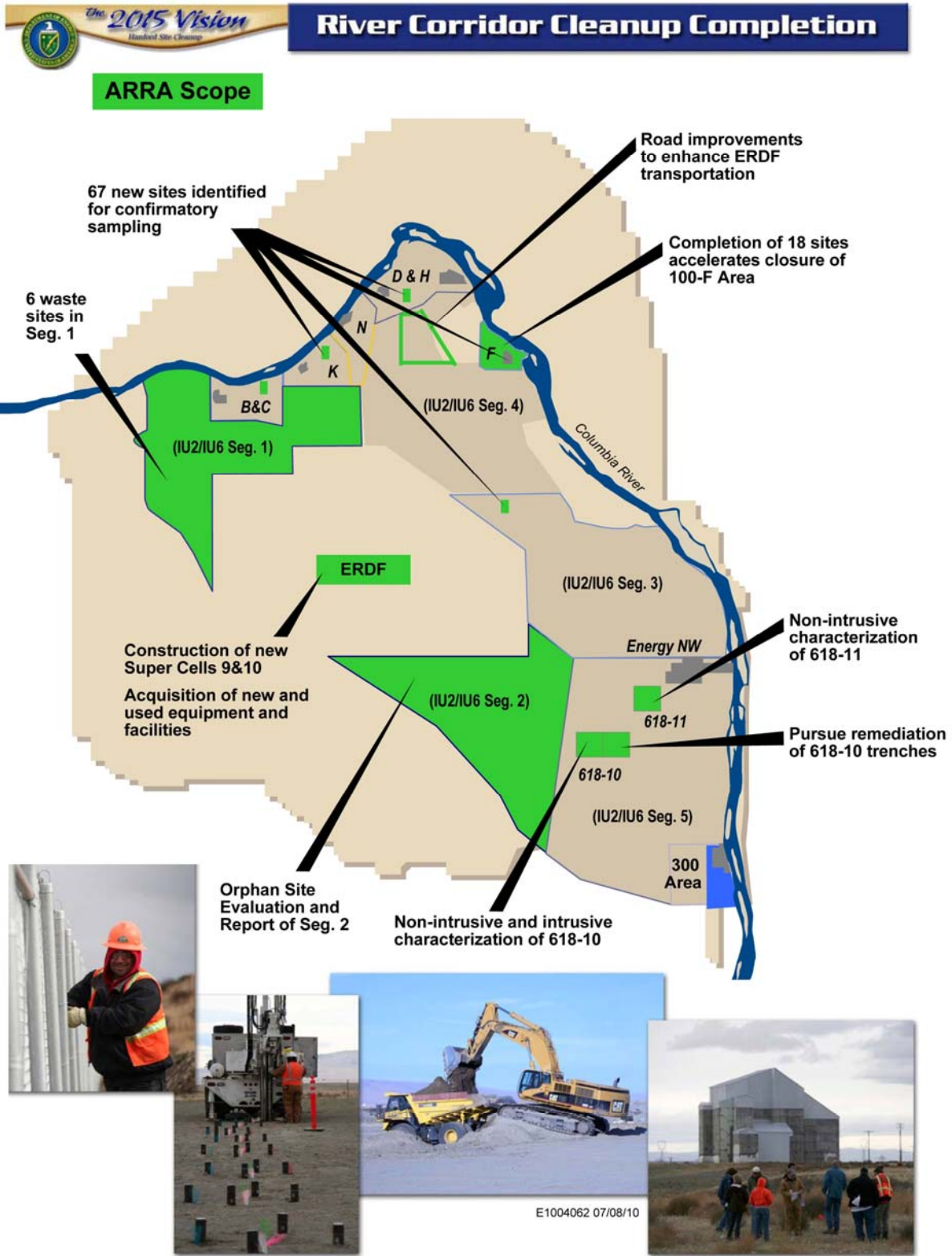
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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)



E1004062 07/08/10



Safety

Safety Accomplishments

As of June 27, 2010, WCH and its subcontractors have worked 225,874 hours of ARRA scope with no safety incidents.

Hazard Reductions

The River Corridor Closure Project's "Hot Flashes" are used to share safety information with all WCH employees. Last week's edition focused on wet-globe temperature, or WBGT index.

The wet-bulb globe temperature, or WBGT index, provides a useful tool for assessing multiple environmental variables and their overall contribution to heat stress. The WBGT instrument uses the following three sensors to calculate the WBGT:

- Ambient temperature (DB) is measured by the dry-bulb sensor. As a single reading, this is the normal outdoor temperature reading without correction for humidity, wind, or radiant heat sources.
- The wet-bulb (WB) sensor is a dry-bulb sensor with a damp cloth cover. The wet-bulb sensor measures the affect of wind, which enhances evaporative cooling, and the affect of humidity, which prevents evaporative cooling. The cloth cover must be damp throughout the entire monitoring session to be accurate.
- The globe temperature (GT) is a dry-bulb temperature sensor within a black, painted globe. The globe temperature measures the contribution of radiant sources, such as the sun or hot processes, to the overall work area temperature felt by the employee.

The WBGT instrument integrates the three measurements into a single WBGT reading by adding a percentage of each reading.

- For work outdoors in direct sunlight $WBGT = 0.7WB + 0.2 GT + 0.1DB$.
- For work indoors or with complete cloud cover $WBGT = 0.7WB + 0.3GT$.

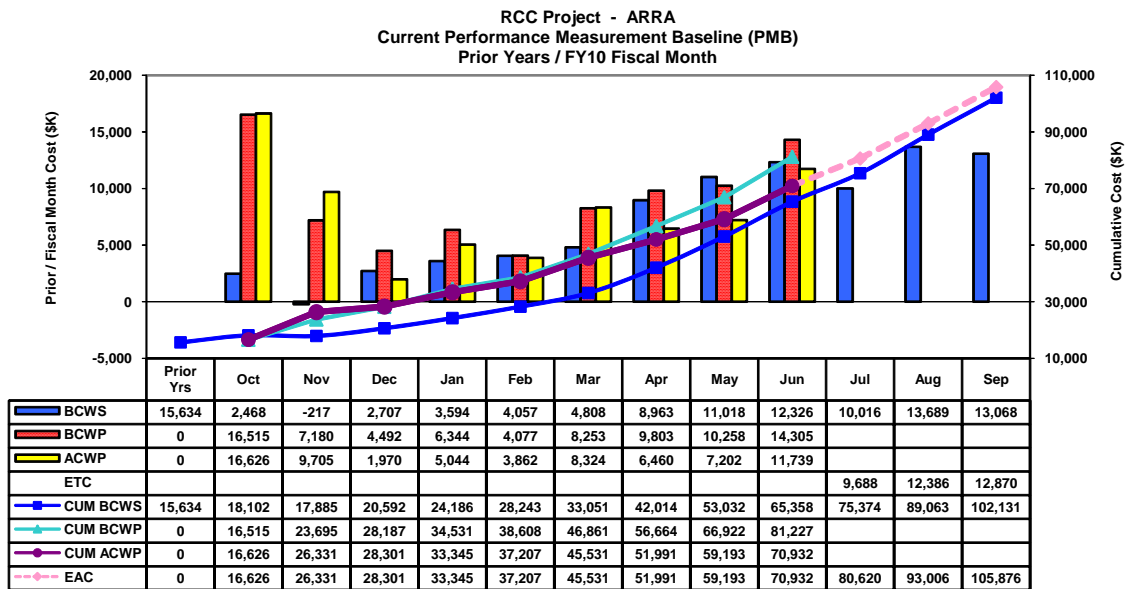
If the humidity is low, there is not significant radiant load, and there is a slight breeze the WBGT reading may be less than normal ambient temperature. However, in this case, the reading accurately reflects that the weather conditions enhance body cooling. If work must be performed on black plastic or asphalt, the radiant load will be significant and the globe temperature will influence the WBGT to be higher than normal ambient temperature. For the WBGT to be representative of the conditions in the work area, a careful evaluation must be performed of the location of WBGT instrument and where it should be placed. If the WBGT readings from another location are used, an assessment of this process must be made to ensure that the weather conditions at the location of the WBGT instrument are in fact the same as the location for which the readings are used. Finally, like all IH instruments, the WBGT instrument must be properly used, maintained, and calibrated.



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

River Corridor Closure Project - ARRA



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

Apportionment Number	Apportionment Title		June 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	9,088	51,305	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,651	19,627	38,907
Sub Total		PMB	11,739	70,932	177,979
Fee			419	6,284	
Total			12,158	77,216	

* PMB is the Performance Measurement Baseline.



ERDF

Super Cells 9 and 10 Construction

WCH subcontractor TradeWind Services and its main subcontractor, DelHur Industries, continue construction of the liner and leachate collection systems for super cells 9 and 10.

The liner system consists of a 3-foot layer of admix, two layers of high-density polyethylene (HDPE), a 1-foot layer of gravel with a 12-inch perforated drainage pipe, a geocomposite layer, and two geotextile layers. Admix is a 3-foot low-permeability compacted soil layer of the liner system and is manufactured by mixing excavated soil with imported bentonite. A 3-foot protective soil layer covers the liner system.

Approximately 57% of admix used in the liner system has been placed in super cell 10. Earlier this month, the project team completed the placement of approximately 90,000 cubic yards of admix in super cell 9.



Washington Closure Hanford subcontractor TradeWind Services works to install admix in super cell 10 at the Environmental Restoration Disposal Facility.

ERDF (Continued)



A worker rolls admix on the south slope of super cell 10 at the Environmental Restoration Disposal Facility.

ERDF (Continued)

The installation of the HDPE and geocomposite liners in super cell 9 also continues at a rapid pace. More than 90% of the secondary HDPE liner and 65% of the primary HDPE liner has been installed. The geocomposite liner is 70% complete.



Workers continue to install the primary high-density polyethylene liner in super cell 9 while admix is being placed in super cell 10 at the Environmental Restoration Disposal Facility.

ERDF (Continued)



A worker installs a section of the primary high-density polyethylene liner (HDPE) in super cell 9 at the Environmental Restoration Disposal Facility. The HDPE is installed in 540-by-24-foot rolls.

ERDF (Continued)

The project team also continues to install the secondary riser pipes from the sump of super cell 9 to the crest pad building. Work to form the lysimeter sump area in super cell 10 also is underway.

The onsite screening plant continues to stockpile gravel for the gravel drainage layer of the liner system. About 20,000 cubic yards of gravel, enough for one of the super cells, has been manufactured. Each super cell is about 17 acres (including the base and the side slopes).

Construction also continues on the new leachate holding tank that will contain the leachate from super cells 9 and 10. The new holding tank is 100 feet in diameter with a capacity of 425,000 gallons. Each of ERDF's two existing holding tanks is 80 feet in diameter with a capacity of 275,000 gallons. Work also continues on the crest pad buildings for super cells 9 and 10, and the leachate transmission pipe from super cells 9 and 10 to the new leachate holding tank.

Facility and Equipment Upgrades

ELRFowler has submitted the 90% design of ERDF's new maintenance facilities and operations center and has begun to mobilize. WCH will begin reviewing the 90% design next week. ELRFowler is a joint venture between local companies ELR Consulting and Fowler General Construction.

The upgraded transportation truck 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 new container maintenance facility will include a large container repair line, a maintenance shop, a weld area, a lunch area, and an exterior awning over a concrete pad. The new 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.

WCH has authorized Pacific Northwest National Laboratory (PNNL) to begin work on a new waste container tracking system for ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports.

Columbia Engineers and Constructors submitted its final design of ERDF's new septic system. WCH is preparing a change notice to ELRFowler for construction, which is scheduled to begin this fall. Columbia Engineers and Constructors is a small business based in Richland, Washington.

WCH is expected to receive delivery of two Genie articulating boom man lifts from Powers Equipment Company in mid-August. The man lifts will be used for elevated work such as installing rigging, washing out hazardous waste containers, applying fixatives, and adjusting lights. Powers Equipment Company is based in Pasco, Washington.

Hanford Site contractor Mission Support Alliance (MSA) awarded a subcontract to Fowler General Construction for repair work on three Hanford Site roads – Routes 1, 2, and 4. The roads are used to transport waste material for disposal at ERDF. Fowler has begun to issue submittals.



ERDF (Continued)

WCH subcontractor George A. Grant continues with construction of a new lighting system at ERDF's transportation yard. A total of 15 light posts have been erected and the electrical is being installed. The transportation yard is used for truck-and-trailer combinations and other equipment. The truck-and-trailer combinations are used to transport non-regulated soil for disposal at ERDF. The project is scheduled to be completed by mid-August.

Contractors are preparing proposals for the construction of ERDF's onsite fueling station. Proposals are due next week. Construction of the fueling station, designed by Sage Tech and WHPacific, is scheduled to begin in late summer. Currently, disposal equipment is fueled by a subcontractor that makes daily deliveries, and transportation uses the 200 East fuel station. Sage Tech is based in Richland, Washington. WHPacific is an Alaska-based company with an office in Richland, Washington. It specializes in all facets of building engineering, land development, water resources, survey, architecture, and transportation.

Sage Tech and WHPacific are developing a design package for a new batch plant at ERDF. The batch plant will manufacture concrete used to mix with debris, ensuring no void space during disposal operations. In support of the batch plant, WCH awarded two subcontracts to Peters and Keatts Equipment Inc. for a new pump truck and two concrete mixer trucks. The mixer trucks were delivered to ERDF, while the pump truck is scheduled to be delivered next week. Peters and Keatts is based in Lewiston, Idaho.

A change notice has been issued to TradeWind Services for the construction of weather enclosures for the crest pad buildings associated with cells 1 and 2.

Upcoming Activities

- Continue to manufacture admix and place in super cell 10.
- Continue construction of the liner and leachate collection system for super cell 9.
- Continue work on the crest pad buildings for super cells 9 and 10.
- Review ELRFowler's 90% design of the maintenance facilities and operations center.



618-10 Burial Ground

618-10 Non-Intrusive Characterization/Trench Remediation Project

WCH continues to prepare for intrusive characterization at the 618-10 Burial Ground. Field operations are scheduled to begin in early August. They will involve digging test pits in several disposal trenches to verify the condition and types of waste that were disposed.

The project team continued to perform mock-ups of drum characterization techniques, instrumentation, and procedural steps required in work packages. Mock-ups of the drum-penetration facility also were conducted. Because the burial ground might contain potentially flammable material, unearthed drums will be opened in an onsite penetration facility with negative air pressure and remotely operated equipment. A sand hopper will be used to quench chemical reactions. The development of procurement packages for trench remediation labor and equipment also continues.



A telehandler transports a drum to the drum punch facility during mock-up activities at the 618-10 Burial Ground. Intrusive characterization is scheduled to begin in early August.

618-10 Burial Ground (Continued)



A drum is placed in the drum punch facility during mock-up activities at the 618-10 Burial Ground.

618-10 Burial Ground (Continued)



Washington Closure Hanford employees monitor a drum being punched inside the drum punch facility during mock-up activities at the 618-10 Burial Ground.

In early July, WCH awarded a subcontract worth nearly \$3.7 million to install water, electricity, roads, office trailers, and waste container transfer areas at the 618-10 Burial Ground. White Shield/Apollo is a small, disadvantaged joint venture between White Shield Inc. of Pasco,

618-10 Burial Ground (Continued)

Washington, and Apollo Inc. of Kennewick, Washington. White Shield/Apollo will begin work at the burial ground this fall and is scheduled to complete infrastructure work by February 2011.

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 23 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.

Available records indicate that the burial ground was used to dispose of cardboard boxes of low-level waste and miscellaneous laboratory debris including bottles, boxes, filters, aluminum cuttings, spent fuel fragments in small juice cans, radiologically contaminated equipment and laboratory instruments, and high-level liquid waste sealed in drums.

Work continues on the development of the non-intrusive characterization report. Non-intrusive characterization field activities were completed May 20. The scope of activities carried out as part of non-intrusive 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. Data collected during non-intrusive characterization activities are being used to develop and evaluate safe and effective strategies for intrusive characterization (if required) and/or remediation.

Upcoming Activities

- Continue work on procurement packages for trench remediation labor and equipment.
- Begin intrusive characterization field activities.
- Continue development of non-intrusive characterization report.



100-F Area

WCH continues to prepare for remediation of the 18 remaining waste sites at 100-F Area. The project team completed work packages for mobilization activities, and WCH staff has begun to move to the 100-F Area site. WCH also continues to review submittals from subcontractor Ojeda Business Ventures.

Earlier this summer, WCH awarded a subcontract worth \$3.8 million to Ojeda to remediate the waste sites. Ojeda is a small disadvantaged business based in Richland, Washington, that specializes in construction, renovation, and construction management of federal government projects. Remediation of the sites is scheduled to begin in September.

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.

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, 18 additional waste sites were discovered. The 18 sites that require remediation are:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-26:7 (sodium dichromate and sodium silicate pipelines)
- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (buried riverbank effluent pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-49 (maintenance garage lube pit foundation, pipelines, drywells)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-56 (scattered surface debris, stains)
- 100-F-57 (buried pipeline cradle debris)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-60 (pipeline)
- 100-F-61 (stained soil site)
- 100-F-8 (French drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines).



100-F Area (Continued)

Upcoming Activities

- Continue mobilization PSR completion activities.
- Continue remediation PSR activities.
- Continue reviewing subcontractor submittals.



F Reactor was the third of Hanford's three original nuclear reactors. It was cocooned in 2003, making it the third Hanford reactor to have its core encased in a concrete shell.

100-F Area (Continued)



This is a recent photo of site 100-F-62. The site contains septic lines from the animal experimental farm, which operated from 1945-1976 adjacent to the reactor area.

Video

[Click here to view a video of the 100-F Area remediation project manager discussing the upcoming remediation of 18 waste sites.](#)

IU 2 & 6 Segment 1

Remaining Segment 1 work instructions for waste site-specific verification closeout sample plans have been reviewed and approved by the U.S. Department of Energy, Richland Operations Office (RL) and the U.S. Environmental Protection Agency. Verification closeout samples for sites 600-341 and 600-344 have been collected for laboratory analysis.

Closeout verification sample data has been received from the analytical laboratory for waste site 600-345. Data for the southeast quadrant (quadrant 4) of the waste site remains above the remedial action goal for total petroleum hydrocarbons (TPH). Waste site 600-345 was excavated earlier this year to approximately 1.5 feet below grade, removing the stained soil and oil filters residing on the ground surface. Additional remediation of the southeast quadrant is required to remove the TPH contaminated soil to then be followed by a second round of closeout sampling.

Remediation of five IU 2 & 6 Segment 1 waste sites discovered during the 2008 orphan site evaluation was completed in April. The remediation sites are as follows:

- 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.

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

Remediation of these waste sites will contribute to RL's Vision 2015 goal of completing regulatory closure work in IU 2 & 6 Segment 1 by the end of 2010.



Confirmatory Sampling

WCH and subcontractor Terranear (TPMC) continue to prepare for confirmatory sampling of 67 waste sites at 100-D, 100-F, 100-K, and 100-IU 2/6 Areas. Confirmatory sampling is performed for waste sites that require additional information for determining the need for site remediation. TPMC is scheduled to begin sampling at 100-D in early August.

WCH has issued the confirmatory sampling work instructions and remove, treat, and dispose memos for 62 of 66 sites for 100-D, 100-K, and 100-IU 2/6. In addition, the sampling instruction for the 100-F Area site that was added to the confirmatory scope also was approved. The remaining four 100-D Area sampling instructions are with DOE and the regulatory agencies for review or comment resolution, with a forecasted completion date in early August. Of the 67 sites designated for confirmatory sampling, 26 have been recommended to remove, treat, and dispose, which means they will not undergo the sampling process.

Sites that pass the confirmatory sampling process will be closed out and no further action will be required under the existing interim record of decision. Those that fail will be recommended for remediation to meet regulatory standards.



General

Mentoring/Training

No significant mentoring/training events this week.

Media, Visits, Press Releases

No significant media events this week.

Contracting Actions

- 618-10 infrastructure design has been completed and accepted by WCH.
- North Wind requested an extension of the due date from August 19 to September 30 for the 618-10 Non-intrusive Characterization Report.

